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Project evaluation series

Final evaluation of the project "Mainstreaming the use and conservation of agrobiodiversity in public policy through integrated strategies and *in situ* implementation in four Andean Highlands provinces"

GCP/ECU/086/GFF GEF ID 4777

July 2018

PROJECT EVALUATION SERIES

**Final Evaluation of the Project “Mainstreaming
the Use and Conservation of Agrobiodiversity in
Public Policy through Integrated Strategies and
in situ Implementation in four Andean
Highlands provinces”**

**GCP/ECU/086/GFF
GEF ID 4777**

**FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS –
OFFICE OF EVALUATION**

> i `m2018

Food and Agriculture Organization of the United Nations

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Acronyms and abbreviations

ASOPROSARIV	SARIV Food Production Association (Food Security)
BADC	Bio-knowledge and Agricultural Development Centre
BNG	National Bank of Germplasm
CEDEIN	Indigenous Development Centre
CEPCU	Centre for Pluricultural Studies
CONAIE	Confederation of Indigenous Nationalities of Ecuador
COOTAD	Territorial Organization, Autonomy and Decentralization Organic Code
COPROBICH	Corporation of Organic Producers and Traders Bio Taita Chimborazo
CORPOPURUHA	Corporation of Rural Communities in Chimborazo
CPF	Country Programming Framework
CyUS-AB	Conservation and sustainable use of agrobiodiversity
DAG	Decentralised Autonomous Government
DAPLE	Water Department of the Parish of La Esperanza
DENAREF	INIAP's Department of National Plant Genetic Resources
DIM	Direct Implementation Modality
EIA	Environmental Impact Assessment
ESPOCH	Polytechnic University of Chimborazo
FAO	Food and Agriculture Organization of the United Nations
FAOEC	FAO Representation in Ecuador
FEPP	Ecuadorian Fund Populorum Progressio
FPIC	Free, Prior and Informed Consent
GEF	Global Environment Facility
GiZ	German Organisation for Development
IALCSH	Hunger Free Latin America and the Caribbean Initiative
IMES	Internal monitoring and evaluation system
INEC	National Statistics and Census Institute
INIAP	Autonomous National Institute of Agricultural Research
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
LoA	Letter of Agreement
LTO	Lead Technical Officer
LUDP	Land Use and Development Plan
MAE	Ministry of the Environment
MAG	Ministry of Agriculture and Livestock
MPH	Ministry of Public Health
NBS	National Biodiversity Strategy
NCCS	Ecuador's National Climate Change Strategy
OED	FAO Office of Evaluation
OPIM	Operational Partner Implementation Modality
PGRFA	Plant genetic resources for food and agriculture
PGS	Participatory guarantee systems
PMC	Project Management Committee

PNBV	National Plan for Good Living
PPR	Project progress report
PROMAREN	Project on the Management of Chimborazo's Natural Resources
PSP	Policies, Strategies and Plans
PUCE-SI	Pontifical Catholic University of Ecuador in Ibarra
SDG	Sustainable Development Goals
TCP	Technical Cooperation Programme
UCOCP	Cantonal Union of Paltas Small-farmers' Organizations
UNEG	United Nations Evaluation Group
UNFCCC	United Nations Framework Convention on Climate Change
UNORCAC	Union of Cotacachi Indigenous Small-farmers' Organizations
USD	United States Dollars
UTN	Universidad Técnica del Norte (Imbabura)
UTPL	Technical University of Loja
WPAB	Annual Work Plan and Budget

Executive Summary

Introduction

1. This report presents the findings, conclusions and recommendations of the final evaluation of project GCP/ECU/086/GFF "*Mainstreaming of the Use and Conservation of Agrobiodiversity in Public Policies through Integrated Strategies and In situ Implementation in four Andean Highlands Provinces*" that was approved with a total budget of USD 7,846,235, of which USD 1,250,000 came from the Global Environment Facility (GEF). The cofinancing of USD 6,596,235 includes USD 667,000 from FAO and USD 5,929,235 from national entities such as the Autonomous National Institute of Agricultural Research (INIAP), the Ministry of Agriculture and Livestock (MAG), the Heifer Foundation and the Decentralised Autonomous Governments (DAGs) in kind. The project began operations on 01 August 2014 for a period of three years, which was extended without additional cost until 31 March 2018.
2. The **global environmental objective** of the project is: *to mainstream the use and conservation of agrobiodiversity (ex situ and in situ) in policies, farming systems, and education and awareness programmes in Andean Highlands provinces of Ecuador such as Loja, Chimborazo, Pichincha and Imbabura, in order to contribute towards the sustainable management and resilience of agro-ecosystems in the Andean and other similar mountain dry-land regions.* The **development objective** of the project is, *"To mainstream the use and conservation (ex situ and in situ) of agrobiodiversity in the Ecuadorian Andean Highlands provinces of Loja, Chimborazo, Pichincha and Imbabura in order to increase and improve the provision of goods and services from agricultural production, contribute to food security, and reduce rural poverty."* The three specific objectives of the project (also referred to as components) are:
 - To mainstream the conservation and sustainable use of agrobiodiversity in public policies and promote their implementation;
 - To scale up existing good practices of *in situ* and *ex situ* conservation and sustainable use of agrobiodiversity; and
 - To educate and raise awareness among decision-makers, teachers and consumers about the environmental, nutritional, cultural and economic value of agrobiodiversity.
3. The final evaluation began in September 2017. At the request of the FAO Office of Evaluation (OED) in coordination with the FAO Representation in Ecuador (FAO-EC) which requested the completion of three external evaluations at the same time as projects funded by the Global Environment Facility (GEF). The evaluations in question are the final evaluation of the Project Management of Chimborazo's Natural Resources - PROMAREN (GCP/ECU/080/GFF - GEF ID 3266) and the mid-term evaluation of the Project Conservation and Sustainable Use of Biodiversity, Forests, Soil and Water to achieve Good Living/Sumac Kawsay in the Napo province (GCP/ECU/082/GFF – GEF ID 4774). Field visits to each of the 9 cantons in the four provinces participating in the project were completed in October 2017. The objectives of the evaluation are:
 - To assess the relevance of the intervention in relation to the needs and expectations of the beneficiaries, the Country Development Objectives

and Strategic Objective (SO) 2 of FAO and objectives BD-2 and BD-4 of the GEF;

- To examine the effectiveness of the project in terms of achieving objectives, outcomes, potential impacts and expected outputs as well as their efficiency and the sustainability of its main activities;
- Identify lessons and key factors in the design, implementation and sustainability of the outcomes so that they may be considered in future projects or interventions of the GEF or other donors, partners involved, national and provincial counterparts.

Key findings broken down by the GEF's rating and evaluation questions

Overall rating of results: Moderately Satisfactory¹

4. To a great extent the project managed to achieve the expected outcomes of its first two specific objectives of mainstreaming the conservation and sustainable use of agrobiodiversity in public policies and land use and development plans (LUDP), and scaling up *in situ* management and sustainable use of agrobiodiversity and strengthening their coordination and interaction with *ex situ* conservation and research activities. It was instrumental in mainstreaming the conservation of agrobiodiversity in the National Biodiversity Strategy (2016) and in several LUDP at a provincial and cantonal level. In the province of Chimborazo the LUDP assigns government funds to promote agrobiodiversity. It also facilitated the drafting of the law on agrobiodiversity and seeds, which was passed and registered in June 2017. To date, however, its implementing regulation has not been passed. A total of 494 accessions of supposedly new varieties of crops were provided to the BNG and it was possible to scale up good practices associated with the conservation and development of *in situ* agrobiodiversity for the benefit of more than 4,000 people, most of whom are women. However, the sustainability of these practices is at risk due to the promoters stopping the technical monitoring at the end of the project. With regard to achieving the outcomes of the third specific objective - to educate and raise awareness among decision-makers, teachers, students and consumers about the environmental, nutritional, cultural and economic value of agrobiodiversity - the project was less successful. In particular, it did not manage to develop the exchange of information, lessons learned or good practices among its farmers and its intra and inter provincial organisations. Furthermore, it did not establish a communication strategy to promote agrobiodiversity.

Relevance

Evaluation question 1: Were the project strategy and actions appropriate for meeting the needs of all the stakeholders involved in matters of agrobiodiversity, including support for implementing policies and programmes by the Government of Ecuador, the GEF and FAO?

Total relevance rating: Highly Satisfactory

5. In particular, the evaluation highly valued the fact that the project was mainly designed by a government entity (INIAP) with two main focus points that tie in with the country's specific needs. On the one hand, component 1 is aligned with the political processes of central government and the DAGs relating to acknowledging

¹ Overall rating of the project in terms of relevance, effectiveness and efficiency.

and mainstreaming agrobiodiversity in the country's strategic and legal framework and in the Land Use and Development Plans (LUDPs). Equally, it ties in with the GEF's priorities (in particular BD2 and BD4) and FAO's strategic objectives (in particular OE2). It also aims to contribute to the fulfilment of relevant international agreements such as the Aichi Targets of the Convention on Biological Diversity (particularly Targets 7, 13 and 18) and make progress with the application of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA). On the other hand, component 2 directly supports small-scale farmers and their grassroots and second level organisations in progressing the conservation and sustainable use of agrobiodiversity under participatory and inclusive concepts that include indigenous communities and rural women. However, the evaluation is moderately unsatisfied with the relevance of component 3 because it does not emphasise the importance of establishing a communication strategy to educate and raise awareness among the different stakeholders, or to develop synergies with other relevant programmes and projects, in particular with the GEF's PROMAREN project in the province of Chimborazo.

Effectiveness

Evaluation question 2: How effective has the project been in achieving the objectives and expected outcomes?

Total effectiveness rating: Satisfactory

6. The evaluation assesses the project's effectiveness as satisfactory in terms of it achieving its expected outcomes, taking into consideration that the project had to be completed in a very broad intervention area and lasted less than three years. With regard to component 1, the project facilitated the integration of agrobiodiversity in the National Biodiversity Strategy and some Land Use and Development Plans (LUDPs) at a provincial and cantonal level, and supported the drafting of the law on agrobiodiversity and seeds, which was approved and registered in June 2017. The law constitutes a strategic milestone for family farming, promoting research into and the development of agrobiodiversity in the country, and progressing the ITPGRFA, particularly Article 5 and Article 8 geared towards farmers' rights (FR).
7. With regard to component 2, the project was instrumental in the gathering and registration of 494 accessions of native varieties and their wild relatives of 17 crops, and in developing a database of 546 seeds from Chimborazo, Imbabura and Loja. It was also possible to establish three Bio-knowledge and Agricultural Development Centres (BADC), one of which is linked to a university in Imbabura and the other is in an area of land belonging to the provincial council of the province of Chimborazo. A total of 4,509 farmers and promoters participated in training linked to the conservation and sustainable use of agrobiodiversity, the application of the PGS and the development of short sales channels, particularly the development of agroecological fairs that are contributing to increasing farmers' incomes from USD 20 to almost USD100/week, which demonstrates that rural women's smallholdings can generate income exceeding the country's minimum wage (USD 375/month).
8. With regard to component 3, the achievements are more isolated. For example, on a national scale, the project did not achieve the outcomes to develop the internal exchange of information, or communication geared towards different groups to promote the incorporation of agrobiodiversity in relevant policies, strategies and

plans. At a provincial/cantonal level, communication focussed on raising awareness among 1,490 teachers and students. In the province of Loja, it has promoted the establishment of school gardens that are highly valued by teachers and students, and are very effective at enhancing communication about the benefits of agrobiodiversity and the preparation of organic fertilisers.

Efficiency

Evaluation question 3 (efficiency): Have the intervention methods, institutional structure and financial, technical and operational resources and procedures available helped or hindered the achievement of the project outcomes and objectives?

Total efficiency rating: Moderately Unsatisfactory

9. At a national level, despite the decision made by the Project Steering Committee to change the operational partner implementation modality (INIAP) to the direct implementation modality (FAO-EC) for political reasons, the modifications corresponding to the Prodoc and the cofinancing conditions were not made. This situation contributed to a delay in the implementation of activities, particularly under component 2, of around 10 months. In particular, it can be observed that INIAP did not manage to pledge all of the cofinancing intended, particularly since 2016 due to budget restrictions and political changes that reduced its role in agricultural extension, particularly with regard to the transfer of technology. It was also difficult to sign the LoA with the Heifer Foundation that, on the one hand, could not take on the role of service provider without prior training by FAO-EC and, on the other hand, continued in the Steering Committee subsequent to the decision to apply the DIM by FAO-EC which, in effect, resulted in the Foundation playing the role of both judge and defendant when it came to decision-making. In addition, the internal monitoring system and the management of risks did not contribute to improving the efficiency of planning and implementation. On the one hand, the monitoring and management of risks were focused on pursuing targets to fulfil the bureaucratic needs of the GEF and FAO. On the other hand, the project did not establish sufficient coordination mechanisms to stimulate reflection on the outcomes, lessons learned and good practices to replicate.
10. At a provincial/cantonal level, the project had to take on substantial logistical expenses because the INIAP and the Heifer Foundation did not have the vehicles required to facilitate the field visits and meetings. In addition, the project had to cover very dispersed intervention areas in the country's Andean area. However, the decision to sign a total of 19 partnership agreements between the Heifer Foundation and peasants' organisations and associations in the four provinces, together with the employment of local promoters, contributed towards reducing the costs associated with the activities performed in the communities involved.

Normative values

Evaluation question 4a: To what extent has the project, in its work with local communities, ensured that all the stakeholders participated in the decision-making process (including implementation of activities) and the empowerment of farmers in progressing with their rights?

Inclusiveness and participation rating: Satisfactory

11. The project achieved the effective participation of the stakeholders in the four provinces (above all at the level of the provincial and/or cantonal and parish DAGs, universities and NGOs involved, and peasants' organisations and associations). It was found that during the identification and design of the project, the INIAP and the Heifer Foundation consulted with a wide range of stakeholder representatives beforehand. The entry into 19 partnership agreements to support the transfer of technology and develop the marketing of agrobiodiversity products in local markets and fairs was very successful in promoting active participation by small-scale farmers. In particular, the project made it possible to exceed the planned number of participating farmers (4,509 instead of 3,800 people). The employment of three coordinators for each intervention area (north, central and south) and six promoters, four of which are bilingual indigenous people, facilitated the inclusive participation of Kichwa-speaking men and women in the activities and training of the project in the three intervention areas and contributed towards providing greater recognition of the promoters as holders of ancestral knowledge. The benefits of this approach included gathering 494 accessions and the local monitoring of the field activities with the beneficiaries.

Evaluation question 4b: To what extent has the project addressed gender equality issues in its design and contributed to the empowerment of women, young people and other vulnerable groups throughout its completion?

Gender rating: Highly Satisfactory

12. The evaluation highly values the application of gender equality in accordance with FAO's objectives in the design and implementation of the project. The project did not adopt a strategy geared specifically towards gender equality. However, in terms of participation, the participation of women was the equivalent of 70 percent of the 4,509 total beneficiaries, mainly because women are the main keepers of local varieties. With regard to access to employment and the generation of income, it was found that the vast majority of people who received support to form part of short sales channels (particularly agroecological fairs) are women. A study of agroecological fairs in La Esperanza and Saraguro concluded that they have contributed towards increasing sellers' annual incomes by 17.3 percent from 2015 to 2016, approximately 90 percent of whom are women. However, the evaluation found that their participation in these fairs has made it possible not only to generate financial income for the first time but also increase their self-esteem and power to purchase food, medicine, schoolbooks, etc. With regard to the workload, it is observed that the implementation of agriculturally diverse plots and the preparation of organic supplies around the farm saves women financial resources and time, although it was not possible to identify more specific data on the matter. However, the application of organic supplies and the handling of agrobiodiversity increases women's daily workload because they require intensive work that involves a lot of manual labour before becoming established. According to the women interviewed, in all of the cantons visited, this problem is compensated by the multiple benefits that agrobiodiversity offers them, which include control over seed production, medicinal products (which helps them to save on medical expenses) and for ancestral rituals.

Sustainability

Evaluation question 5: How sustainable are the outcomes achieved by the project at an environmental, social, financial and institutional level?

Total sustainability rating: Moderately Unlikely

13. Despite the approval of the agrobiodiversity law and its promotion via the NBS, the provincial and cantonal ordinances and the producers' high interest in consolidating and scaling up agrobiodiversity, future research and support for agrobiodiversity depend a lot on the Regulation to implement the law on agrobiodiversity and seeds being passed. The Regulation will, among others, define how the fund to be created for agrobiodiversity will work. If the Regulation is passed with 1.0 to 0.5 percent of the country's annual GDP to create and maintain the stability of the fund, it is likely that there will be sufficient resources to apply the law. In the event of a lower percentage, the scope will have to be reduced and it is unlikely that agrobiodiversity will be promoted on a national scale. In addition, the project did not manage to establish a communication strategy to promote passing this regulation and, according to evidence available, no mechanism or budget has been established to update, strengthen and broaden the main communications at an intra and inter-provincial level. In fact the lack of communication at these levels, partly due to the lack of time and resources, has not triggered the catalytic effect of the project.
14. At the level of the beneficiary communities, there has been a catalytic effect in cases where farmers had the opportunity to observe the activities in person and then replicate them, as has been the case with the preparation of organic supplies. With regard to the project's potential impact in upcoming years, the evaluation believes that it is likely to be moderate if the Regulation is passed and the creation of an agrobiodiversity fund with the aforementioned percentages is approved. This opinion is justified because there are currently barriers that must be addressed to ensure the proper performance of the research and development of agrobiodiversity. The main barrier is posed by the lack of agronomists trained to promote farmers' rights, agrobiodiversity, agroecology, the monitoring of production, harvest, post-harvest, sales, etc.

Conclusions and recommendations

15. The **main conclusion** of the evaluation at a strategic level is that the production of agriculturally diverse plots under agroecological, participatory and inclusive concepts, meets the "Sumak Kawsay" criteria - an indigenous concept which translates as "good living".
16. In the communities visited, the project managed to show that agrobiodiversity can meet multiple family farming needs. In particular, it has been found that giving greater recognition to local crops encourages male and female peasant farmers to reduce their dependence on seeds from hybrid crops that have to be bought in technological packages because the seed cannot be reproduced. Consequently, the promotion of agrobiodiversity by means of the project has had a positive effect on family farmers' food sovereignty and food security. Other benefits include, among others, an improvement in diet and health (mental and physical) due to eating more varieties, maintaining a healthier environment as a result of using organic supplies, recuperating ancestral customs and identity as part of the national and

medicinal heritage and developing new opportunities for generating income by selling products that are high in nutritional and financial value in niche markets, such as agroecological fairs and typical restaurants that want to promote Ecuadorian cuisine. Consequently, it can also be concluded that agrobiodiversity contributes towards several Sustainable Development Goals (SDG) under this holistic concept such as: reducing rural poverty (SDG 1), reducing hunger/malnutrition (SDG 2), ensuring healthy lives and well-being (SDG 3), achieving gender equality (SDG 5), improving water quality by using organic supplies (SDG 6), developing the rural economy and reducing migration (SDG 8), promoting responsible consumption (SDG 12), adapting to climate change to protect food security (SDG 13) and conserving plant genetic resources *in situ* (SDG 15).

17. However, in terms of the design and operation of the project, the evaluation concludes that the project's objectives are too ambitious for just three years of implementation taking into account that seeds cannot be produced, widely distributed and refreshed (particularly tubers) in just three years. In addition, extensive institutional changes were made from the design to the start of operations that contributed to losing almost one year of work. The implications of this (particularly the reduction of the operational phase to around two years) were not adequately addressed by the Steering Committee and FAO-EC which indicates that the communication mechanisms were not effective.
18. The recommendations of strategic and operational interest have been prepared for consideration in the programming of future projects:

Strategic recommendations

For FAO (HQ and FAO Representation in Ecuador)

Recommendation 1. Devising the conservation and sustainable use of plant genetic resources under agroecological concepts is recommended, not only to ensure food security within family farming but also to promote sustainable rural development to support the fulfilment of the Sustainable Development Goals.

Recommendation 2. Developing a communication strategy that raises awareness of the contribution of agrobiodiversity in a more holistic manner and that makes it possible to insist that relevant policies, strategies and plans be updated, is recommended.

Recommendation 3. Resuming the legal process for the approval of the regulation to implement the law on agrobiodiversity and seeds, is recommended, alongside the establishment of the National Agricultural Authority (AAN), which would facilitate political dialogue on the reforms to apply at an institutional and political level, with regard to the promotion and development of agrobiodiversity, particularly as regards family farming.

For the FAO Representation in Ecuador

Recommendation 4. Continuing to support the MAG in training experts on the conservation and sustainable use of agrobiodiversity, in order to bolster interest and ensure the appropriate implementation of holistic programmes, is recommended.

Operational Recommendations

For FAO (HQ and FAO Representation in Ecuador)

Recommendation 5. It is recommended that projects of this nature should be designed to have an inception phase of around three to six months, in line with the agricultural

season, to: a) accommodate possible changes in political, institutional, social, or environmental etc. order; b) complete/update the socio-economic and environmental diagnosis in order to establish the baselines and adapt the targets if justified, together with the budget; and c) clarify the stakeholders' responsibilities. Similarly, including a closure phase (of at least three and no more than six months) is recommended, in order to clarify the continuity of the main activities after the closure of the project.

For the GEF and FAO (HQ and FAO Representation in Ecuador)

Recommendation 6. It is recommended that future projects include "Field Files" designed to gather information about the production and productivity of the different crops handled, production costs, gross and net income from the sale of products at the markets and fairs, etc., in order to enter them in the financial systems.

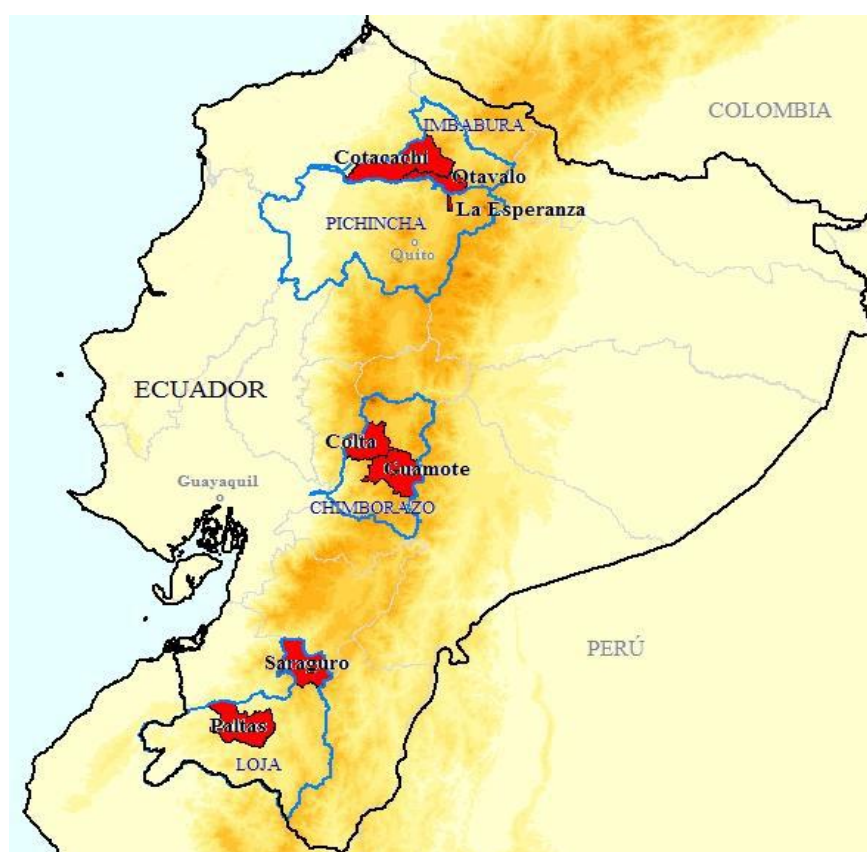
Suggestion:

To facilitate this process, new projects funded by the GEF could assign funds in order that the coordinators of their projects have an expert in charge of monitoring the results, and operations.

1. Introduction

1. Ecuador has vast biological diversity due to its wide variety of altitudinal and ecological environments. Despite its relatively small territory size, it has been recognised as one of the 17 most mega-diverse countries in the world due to the high number of endemic species it is home to. The Ministry of the Environment estimates that the flora of Ecuador includes 20,000 to 25,000 species of vascular plants, with endemism percentages that fluctuate between 20 and 25 percent. This biological diversity corresponds to abundant agrobiodiversity, which is essential for food security and the economic development of rural and urban communities. The importance of these resources also lies in their potential to provide genes of varieties that are more productive or better suited to the changing environmental conditions due to climate change, soil degradation, lack of water and the development of pests and diseases.
2. In addition to the wide variety of ecosystems, species and genetic resources, the country is characterised by cultural and ethnic wealth that is demonstrated by the diversity of traditional practices and modes of managing the land, selecting crops and using native cultivars and wild resources. The areas selected for implementing the project - the cantons of Cotacachi and Otavalo in the province of Imbabura, the parishes of La Esperanza and Tabacundo in the province of Pichincha, the cantons Colta and Guamote in the province of Chimborazo and the cantons Saraguro and Paltas in the province of Loja (see figure 1 below) - are considered microcentres of agrobiodiversity due to the wide range of species and varieties that are grown in the peasant farmers' plots. This abundance is due, among other causes, to the traditional agricultural practices of the indigenous communities, and to production geared towards on-farm consumption linked to the wealth of wisdom and to traditional cuisine.

Figure 1: Map of the provinces and cantons (in red)



1.1 Purpose of the evaluation

3. This evaluation was established in the project document GCP/ECU/086/GFF within the framework of the GEF's requirements. It has the dual purpose of accountability and learning. Firstly, under the framework of the GEF's requirements, the evaluation values the performance, results and potential of the impact achieved by the Project, its relevance for the beneficiaries, and the alignment of such with national needs and priorities.
4. Secondly, it documents important lessons for potential expansion, replication or monitoring projects in the country that may use similar design elements or focus points. In the interests of substantiating the lessons learned, the FAO Office of Evaluation (FAO-OED), the FAO Representation in Ecuador (FAO-EC) and the GEF team at FAO requested that the evaluation be conducted together with another two evaluations of the following projects that form part of the GEF's portfolio in Ecuador and that are administered by FAO:
 - Final evaluation of the project: GCP/ECU/080/GFF - "Management of Chimborazo's Natural Resources" (hereinafter the PROMAREN project); and
 - Mid-Term Evaluation of the project: GCP/ECU/082/GFF - Conservation and sustainable use of biodiversity, forests, soil and water to achieve Good Living/Sumac Kawsay in the Napo Province (hereinafter the Napo project).

5. In addition, this approach aims to ensure that the recommendations of the mid-term evaluation of the Napo project take the lessons learned and the final evaluations of the other two projects into consideration.

1.2 Scope and objectives of the evaluation

6. The evaluation covers the period from 01 August 2014 to 31 October 2017² and takes into consideration that the mid-term evaluation was not conducted as intended in the Prodoc (section 4.6) due to delays in executing the project in the first year of operations. In accordance with the objective of the evaluation, as established in the project document³, the evaluation aims:
 - To assess the relevance of the intervention in relation to the needs and expectations of the beneficiaries (participating provinces), the Country Development Objectives and FAO's Strategic Objective (SO) 2, and the GEF's objectives BD-2 and BD-4;
 - To examine the effectiveness of the project in terms of achieving objectives, outcomes, potential impacts and expected outputs (see evaluation questions and sub-questions) as well as its sustainability and efficiency;
 - To identify lessons and key factors in the design, implementation and sustainability of the outcomes so that they may be considered in future projects or interventions of the GEF or other donors, partners involved, national and provincial counterparts.
7. For these reasons the evaluation includes an analysis of the project's contribution to the fulfilment of FAO's Strategic Objectives , to FAO's Country Programming Framework (CPF) and to the GEF's Objectives. In particular, the project's contribution to the following has been analysed:
 - Fulfilment of Strategic Objective 2: Ensure that agriculture, forestry production and fisheries are more productive and sustainable. And in particular contribution to achievement 201: Natural resources managers and producers adopt practices that increase and improve the agricultural sector's production in a sustainable manner; 202: Stakeholders from the Member States reinforce the governance (policies, laws, management frameworks and institutions that are required to support natural resources producers and managers) in the transition to sustainable production systems in the agricultural sector; and 204: Stakeholders make decisions based on proven facts about the planning and organisation of the agricultural sectors and the natural resources to support the transition to sustainable agricultural production systems by means of supervision, statistics, evaluation and analysis.

² An official agreement to extend the project until 31 March 2018 was signed in November 2017 to enable the Heifer Foundation to conclude activities pending in the LoA.

³ The Prodoc mentions that the aim of the final evaluation (FE) will be: "to identify the impact the project has had, the sustainability of the outcomes and the degree of achievement of the outcomes in the long term. The FE should also indicate future actions needed to sustain project outcomes, expand on the impact it has had in subsequent phases, mainstream and up-scale its products and practices, and disseminate the information obtained" (p.101).

- Fulfilment of Strategic Objective 3: Reduce rural poverty, and in particular contribution to achievement 302: The rural population has greater opportunities to access decent agricultural as well as non-agricultural employment.
 - CPF: Priority Area 2 Contribute to the strengthening of public policies to guarantee food sovereignty, and in particular contribution to the Outcome: FAO contributes to improve the nutritional conditions of the population";
 - Fulfilment of the GEF's objectives related to the GEF's biodiversity strategy, in particular: BD-2: Mainstream agrobiodiversity conservation and sustainable use in production landscapes and seascapes and sectors; and BD-4: Capacity building to access genetic resources and benefit sharing.
8. The main users of this evaluation report are FAO, the GEF, the Government of Ecuador (particularly the MAG, the INIAP and the DAGs involved in the Project), the beneficiaries of the interested communities, the indigenous organisations, the Heifer Foundation and all of the project partners (public and civil society), which have been involved in the completion of the project.

1.3 Methodology

9. In order to ensure conformity in terms of identifying findings and lessons learned in each of the three aforementioned evaluations, the three experts involved in these evaluations adopted a common working method. In accordance with the norms and standards of the United Nations Evaluation Group and the criteria and requirements of the GEF for final evaluations, the working method adopted is based on:
- a) Reviewing key documents including strategic documents of FAO and the national government, operating plans, half-yearly progress reports, technical reports, etc.;
 - b) Implementing the theory of change to guide the analysis and questions to be developed with regard to the project's main activities, outcomes and its potential impact (see also point 2.3);
 - c) The mapping of the stakeholders in consultation with FAO-OED and FAO-EC in order to select a representative sample of stakeholders to interview ensuring coverage that includes: FAO, the GEF, the Ministry of Agriculture (MAG), the Autonomous National Institute of Agricultural Research (INIAP), the Ministry of the Environment (MAE), the Heifer Foundation, the peasants' organisations involved in the four provinces of Pichincha, Imbabura, Chimborazo and Loja and groups of peasant farmers⁴. Annex 1 includes a copy of the stakeholders interviewed;
 - d) Review of the ToR particularly the questions and sub-questions to be selected for each evaluation criterion, which are summarised in table 1 below (the terms of reference are in annex 1);
 - e) Preparation of the evaluation matrix in coordination with the FAO-OED evaluation manager and the three evaluation experts in order to determine the assessment criteria and indicators for each question and subquestion set forth in the ToR. The evaluation matrix can be found in appendix 4;

⁴ An indicative target was established with FAO-EC stating that at least 40% of the peasants interviewed must be female peasant farmers, which includes young and indigenous women aged 15 to 26.

- f) Meeting of the three evaluation experts and the FAO/OED evaluation manager in Ecuador in order to jointly arrange the semi-structured interviews to be conducted in Quito before beginning the field visits;
- g) Together with the PROMAREN and Napo project evaluators, conduct semi-structured interviews with the representative and other members of FAO-EC, officials of the MAG and MAE involved in the project and then separate interviews that - in the case of the evaluation of the agrobiodiversity project - included visits to the Department of National Plant Genetic Resources (DENAREF) of INIAP and to the Heifer Foundation in Quito.
- h) Completion of the field visits separately putting emphasis on holding meetings with focus groups of beneficiaries that include men and women as well as meetings specifically for women. During the field visits a consultative, participatory and transparent approach was maintained. The phase in the field began in the provinces of Imbabura and Pichincha accompanied by the FAO-OED coordinator. Subsequently, the evaluation visited the provinces of Loja and Chimborazo. In each province it was possible to complete a series of semi-structured interviews with a wide range of stakeholders (separately or in focus groups) from the seven cantons involved. The work agenda for the evaluation of the agrobiodiversity project can be found in appendix 3;
- i) Preparation and presentation of the preliminary findings of the three projects evaluated to the project coordinators and the interested parties and consolidation of such into a single presentation to FAO-EC with the ultimate aim of guiding the next steps (above all with regard to the closure of the agrobiodiversity project) and future programming with the GEF and other donors;
- j) Drafting of the evaluation reports for each project in accordance with the terms of reference, which includes insight into the analytical frameworks of the GEF, in particular, the rating system (appendix 5), the funding from the GEF per component and outcome (see appendix 6) and the section to assess sustainability (see appendix 7).
- k) Review and finalisation of the report on the basis of the comments received by FAO-EC, the GEF, government and other stakeholders.

1.4 Limitations

10. The evaluation did not experience limitations due to external events or climate problems that led to difficulties for completing the work plan included in appendix 3. However, in logistical terms, the evaluation experienced the following limitations that reduced opportunities to perform a more detailed analysis:

- a) In the majority of cases, interviews were conducted in Quito with the two other evaluators responsible for the PROMAREN and Napo projects. Consequently, it was necessary to focus on only asking key questions in each interview;
- b) Very short field visits were made to cover the four provinces and the seven cantons involved in the seven days of work assigned by FAO. Consequently, the evaluation could not visit the further away communities in each canton, particularly in Loja and Chimborazo. To remedy this situation, the evaluation team interviewed a wide range of peasant organisations and farmer focus groups, particularly in the provinces of Chimborazo and Loja;

- c) The mission took place during closure when there were not many beneficiaries available;
- d) The project did not maintain the monitoring of data regarding the agrobiodiversity activities in order to analyse results with regard to its performance (production, productivity, dietary changes, increase in income, etc.).

1.5 Structure of the report

11. The structure of this report follows the format established and agreed upon in appendix 7 of the ToR. Section 3 is geared towards presenting the findings of the evaluation with regard to the evaluation criteria and questions established in table 1.

Table 1: Evaluation questions and criteria

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| <ol style="list-style-type: none"> 1. Relevance <i>Were the project strategy and actions appropriate for meeting the needs of all the stakeholders involved in matters of agrobiodiversity, including support for implementing policies and programmes by the Government of Ecuador, the GEF (BD2 and BD4) and FAO (particularly SO2)?</i> 2. Effectiveness <i>How effective has the project been in achieving the objectives and expected outcomes?</i> 3. Efficiency <i>Have the intervention methods, institutional structure and financial, technical and operational resources and procedures available helped or hindered the achievement of the project results and objectives?</i> 4. Normative Values (4a) <i>To what extent has the project, in its work with local communities, ensured that all the stakeholders participated in the decision-making process (including implementation of activities) and the empowerment of farmers in progressing with their rights?</i> (4b) <i>To what extent has the project addressed gender equality issues in its design and contributed to the empowerment of women, young people, indigenous groups and other vulnerable groups throughout its completion?</i> 5. Sustainability <i>How sustainable are the outcomes achieved by the project at an environmental, social, financial and institutional level?</i> 6. Lessons learned <i>¿Which project lessons in terms of design, implementation and sustainability, can be useful for future and similar FAO interventions in Ecuador, and particularly interventions of the GEF and other donors in general?</i> |
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2. Background and context of the project

2.1 Project context

12. Despite the genetic wealth and socioeconomic value of Ecuadorian agrobiodiversity mentioned in the introduction of this report, it faces substantial threats including the following:
 - Ignorance of the values of agrobiodiversity;
 - Deficiencies in the plant genetic resources conservation and management strategies characterised by the weak link and interaction between *in situ* management and use and *ex situ* conservation and research, as well as the deficiencies in the development and dissemination of new important varieties for the different crop systems; and,
 - Insufficient incorporation of agrobiodiversity values in public policies at different levels.
13. In the global context, the genetic erosion of agrobiodiversity has significant implications for food and nutritional security, particularly considering that approximately 75 percent of food comes from around 12 plant species and five animal species (FAO, 2006).
14. The loss of local knowledge regarding agrobiodiversity in Ecuador is also significant because it makes it increasingly difficult to identify and conserve the genes of local varieties. The causes for the loss of agrobiodiversity in Ecuador include, among others:
 - The lack of a legal, political and institutional framework to recognise, assess and promote the conservation and sustainable use of agrobiodiversity as part of the national strategy to reduce rural poverty. Consequently, there is low investment in research and studies on the benefits of native crops in terms of their nutritional value, low costs associated with their production, low negative impact on the environment, etc.;
 - An agricultural policy that promotes replacing native crops and traditional practices with the introduction of technological packages to grow improved and hybrid varieties in monoculture which in many cases have been subsidised by the government;
 - An environmental policy that did not explicitly include the conservation of the country's plant genetic resources;
 - The migration of the rural population, particularly of men, due to the lack of income from agriculture;
 - The weak link and interaction between the farmer's *in situ* management and use and the *ex situ* research and conservation managed by the INIAP;
 - The lack of development and dissemination of new important varieties to improve the different crop systems; and
 - The failure to include agrobiodiversity as part of the national strategy to eradicate hunger and rural poverty, and support the agricultural sector in adapting to the effects of variations in climate and of climate change.

15. As a response to this situation the INIAP, with the support of the Heifer Foundation-Ecuador, prepared the project GCP/ECU/086/GFF between 2012 and the start of 2014, focusing on the intervention areas detailed in the figure (see section 1). The formulation of the project had the support of FAO, the MAG and the following local community organisations:

- Union of Cotacachi Indigenous Small-farmers' Organizations (UNORCAC) in the province of Imbabura
- Centre for Pluricultural Studies (CEPCU) in the canton of Otavalo, province of Imbabura;
- The Water Department of the Parish of La Esperanza, the province of Pichincha;
- The Indigenous Development Centre (CEDEIM) in the canton of Colta, province of Chimborazo;
- The Corporation of Rural Communities (CORPOPURUHA) in the canton of Guamote, province of Chimborazo;
- The Cantonal Union of Paltas Small-farmers' Organizations (UCOCP) in the canton of Palta, province of Loja;
- The Agroecological Network of Loja; and
- Decentralised Autonomous Governments (DAGs) at a provincial level (Chimborazo, Imbabura and Loja) and municipal level (Cotacachi, Guamote and Saraguro).

2.2 Project background

16. The general **environmental objective** of the project's intervention framework (see appendix 8) is: *"to mainstream the use and conservation of agrobiodiversity (ex situ and in situ) in policies, farming systems, and education and awareness programmes in Andean Highlands provinces of Ecuador such as Loja, Chimborazo, Pichincha and Imbabura, in order to contribute towards the sustainable management and resilience of agro-ecosystems in the Andean and other similar mountain dry-land regions."* The **development objective** of the project is, *"To mainstream the use and conservation (ex situ and in situ) of agrobiodiversity in the Ecuadorian Andean Highlands provinces of Loja, Chimborazo, Pichincha and Imbabura with the aim of increasing and improving the provision of goods and services from agriculture, contributing to food security, and reducing rural poverty."*

17. The **specific objectives** established as components of the project and its expected outcomes are:

- **Component 1:** *to mainstream the conservation and sustainable use of agrobiodiversity in public policies and promote their implementation;*
 - Outcome 1.1: *Public policies and national plans incorporate measures for the conservation and sustainable use of agrobiodiversity;*
 - Outcome 1.2: *Advanced implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) at a national level, which facilitates access to and the distribution of the benefits of plant genetic resources;*
 - Outcome 1.3: *Land managed under Land Use and Development Plans (LUDPs) and DAG ordinances that integrate the valuation, sustainable use and conservation of agrobiodiversity.*

- **Component 2:** *to scale up existing good practices of in situ and ex situ conservation and sustainable use of agrobiodiversity;*
 - Outcome 2.1: *Coverage of the diverse Andean species and varieties has been expanded in the National Bank of Germplasm (BNG) factoring in the abiotic and biotic pressure factors important for overcoming future climate challenges, and the exchange of genetic materials between the bank and farmers has been strengthened.*
 - Outcome 2.2: *Peasants' and indigenous organisations have incorporated the management and sustainable use of agrobiodiversity into the agricultural systems, which increases farms' agrobiodiversity and farmers' standard of living.*
 - Outcome 2.3: *Productive land under participatory guarantee systems (PGS) due to being cultivated in situ under agrobiodiversity best practices, supported and preserved by local networks of small and medium-sized farmers and indigenous producers.*
 - Outcome 2.4: *Increased family income due to the rise of value-added products derived from agrobiodiversity and other economic activities linked to such.*
- **Component 3:** *to educate and raise awareness among decision-makers, teachers and consumers about the environmental, nutritional, cultural and economic value of agrobiodiversity.*
 - Outcome 3.1: *Decision-makers of governmental bodies are informed and aware of the environmental, nutritional, cultural and economic value of agrobiodiversity.*
 - Outcome 3.2: *Local schools and technical colleges have strengthened capacity to educate and create awareness of the value and use of local agrobiodiversity for local diets.*
 - Outcome 3.3: *Urban and rural populations in the intervention microcentres recognise the value of local agrobiodiversity and consume products derived from such.*

18. The project took place from 01 August 2014 for a period of three years and was then extended until 31 March 2018 with the same total budget of USD 7 846 235, which is detailed in table 2.

Table 2: Budget for the project GCP/ECU/086/GFF

Financial source	Amount (USD)*
Global Environment Facility (GEF)	1 250 000
FAO	667 000
Autonomous National Institute of Agricultural Research (INIAP)	652 260
Ministry of Agriculture	95 207
Heifer Foundation	600 000
Decentralised Autonomous Governments (DAGs)	2 755 300
Local organisations	194,568
Universities	1 631 900
TOTAL	7 846 235

* Amount in kind and in cash except in the case of the GEF, which is a cash-only subsidy ⁵

⁵ It includes logistical costs, the provision of materials and premises, etc.

2.3 Theory of Change

19. The theory of change (ToC) can be found in appendix 9. It was prepared during the inception phase of the evaluation mission in consultation with FAO-OED in order to position the results to be achieved by the project in terms of outcomes, the effects of the outcomes and the expected medium and long-term impacts (after the project) in order to fulfil the general objective of the project.
20. Taking into consideration the Constitution of the Republic of Ecuador, which is based on "Sumac Kawsay" (Good Living), the evaluation prepared the Theory of Change in accordance with the various benefits that "the sustainable management and the resilience of agroecosystems in the Andes..." offers small-scale farmers in terms of consolidating food and nutritional sovereignty and security, increasing their resistance to the effects of variations in climate and of climate change, as well as the improvement of livelihoods. The sum of these benefits has been interpreted based on the improvement of human health (physical and mental) and of the environment which are essential for ensuring that small-scale farmers can continue living well without getting themselves into debt using agricultural practices they do not have the adequate services and resources to sustain.

3. Findings of the evaluation

21. The findings are presented following the structure of the evaluation matrix, meeting the reporting needs summarised therein. The questions and sub-questions related to each of the six evaluation criteria are answered. In some cases, the sub-questions have been grouped together and have an aggregate response.

3.1 Relevance

Evaluation question 1: Were the project strategy and actions appropriate for meeting the needs of all the stakeholders involved in matters of agrobiodiversity, including support for implementing policies and programmes by the Government of Ecuador, the GEF and FAO?

Finding 1. The evaluation confirms the relevance of the project from the time it was conceived in 2012 to date. The strategy and actions of the project were well focused on meeting the needs and interests of the majority of the stakeholders involved. At a national level the project constituted significant support to mainstream the conservation of agrobiodiversity and its link to food sovereignty in the National Strategy for Biodiversity and in terms of the formulation of the Organic Law on Agrobiodiversity, Seeds and the Promotion of Sustainable Agriculture. Equally, the project design fulfils priorities BD2 and BD4 of the GEF and FAO's Strategic Objective 2. At the level of the DAGs, the integration of agrobiodiversity in the LUDPs has been very relevant, particularly for the provincial councils of Chimborazo and Pichincha and at a cantonal level in Cotacachi, Guamote, Paltas and Saraguro. With regard to the farmers and peasants' organisations and associations, it was found that agrobiodiversity fulfils several needs related to their nutritional and food security, the use of organic supplies and new opportunities to generate income at the local fairs.

Finding 2. As regards the project design, the evaluation found that it was very ambitious to achieve the projects' specific objectives (components) in three years of execution, and placed little emphasis on linking family health and nutrition to the improvement of food security. In addition, the intervention logic did not facilitate the integration of risk management in the planning, and it lacked some important indicators linked to the expected results such as, for example, the monitoring of the cost of production and the productivity of the native crops that should have been considered to monitor outcome 2.4 (increase in family income).

3.1.1 Political, institutional and strategic relevance

Attention to the needs of the national government

22. The political relevance of the project was high due to the Organic Law on Agrobiodiversity, Seeds and the Promotion of Sustainable Agriculture being passed and officially registered on 08 June 2017 (hereinafter the Law on agrobiodiversity and seeds). The main purpose of this Law (Article 1) is: *"to protect, revitalise, multiply and invigorate agrobiodiversity in terms of plant genetic resources for food and agriculture; to ensure the production, free and permanent access to a variety of quality seeds, by means of promotion and scientific research and the regulation of sustainable agricultural models; respecting the different identities, knowledge and traditions in*

order to guarantee self-sufficiency based on healthy, diverse, nutritional and culturally appropriate food to achieve food sovereignty and contribute towards Good Living or Sumak Kawsay".

23. Article 16 of the Law sets forth the creation of a research fund for agrobiodiversity, seeds and sustainable agriculture, financed by funds assigned from the government's general budget and administered by the National Agricultural Authority through the INIAP. One of the main roles of the National Agricultural Authority (alongside the provincial DAGs, public research institutions and higher education centres), is to establish and execute policies, strategies and plans (PSP) to:

- Strengthen, protect and regulate the conservation and sustainable use of plant genetic resources in order to reduce vulnerability and genetic erosion;
- Execute agrobiodiversity research programmes for the improvement, classification, conservation and generation of crops suited to the requirements of producers and of the market;
- Offer technical assistance and training to farmers to recuperate seed production systems and their agrobiodiversity in the event of natural disasters or due to the effects of climate change;
- Conserve and implement germplasm banks, in particular the National Bank of Germplasm (BNG), which includes the recognition that *ex situ* conservation must be more closely linked to *in situ* conservation.⁶
- Support the fulfilment of the strategic objectives of the 2030 National Biodiversity Strategy (NBS) and its Action Plan for 2016-2021 (under the mandate of the MAE).⁷

24. The project is in line with several laws, policies, strategies and plans that facilitate the execution of the Law on agrobiodiversity and seeds, in particular:

- Article 281 of the Constitution of the Republic of Ecuador (2008) states: *"Food sovereignty constitutes a strategic objective and a government obligation to guarantee that people, communities and nationalities achieve self-sufficiency based on healthy and culturally appropriate food on a permanent basis. To this end, it will be the government's responsibility... 6. To promote the preservation and recuperation of agrobiodiversity and of the ancestral knowledge linked to it; as well as the use, conservation and free exchange of seeds."*
- the Organic Law on the Food Sovereignty System (27 December 2010) that aims to: *"establish the mechanisms by which the government fulfils its obligation and strategic objective to guarantee people and communities self-sufficiency based on healthy, nutritional and culturally appropriate food on a permanent basis."*

⁶ The Law establishes that the BNG and other germplasm banks must be made up of traditional seeds, field germplasm, in vitro and cryo-preservation crop germplasm as well as others stipulated by the National Agricultural Authority.

⁷ The four strategic objectives are: to mainstream biodiversity, the associated ecosystem goods and services in the management of public policies; reduce the pressure and inappropriate use of biodiversity to levels that ensure its conservation; fairly and equally distribute the benefits of biodiversity and of the associated ecosystem services, contemplating interculturality and gender specificities; and strengthening the management of national knowledge and capacities that promote innovation in the sustainable use of biodiversity and ecosystem services.

- Article 1 of the Organic Law on Water Resources, Uses and Water Development (06 August 2014) states: *"Water is a national strategic asset of public use, inalienable domain, not subject to a time limit, that cannot be seized and is essential to life, a vital element for nature and is fundamental in guaranteeing food sovereignty."*
- Article 2 of the Organic Law on Rural Land and Ancestral Territories (14 March 2016) aims: *"to regulate the use and access to ownership of rural land, the right to ownership of such which must fulfil a social and environmental function. It regulates the possession, ownership, administration and redistribution of rural land as a production factor to guarantee food sovereignty, improve productivity, provide a sustainable and balanced environment; and grant legal security to the owners of rights."*
- The 2014-2020 National Biodiversity Strategy (NBS). In particular, the project will contribute towards updating the NBS so that it includes information about agrobiodiversity to guarantee the food sovereignty of small-scale farmers.
- The 2013-2017 National Plan for Good Living (PNBV), which places emphasis on developing germplasm banks to strengthen food sovereignty with local crops that can reduce dependence on imported products and promote education and economic activities to improve the rural economy.

25. In addition, the relevance of the project is directly aligned with binding international agreements, particularly:

- The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), specifically Article 7, which requires that each Contracting party integrates the conservation and sustainable use of plant genetic resources for food and agriculture (PGRFA) in its rural and agricultural development policies. In addition the extension of indigenous communities' and farmers' rights by means of an improvement to access to the PGRFA and the distribution of benefits deriving from their use is in line with Article 9 of the ITPGRFA⁸;
- The 2011-2020 Strategic Plan for Biological Diversity and the fulfilment of the Aichi Biological Diversity Targets. In particular the project document ("Prodoc") refers to the alignment with Targets 7, 13 and 18,⁹ which the government intends to coordinate at a national level by updating the aforementioned NBS.

⁸ Article 9.2 states that, "...each Contracting Party must, as appropriate and subject to its national legislation, adopt the necessary measures to protect and promote farmers' rights, in particular: a) the protection of traditional knowledge of interest for the PGRFA; b) the right to participate equally in the distribution of benefits derived from the use of the PGRFA; and c) the right to participate in the adoption of decisions, at national level, regarding matters relating to the conservation and sustainable use of the PGRFA.

⁹ Target 7: "By 2020, the areas geared towards agriculture, aquaculture and forestry will be managed sustainably, guaranteeing the conservation of biological diversity". Target 13: By 2020 the genetic diversity of the plant species grown and of the farm and domesticated animals and related wild species, including other species of socioeconomic and cultural value will have been maintained, and strategies to reduce genetic erosion to a minimum and to safeguard genetic diversity will have been developed and implemented; and Target 18: by 2020, the knowledge, innovations and traditional practices of indigenous and local communities relevant to the conservation and sustainable use of biological diversity, as well as their customary use of biological resources, will be observed.

Attention to the needs of the local authorities

26. The evaluation found that the relevance of the project at the level of provincial, cantonal and parish DAGs varies and, as such, there is no common approach to the mainstreaming of agrobiodiversity in their policies and Land Use and Development Plans (LUDPs). For example, the LUDPs of the DAGs of the Provinces of Chimborazo and Pichincha include projects geared towards recuperating agrobiodiversity and promoting sustainable agriculture,¹⁰ but the LUDPs of the provinces of Imbabura and Loja do not explicitly incorporate the recuperation and development of agrobiodiversity. Important reasons for this situation include the lack of a political and institutional framework that obliges DAGs to explicitly incorporate agrobiodiversity in the diagnoses and budget of the LUDPs, the political will and the presence of programmes of the government that continue promoting technological packages for agriculture (known as "agricultural kits") as is the case of the "Shoulder-Shoulder Strategy" of the MAG and "the Large Agriculture and Livestock Cooperative" programme of the new President of the Republic.

Attention to the needs of the small-scale farmers and their organisations

27. The relevance of the project at the level of the small-scale farmers in the four intervention provinces is high. For example, the vast majority of people interviewed during the field visits in the four provinces visited confirmed that the conservation and sustainable use of agrobiodiversity is very relevant to family farmers for the following reasons:

- The diversification of crops and their association in the plots acknowledges and values ancestral practices, particularly in indigenous and further away communities where on-farm consumption is still important;
- The diversification of crops and their association offers new opportunities for improving health and spiritual life by means of greater food and nutritional security and the use of organic supplies compared to traditional agriculture;
- The recuperation and replication of native seeds helps to advance the food sovereignty of small-scale farmers and, as such, their rights to the ownership of such;
- Surplus opportunities to sell in the local fairs to generate financial income.

Attention to the priorities and strategic objectives of the GEF and FAO.

28. The evaluation confirms that the Prodoc was explicitly aligned with the priorities of the GEF and refers to FAO's strategic objectives (SO) and the fulfilment of the Organisation's Achievements (OA)¹¹. In particular the Prodoc refers to the importance

¹⁰ For example, the LUDP of Chimborazo in the Economic Component: 04 Sustainable Production, actions 14 and 15 are: an Agrobiodiversity and Food Sovereignty project, and another to promote Sustainable Agriculture.

¹¹ SO2 is: To increase and improve the provision of goods and services from agriculture, forestry production and fisheries in a sustainable manner."

of contributing to the fulfilment of priority BD-2 of the GEF¹². For example, the design of component 1 is in line with the priority of BD-2, in terms of mainstreaming the conservation and sustainable use of agrobiodiversity at a national and local level in public policies and the LUDPs. Equally, component 2 supports the achievement of BD-2 by means of the establishment of agricultural systems that conserve plant genetic resources *in situ* and by means of the promotion of seed fairs and the submission of accessions to the BNG. In addition, the Prodoc refers to the fulfilment of objective BD-4 in terms of extending small-scale farmers' and indigenous communities' rights.

29. The Prodoc also refers to FAO's strategic objectives (SO) and the fulfilment of the Organisation's Achievements (OA).¹³ For example, the Prodoc aligns with Strategic Objective 2 and the OA of FAO in the following manner:

- Component 1 contributes to the fulfilment of OA2 and OA3 - the improvement of national (legal, political and institutional framework) and international governance (ITPGRFA and Convention on Biological Diversity) to stimulate sustainable production systems in the agricultural sector.
- Component 2 contributes to OA1 - the adoption of practices that increase and improve the sustainable supply of goods and services in the agricultural sector's production systems; and
- Component 3 to OA2 and OA4 - stakeholders make decisions based on proven facts regarding the planning and management of the agricultural sector.

30. The project also aligns with the Country Programming Framework (CPF) of FAO-EC for 2013-2017. For example, component 1 aligns with Priority 2 that focuses on contributing to strengthening public policies to guarantee food sovereignty. In another example, component 2 aligns with Priority 4: to contribute to the consolidation of the environmental public policy through the conservation, valuation and sustainable management of biodiversity and natural resources as a strategic resource of the government, as well as ensure ecosystem services and the development of strategies for adaptation and mitigation of climate change and ensuring food sovereignty.

3.1.2 Project design – strengths and weaknesses

31. The project was mainly designed by the Department of National Plant Genetic Resources (DENAREF) of the INIAP with contributions from several stakeholders including FAO during the period from 2012 to 2014 (see point 2.2). After analysing the Prodoc and the findings of the interviews conducted with the stakeholders, the evaluation confirms that the most substantial strengths of the project's design are:

- Alignment with the country's official commitments to stop the genetic and cultural erosion of its high agrobiodiversity and apply the National Regulation to the Common System regarding Access to Genetic Resources, which aims to ensure conformity with the ITPGRFA and the provisions of the Convention on

¹² BD-2 focuses on reducing the threats to the biodiversity of global interest by means of the sustainable use of plant genetic resources, and the improvement of the access to these resources and the distribution of benefits derived from its use.

¹³ Strategic Objective 2 is: To increase and improve the provision of goods and services from agriculture, forestry production and fisheries in a sustainable manner."

Biological Diversity with regard to the terms of access to genetic resources and the distribution of the benefits derived from their use;

- The high appropriation of the project by the INIAP/DENAREF to facilitate its introduction to the small-scale farmers in the interests of mainstreaming and complementing the *ex situ* and *in situ* conservation of plant genetic resources, which is crucial for recuperating agrobiodiversity (a strategic objective of agricultural policy) and making progress with the regulation required to advance farmers' rights (an objective of the ITPGRFA)¹⁴;
- The involvement of the autonomous governments of the municipal and provincial councils and rural parish bodies facilitates the incorporation of the values of the conservation of agrobiodiversity not just in national policies but also in the LUDPs and in the ordinances and regulations of such;
- The selection of the intervention areas where there are traditional systems for managing agrobiodiversity that covers a wide range of plant genetic resources in different Andean geographical areas of the country from 1,200 m (Paltas, Loja) to 4,200 m (Guamote, Chimborazo). In addition, they involve peasants' organisations that represent farmers who are very vulnerable due to rural poverty, high migration rates especially of young people, the change in consumption towards crops produced under monoculture systems and the problems associated with variations in climate and climate change, among others;
- The link established between the promotion and management of agrobiodiversity with strategies to develop sales and the added value of the native crops produced, particularly that of the development of seeds fairs and agroecological fairs where a high number of beneficiaries can be involved, exchange experiences and sell fresh as well as processed products.
- The promotion of awareness-raising and education about the values of agrobiodiversity taking into account that the decision-makers as well as parents of families have little knowledge of agrobiodiversity and how it can strengthen national assets.

32. In addition, the evaluation identified some weaknesses in the project's design that have contributed to reducing its relevance. The following, in particular, have been identified:

- The scope of the project puts a lot of emphasis on the conservation and sustainable use of agrobiodiversity to strengthen food security, without explicitly including nutritional security, which is important in the Andean area of the country where there is a high incidence of malnutrition, particularly in the indigenous communities and among children under the age of five;¹⁵
- It is very ambitious to fulfil the project's specific objectives (components 1 to 3) within just three years. For example, a) in terms of the lessons learned, taking into consideration that in the Prodoc (1.1.4) there is no evidence that it was taken into consideration that the Ecuadorian government's bureaucracy needs more than three years to prepare, approve and execute new PSP; b) in the Framework of

¹⁴ The Prodoc mentions the lack of regulations to promote the exchange of native varieties of seeds and the sale of the products harvested from these seeds (p. 15).

¹⁵ For example, the 2012 National Survey on Health and Nutrition, published in 2014 by the National Statistics and Census Institute (INEC) (p. 297-298) identified the rural mountainous areas and indigenous communities as the sub region and ethnic group where the daily protein requirement is fulfilled the least.

Outcomes (Annex 1) the first assumption for component 1 states that "the new authorities of the DAGs to be selected in 2014 assume the work framework conventions for the inclusion of agrobiodiversity in the LUDPs." This assumption is hypothetical and according to the Prodoc's Risk Management Matrix (Annex 4), the risks and the mitigation measures to apply in the event of not receiving the necessary support from one or more DAGs (which was the case in the DAGs for the provinces of Imbabura and Loja) were not covered; c) component 2 aims to increase biodiversity in the farms of beneficiary peasant families, but the proper management of agrobiodiversity requires at least 4 or 5 seasons to consolidate, due to the need not just to improve the selection of seeds and their storage but also in many cases renew them after a certain time (particularly tubers every three years)¹⁶; and d) the assessment of agrobiodiversity, particularly in ecological, economic and nutritional terms, depends on specific data that need to be collected over more than three years before being able to convince decision-makers to invest public or private funds in agrobiodiversity;

- The target of 1,900 ha of land under participatory guarantee systems (PGS)¹⁷ was conceived as a mechanism to promote the sale of agroecological products.¹⁸ The desire to promote the certification of local varieties with organic supplies was not explicit in the Prodoc. Consequently, the interviews confirmed that the promotion of the PGS label was interpreted more as the promotion of the production of improved crops under agroecological concepts than the promotion of agrobiodiversity under the same concepts. Consequently there was some confusion in the application of the PGS. In addition, the evaluation does not consider that the target of 1,900 ha was the most appropriate when the emphasis of component 2 is to support small-scale producers in conserving agrobiodiversity in small plots in their smallholdings instead of vast extensions of land;
- The project places emphasis on the conservation and sustainable use of agrobiodiversity, but due to the fact that consumers are not familiar with most of the products it was observed that activities specifically designed to promote and educate potential consumers about agrobiodiversity, recipes, nutritional benefits, etc., were not included;
- The project was designed to be executed in the OPIM management mode. However, institutional reforms in 2014 led to a reduction in the responsibilities of the INIAP in areas such as the transfer of technology to farmers and the decision to execute the project through the provincial departments of the MAG. In addition, as the DENAREF could not execute the OPIM the decision was made to assign the management of the project under the DIM mode to the FAO-EC. However, the project's design was not modified to clarify the responsibilities of the stakeholders in the new mode of management adopted that should have included adjustments in Section 4 (Implementation and Management

¹⁶ See Leisa, 2007: <http://www.leisa-al.org/web/index.php/statistics/volumen-23-numero-2/1809-las-rutas-de-las-semillas-de-papa-el-atajo-o-camino-derecho>

¹⁷ PGS are agro-diverse plots managed using good practices.

¹⁸ FAO defines agroecology as a scientific discipline, a set of practices and a social movement. As a set of practices it seeks sustainable agricultural systems that optimise and stabilise production. Family farmers are the people who have the tools to practise agroecology and, as such, are the real guardians of the knowledge and wisdom required to pursue its continuity. See: <http://www.fao.org/family-farming/themes/agroecology/en/>

Adjustments), the framework of outcomes (Annex 1 of the Prodoc) and the terms of reference of the project's coordinator (Annex 6 of the Prodoc).

- The lack of a comprehensive review of the project's design indicates limited technical supervision by the Steering and Technical Committee and the FAO Task Force in charge of supervising the project.

Synergies with other peasants' associations and projects

33. The evaluation found no evidence of the Prodoc making specific reference to the development of synergies with other relevant projects in the interest of coordinating and complementing its activities. In practice, it was found that some synergies were developed, although in the majority of cases isolated support was provided rather than formal collaboration agreements. One of the most significant was the joint work with the project on Food and Nutritional Security in the province of Imbabura (FNS Imbabura). In this case, the evaluation was able to confirm the delivery of seeds to 40 families in one of the intervention areas of the FNS (communities of San Pedro and Cercado in the canton of Cotacachi) and financial support for infrastructure, materials and supplies for developing the Cotacachi la Pachamama Fair in the city of Cotacachi. It was also found that the project encouraged the Imbabura FNS to promote the use of local products in the preparation of local recipes in the communities of Cotacachi and Otavalo which were included in the publication "Recetario Alternativo de la Agrobiodiversidad Andina Ecuatoriana" [Alternative Recipe Book of Ecuadorian Andean Agrobiodiversity] (2017).
34. Other more isolated synergies included contributions from the German agency for development (GIZ) to coordinate the updating of the NBS and with the Ecuadorian fund *Populorum y Progresio*, which informed the evaluation team of its commitment to replicate the production of organic and liquid fertilisers established by the project with 96 families in the parish of Juan de Velasco (canton of Colta).¹⁹
35. However, the establishment of specific synergies with other projects funded by the GEF in Ecuador was not observed. For example, with the project Management of Chimborazo's Natural Resources (PROMAREN) funded by the GEF there was only one joint project concerning the distribution of seeds and supplies to promote agrobiodiversity (in the community of Atapos, canton of Guamote). This finding was confirmed by the final evaluation of the project PROMAREN and the local authorities interviewed in the province of Chimborazo. In another example, no commitments to create synergies with the Andean Seeds project which was executed by FAO in Ecuador, Peru and Bolivia from 2012 to 2016 were identified²⁰. After the interviews conducted in Quito, it was observed that neither the Focal Point of the GEF in the Ministry of the

¹⁹ The evaluation team was informed of a collaboration between the agrobiodiversity and seeds project and the LatinCrop project funded by the European Union (EU) regarding the completion of joint training on the post-harvesting of quinoa and amaranth in the province of Chimborazo, but it did not have time to verify this work in the field.

²⁰ ProCamBio was executed by the MAE to prepare and undertake strategies for the sustainable use and development of biodiversity. The project LatinCrop (2014-2016) was executed by the INIAP and its objectives were to strengthen public and private institutions related to the production of seeds, and improve the production, access and use of quality seeds, tubers and grains.

Environment nor the FAO-EC were encouraged to be more proactive in developing said synergies.

36. In addition, synergies established with the Climate Change, Biodiversity and Sustainable Development Programme (ProCamBio) funded by German cooperation in the province of Chimborazo from 2014 to 2016, which supported the Provincial Council to include the conservation of biodiversity in the LUDP were not identified²¹.
37. However, as regards the establishment of synergies with peasants' organisations, by means of partnership agreements, the evaluation found that the Prodoc places a lot of emphasis on the development of such synergies. A total of six local organisations were identified to collaborate on the implementation of the activities of components 2 and 3, although, in reality, the evaluation identified that up to 19 agreements were established with official organisations and informal associations.

Quality of the risk management and internal monitoring system

38. The evaluation found weaknesses in the design of the risk management and monitoring system in terms of supporting the planning and execution with stakeholders. It is evident that the Prodoc (Annex 2) refers to the importance of monitoring the different activities set forth in components 1 to 3 and the importance of establishing an internal monitoring and evaluation system (IMES) to monitor the GEF's and FAO's relevant directives and policies as well as facilitate learning and the replication of the expected results. However, although the Prodoc clearly specifies the entities responsible for monitoring the project, the decision to execute the project by means of the DIM management mode in 2014 did not result in the corresponding adjustment of these responsibilities. According to the Prodoc, the Management and Coordination Committees are the entities that should have made this adjustment due to being responsible for monitoring the execution of the project activities, the collaboration between participating organisations and institutions, and the progress in fulfilling the work plans and annual budget (WPAB).
39. In terms of applying a plan for monitoring results, the Prodoc indicates that the INIAP was in charge of monitoring the Framework of Outcomes set forth in Annex 1, which details the baselines and indicators of the output and outcome targets of each project component, each year²². However, the evaluation found that these indicators place emphasis on measuring operational achievements or, in the case of component 3, are difficult to measure. The lack of "SMART" indicators has reduced the opportunities for reinforcing the relevance of the project with the decision-makers in order to facilitate the accomplishment of its three components. In particular, it was found that there is a lack of indicators that could reinforce the justification of the

²¹ The objective is to promote the conservation of agrobiodiversity in the Andean region by identifying underused species to improve food security and promote local networks and networks with the European Union.

²² The outcomes indicators are: Component 1: the level of mainstreaming of conservation and management of agrobiodiversity in the legal and planning instruments; Component 2 (a): The level of adoption by peasants' families of good practices of conservation and *in situ* management of agrobiodiversity, the increase in their income and hectares covered; Component 2 (b): The increase in biodiversity present in the peasants' plots, the research centres and the markets; Component 3: The level of social awareness regarding the importance and the values of agrobiodiversity.

replication of agrobiodiversity, such as data related to the performance of traditional crops, regarding the recording of economic income, relevant information relating to the health and nutrition of beneficiaries or regarding gender equality.

40. The evaluation also found weaknesses in integrating the management of risks in the project's design sufficiently. Although the Prodoc includes an annex geared towards a Risk Management Matrix,²³ an analysis of the risks listed includes some erroneous risks. The following, in particular, have been identified:

- Risk 1: Lack of coordination among the numerous project stakeholders;
- Risk 3: Lack of motivation and commitment among local stakeholders to undertake activities concerning the *in situ* management of agrobiodiversity and other project activities;
- Risk 4: Little interest of the producers in participating in participatory guarantee systems or fulfilling the norms of agro-diverse plots.

41. In particular, the risks associated with the coordination, motivation and interest must have been covered and mitigation measures identified during the design of the project in the interests of reinforcing the project's relevance, particularly with regard to national and local authorities. Ideally, the matrix should have been focussed mainly on the management of external risks from the start, such as, the risks associated with variations in climate and climate change, institutional reforms (as was the case in 2014), the rotation of staff and budget cuts.

3.2 Effectiveness

Evaluation question 2: How effective has the project been in achieving the objectives and expected outcomes?

Finding 3. The evaluation found that the project had fulfilled its three specific objectives (components) although with different levels of success. The project was effective in fulfilling the vast majority of targets of components 1 and 2 of the project. At a national level, the evaluation found that the conservation and sustainable use of agrobiodiversity was mainstreamed in the NBS and its 2016-2021 Plan of Action, and has directly contributed to the formulation of the law on agrobiodiversity and seeds. The approval and official registration of this law in 2017 obligates the MAG to prepare a new policy geared towards the conservation and sustainable use of agrobiodiversity once its implementation regulation is approved (currently under discussion). At the level of the DAGs, it was found that the conservation and sustainable use of agrobiodiversity was mainstreamed in the LUDP of the provincial council of Chimborazo where it assigns funds to promote it, and in three cantonal LUDP, agroecological fairs are being promoted. In the remainder of provincial LUDPs, the promotion of agroecology was mainstreamed (although agrobiodiversity is not explicitly mentioned). At the level of the farmers, the project managed to offer training to a total of 4,509 farmers and promoters (709 more people than planned) under a total of 19 official collaboration agreements with peasant's associations and organisations. These agreements facilitated the collection and submission to the INIAP of a total of 494 new accessions of 17 crops. The evaluation is

²³ The matrix specifies the category of the risk (in accordance with FAO's ERM) its potential impact and probability of occurrence (high, medium and low), and the mitigation actions to apply, those responsible for its monitoring and the state of risk throughout the implementation of the project.

moderately unsatisfied with the fulfilment of component 3 because an effective communication strategy geared towards promoting the approval of the regulation to implement the new law on agrobiodiversity and seeds as a national priority in the fight against hunger and poverty in the rural Andean area, was not established.

3.2.1 Component 1 - To mainstream the conservation and sustainable use of agrobiodiversity in public policies and promote their implementation

42. The evaluation is satisfied that the project fulfilled its first specific objective by fulfilling the vast majority of outcomes expected under component 1. An analysis of the level of fulfilment of the targets established under outcomes 1.1, 1.2 and 1.3 produced the following findings to justify this statement.

Target 1.1.1 - *National action plan prepared for the implementation of the agrobiodiversity component of the National Biodiversity Strategy, which includes a mechanism for monitoring progress:*

43. The project facilitated the mainstreaming of the conservation and sustainable use of agrobiodiversity in the updating of the 2015-2030 NBS and its Plan of Action in accordance with the four environmental and constitutional principles that form the basis of the NBS²⁴. In particular, the evaluation identified the mainstreaming of the following substantial entries in the NBS and its plan of action, which includes among others: a) the 12 policies of the NBS include one geared towards management, use and conservation *ex situ* and *in situ* of agrobiodiversity by promoting sustainable agrobiodiverse production systems and its 2016-2021 Plan of Action includes the target of achieving the full mainstreaming of biodiversity and genetic resources in the configuration of the country's new production matrix; b) the NBS indicates that Ecuador is a centre of origin of cultivated plants that are of global interest (*ají* peppers and other peppers, cocoa, beans, maize, potatoes, tomatoes and pumpkins) and of regional/national interest (*oca*, *mellico*, *mashua*, white carrot, *jicama*, etc.) as well as a centre of diversity of these species in terms of local varieties and wild relatives; c) the NBS acknowledges that plant genetic resources guarantee food sovereignty and sustain the food security of a vast number of family farmers in the country and that plant genetic resources are important suppliers of genes to produce new varieties that are more productive and more resistant to biotic and abiotic pressures; d) the NBS indicates that agrobiodiversity offers opportunities for reducing negative environmental impacts compared to monoculture systems such as regarding natural resources and the emission of greenhouse gases; and f) the Plan of Action establishes that scientific research on agrobiodiversity must be extended to raise awareness among decision-makers of the current status of biodiversity and extend

²⁴ Article 395: 1) the Government will guarantee a sustainable development model, which is environmentally balanced and respectful of cultural diversity, which conserves biodiversity and the capacity to naturally regenerate ecosystems, and ensures the fulfilment of the needs of current and future generations; 2) The environmental management policies will be applied in a cross-cutting manner and will be of obligatory fulfilment by the government at all its levels and by all natural or legal persons in the national territory; 3) the government will guarantee the active and permanent participation of people, communities and nationalities affected, in the planning, execution and monitoring of any activities that generate an environmental impact; 4) in the event of doubt regarding the scope of the legal provisions concerning environmental matters, these shall be applied in the manner most favourable to the protection of nature.

bio-knowledge²⁵ and that its monitoring must include two indicators regarding agrobiodiversity²⁶.

Target 1.1.2 - *Consolidated coordination mechanism operating by means of alliances between the INIAP, MAGAP, MAE, SENPLADES and DAGs regarding policies for the promotion and conservation of agrobiodiversity.*

44. The coordination mechanism was established through the creation of the Coordination and Technical Committees. This mechanism facilitated the approval of the LUDPs at a provincial and cantonal level, particularly because since 2015 the LUDP have to be sent to SENPLADES for approval. In addition, the mechanism facilitated the preparation of official reports to fulfil international agreements and conventions in which Ecuador is a contracting party. For example, the mechanism made it possible for the INIAP to incorporate agrobiodiversity in the preparation of the National Biodiversity Report for the Convention on Biological Diversity in 2015²⁷.

Target 1.1.3 - *Public policy proposal approved at national level focussed on the conservation and sustainable use of agrobiodiversity:*

45. The passing and registration of the law on agrobiodiversity and seeds in 2017 is a significant achievement for the project because it governs the incorporation of the conservation and sustainable use of agrobiodiversity in national and provincial public policy and, consequently, the development of sector policies geared towards this (in particular with regard to policies of the MAE and MAG). However, the approval of the regulation for implementing this law is essential to be able to establish the National Agricultural Authority, clarify the institutional competencies and apply the corresponding sanctions and incentives.

Target 1.1.4 - *Method of assessment of diversity in biodiverse peasant agricultural systems in the province of Chimborazo*

46. The Heifer Foundation managed to prepare and validate this methodology in the cantons of Colta and Guamote by means of agreements with local peasants' organisations (117 families surveyed). The methodology resulted in the identification of quantitative and qualitative data on the state of agrobiodiversity in the cantons and the presentation of seven recommendations to strengthen food security by means of abrobiodiversity practices. Recommendations include the creation of a rescue, conservation and free native seeds and vegetables exchange system appropriate to the agroclimatic conditions, and the promotion of training schools and the exchange of knowledge to promote and train the application of native

²⁵ The NBS mentions the agrobiodiversity project's contributions to the development of bio-knowledge in sub-section 3.2.3.

²⁶ Outcome 9 of the Plan of Action has the following indicators: Ecuador ensures the sustainable management of the livestock, agroforestry and forestry production systems by means of the use of clean energy and technology, and guaranteeing the conservation of biodiversity. The two indicators are: 1) Phenotypic agrobiodiversity areas among varieties of a selected group of strategic native crops for food security; and eco-geographical diversity areas in farms where varieties of a selected group of strategic native crops for food security grow.

²⁷ The report includes a subcomponent "Genes", in which the aforementioned topics have been included in the NBS, in order to reiterate that Ecuador is a centre of origin of several crops and their wild relatives and point out that the diversity of plant genetic resources is crucial for producing varieties resistant to biotic and abiotic pressures.

technologies and methods based on agroecology. To promote the sale of the crops, the creation of local fairs and training on the nutritional value of these crops is recommended so that producers and consumers are more informed of the importance of a healthy and balanced diet in protecting human health.

Target 1.2.1 - *Analysis of the application of Farmers' Rights in Ecuador, identification of possibilities to extend the application of these rights, and programme proposal for the application of farmers' rights by the competent government entities*

47. The approval of the law on agrobiodiversity and seeds represents substantial progress in farmers' rights in accordance with the ITPGRFA and the Law on Rural Land and Ancestral Territories²⁸. In particular, it includes a specific chapter on farmers' rights. For example, Article 8 guarantees the individual and collective rights of municipalities, communities and nationalities in the area of agrobiodiversity²⁹. This law was passed in June 2017, which made it possible to complete a campaign about farmers' rights but there was not enough time to prepare a programme proposal to apply the farmers' rights as the Prodoc envisioned (target 1.2.2).

Target 1.3.1 – *three proposals of ordinances regarding the conservation and sustainable use of agrobiodiversity in the provinces of Chimborazo, Imbabura and Loja*

48. The project facilitated the formulation of three proposals of ordinances regarding the conservation and sustainable use of agrobiodiversity in the provinces of Chimborazo, Imbabura and Loja³⁰. The provincial council of Chimborazo approved the ordinance in 2017. The proposal was presented in the province of Imbabura but has not yet been adopted. In the case of Loja, the project did not manage to finalise the provincial council's proposal. The evaluation identified a lack of political will in both of these provinces due to several factors including, among others: a) the lack of a legal and institutional framework to obligate the assignment of funds for the assessment and promotion of agrobiodiversity and incentives to promote agricultural production under monoculture systems with chemical supplies and irrigation systems; b) the lack of qualified agronomists to offer extension services to promote agrobiodiversity³¹; c) the lack of establishment of permanent coordination mechanisms to stimulate the associations set forth in the Organic Law on Land Development Plans, and the Use and Management of Soil (2016) and pursuant to the Territorial Organization, Autonomy and Decentralization Organic Code (COOTAD).³²

²⁸ Section I of this law is geared towards "the rights linked to the ownership of rural land and territories".

²⁹ It is important to clarify that the law on agrobiodiversity and seeds is limited to the plant genetic resources for food and agriculture.

³⁰ The provincial Council of Pichincha already had an ordinance (approved in March 2013) to promote sustainable agriculture and food sovereignty by means of the production, transformation and sale of local crops under agroecological systems. Two other provinces have similar ordinances: Azuay (2012) and Tungurahua (2013).

³¹ The INIAP informed the evaluation that family farming represents around 70 percent of all farmers of Ecuador.

³² For example, it was found that there was a dislocation between the DAGs at a provincial level which are responsible for ensuring food sovereignty and the cantonal DAGs which are responsible for promoting the transformation and sale of agricultural crops.

Target 1.3.2 - *Three LUDPs in the provinces of Chimborazo, Imbabura and Loja have mainstreamed the conservation and sustainable use of agrobiodiversity*

49. The project contributed to the mainstreaming of the conservation and sustainable use of agrobiodiversity in the LUDP of the province of Chimborazo. It is important to include a budget item of USD 2.75 m. to promote agrobiodiversity in order to recuperate food sovereignty in the province.³³ However, the LUDPs of Imbabura and Loja do not have the same focus. In the case of Imbabura, the LUDP focuses on promoting and consolidating the development of production chains of the primary sector placing emphasis on food sovereignty and security and observing the principles of the popular and solidarity-based economy³⁴. In the case of Loja, it places emphasis on the promotion of agroecology to fulfil food security³⁵. In addition, the project facilitated the preparation of three cantonal ordinances to support the sale of agrobiodiversity at annual seeds fairs and at central markets. The municipalities of the cantons Saraguro and Guamote approved and registered these ordinances in February and July 2016. The ordinance for the implementation of agroecological fairs in the canton Pedro Moncayo (Pichincha) is pending approval.

3.2.2 Component 2 - To scale up existing good practices of *in situ* and *ex situ* conservation and sustainable use of agrobiodiversity

50. The evaluation team is satisfied with regard to the fulfilment of outcomes 2.1 and 2.2 and moderately satisfied with the fulfilment of outcomes 2.3 under component 2 of the project. This conclusion is justified based on the following findings:

Target 2.1.1 - *collect 210 accessions from 15 crops and identify their characteristics*

51. The project was very effective in expanding knowledge about genetic diversity in the Andean region by means of the collection of a total of 494 accessions from 17 crops (with passport details³⁶). According to the INIAP, the registration of these accessions has increased by 35 percent compared to previous accessions of grains and tubers in the BNG. This achievement is important because it facilitates new opportunities for identifying native crops apt to promote the adaptation to the effects of climate change in order to ensure food security and sovereignty in the long term.³⁷ A list of the crops and accessions together with the map of provinces where they were collected can be found in appendix 9. In terms of the classification of these accessions, the evaluation confirms that two people are currently completing research

³³ Interviews with the provincial council and farmers confirmed that in the last 20 years, the majority of producers in the province replaced the sowing of over 100 local varieties of potato with one single improved one from the INIAP (Super Chola). Indeed, a 2013 study confirmed that 67 percent of families grew only this variety in their plots due to outputs of 7.03 Tons/Ha in Chimborazo to 9.24 Tons/Ha in the province Tungurahua (R. Flores, S. Viteri and M. Sánchez).

³⁴ The LUDP focuses on promoting and consolidating the development of production chains of the primary sector placing emphasis on food sovereignty and security and observing the principles of the popular and solidarity-based economy (with the target of supporting around 900 small-scale farmers).

³⁵ The LUDP of Loja is geared towards ensuring food sovereignty through an agricultural reform based on technological innovation that results in agroecological production sufficient in amount to supply the population group.

³⁶ Includes: province, canton, parish, geo-referenced location and height.

³⁷ The collection of germplasm consisted in obtaining seed samples representative of wild populations or varieties of species grown. The characterisation of the seeds collected makes it possible to determine which are not available in the BNG or other similar banks.

doctorates about: a) the morphological and molecular classification of accessions of quinoa (231) and amaranth (103); b) The morphological and molecular classification of the accessions of *chocho* (93), *jícama* (32) and *miso* (14).

Target 2.1.2 – *Establishment of collaboration agreements regarding agrobiodiversity between five peasant/indigenous organisations and the INIAP and other partners, which mainstream ex situ conservation and in situ management actions.*

52. The INIAP directly, or by means of the Heifer Foundation, established official collaboration agreements with a total of 19 peasant organisations and associations that have contributed towards linking the *ex situ* conservation of plant genetic resources managed by the INIAP with the *in situ* conservation of native varieties and their wild relatives managed by small-scale farmers.³⁸ For example, these agreements facilitated the aforementioned collections that resulted in the *ex situ* conservation of Andean grains such as quinoa and amaranth, as well as the *in situ* conservation of tubers/roots that can only be conserved in the farmers' farms and/or in the nurseries, such as *jícama*, miso and certain varieties of potato;

Target 2.2.1 - *3,000 families (that handle approximately 1,500 hectares) have been trained in the intervention microcentres in the four provinces.*

53. Data collected in the evaluation confirms that a total of 4,509 local farmers and promoters completed training on the *in situ* conservation and sustainable use of agrobiodiversity covering a total of 1,790 ha.³⁹ The number of direct beneficiaries per province/canton/year is summarised in table 3.

³⁸ The five target organisations are: CORPOPURUHA, Imbabio, UNORCAC, UCOCP and the Water Department of the Parish of La Esperanza. In addition, the evaluation identified agreements with: a) Pichincha (2): the Water Department of the Parish of La Esperanza (DAPLE) and the organisation Turujta; b) Imbabura (1): Centre for Pluricultural Studies (CEPCU); c) Loja/Paltas (4): the parish organisations of Casanga, Catacocha, Lourdes and San Antonio of the Cantonal Union of Paltas Small-farmers' Organizations (UCOCP); d) Chimborazo/Colta (3): the Corporation of Organic Producers and Traders Bio Taita Chimborazo (COPROBICH), and the Union of Small-farmers for the Comprehensive Development of Sicalpa (UODIC); and e) Chimborazo/Guamote (2): the Centre for Indigenous Studies (CEDEIN) and CORPOPURUWA. In addition, the Heifer Foundation established 8 agreements with associations of producers and cooperatives in Saraguro (an average of 25 people) and an agreement with the Shoulder-Shoulder programme of the MAG to distribute seeds in parishes in Saraguro (169 peasants), Paltas (91 peasants) and Otavalo (169 peasants).

³⁹ Training included, among others: a) introduction of agrobiodiversity through ecology; b) soil management through the production of organic fertiliser and the capture and reproduction of micro-organisms and; c) management, preparation and storage of seeds recuperating ancestral knowledge and techniques; d) phytosanitary management of pests and diseases in crops, including the production of liquid fertiliser; e) management and grafting of fruit plants; and f) analysis of the production costs of agrobiodiverse farms

Table 3: Number of beneficiaries of training per province/canton (2014-2017)

Province/Canton	2014-2015	2015-2016	2016-2017	Total
Imbabura	448	356	291	1095
Cotacachi	378	167	160	705
Otavalo	70	189	131	390
Pichincha	80	121	353	554
Pedro Moncayo	80	-	-	80
Tabacundo	-	121	353	474
Chimborazo	334	541	768	1643
Colta	125	407	161	693
Guamote	209	134	607	950
Loja	175	558	484	1217
Paltas	55	263	207	525
Saraguro	120	295	82	497
Loja	-	-	195	195
Total	1037	1576	1896	4509

Source: FAO

54. The level of participation in this activity and the total area covered has been greater than the Prodoc targets. This achievement is very positive taking into consideration that the project experienced a delay of almost one year before beginning to distribute seeds to the first beneficiaries identified. According to the interviews conducted, the evaluation found that agrobiodiversity did increase in all cases although it was not possible to confirm the average number of local varieties established per hectare or per canton because the project did not monitor this data. In addition, some people interviewed reported that the number of varieties decreased from 2016 to 2017 due to the loss of seeds post harvest and/or the adverse weather effects (particularly, the abnormal rain and frost in the first few months of 2017).

Target 2.2.2 - Prepare three agrobiodiversity inventories in Chimborazo, Imbabura and Loja and create 500 records in communities of four provinces⁴⁰

55. It is confirmed that the project managed to complete the three inventories anticipated in the provinces and cantons resulting in a database of 546 seeds, which facilitated the production of a catalogue entitled "Traditional Andean Seeds of Ecuador". The catalogue contains photographs of 96 seeds detailing their common and scientific names and the province in which they were found (Chimborazo, Imbabura, and Loja). The catalogue was distributed to the promoters, staff of the INIAP and of the provincial departments of the MAG, in order to scale up knowledge of Andean agrobiodiversity and support the project training. An example of the catalogue can be found in appendix 11.

Target 2.2.3 – Three institutionalised fairs in the microcentres of La Esperanza, Guamote and Paltas:

56. The evaluation found that a total of five seeds fairs have been developed in Cotacachi, La Esperanza, Guamote, Saraguro and Paltas. The vast majority of farmers interviewed confirmed that the fairs are highly valued because they make it possible to find out about and exchange unknown crops and recuperate ancestral knowledge

⁴⁰ The canton of Cotacachi had prepared the inventory before the project and published an agrobiodiversity catalogue.

regarding production, harvesting, storage, recipes and ritual uses of such. For example, at the fair in Cotacachi a total of 90 varieties of maize were presented. In addition, the fairs made it possible to identify the farmers with more capacity for the conservation of native crops. At present, the DAGs of the cantons Cotacachi, Guamote and La Esperanza have formally institutionalised these fairs with an ordinance or memorandum.

Target 2.2.4 - *Establish and put into operation six Bio-knowledge and Agricultural Development Centres (BADC) in Guamote, Paltas, Saraguro, Cotacachi, Ibarra and Riobamba, a community bank established in Colta and another improved one in La Esperanza:*

57. The evaluation found that the project was instrumental in establishing three BADC and that the INIAP undertakes technical monitoring of the completion of its management plans: a) the BADC in La Pradera farm, which is a field of the Universidad Técnica del Norte in the canton of San Antonio (Imbabura) where the university will include, in its academic offer of postgraduate programmes for 2018, a master's designed to promote the research and development of agrobiodiverse agricultural practices (the first master's with this purpose in Ecuador). The BADC, which has the form of an Andean snake is currently consolidating its management plan. However, it is observed that it is fulfilling the roles originally set forth; b) the BADC located in land of the provincial DAG of Chimborazo in the canton of Guano (see appendix 12). This centre experienced problems with executing its management plan due to a mistake in the irrigation system and as a result has not managed to offer all of the services expected. However, the recuperation of crops in danger of extinction such as Andean yucca (see appendix 11), which it is understood most agronomists and farmers are unfamiliar with, was observed; as well as c) the BADC in Totorillas in the farm administered by the DAG of the canton Guamote. At present, it has few funds to consolidate itself and appear as an attraction on the tourism route the project promotes. However, it has good markers of over 30 local varieties recuperated (see appendix 10).

Target 2.3.1 - *Three local participatory guarantee systems (PGS) of agroecological products developed with operation and maintenance criteria established in the provinces of Imbabura, Pichincha, Chimborazo and Loja:*

58. The project made it possible to sign five Deeds of Commitment to establish PGS in the four provinces and to ensure the quality of the products in accordance with the principles of agroecology⁴¹ and specify the conditions of sale of these products in local fairs. The Deeds signed to date relate to: a) DAPLE and the producers participating in the agroecological fair of La Esperanza (August 2015); b) UNORCAC and the Central Committee of Women who sell at the Agroecological Fair "La Pachamama Nos Alimenta" in Cotacachi (September 2016); c) UCOCP and the producers of their parish organisations and of other organisations at the entrance of the Platense Shopping Centre in Catacocha, Paltas, known as Randy Nama Agroecological Fair (September 2016); d) the Local Guarantee Committee of Saraguro

⁴¹ Principles include, among others: 1) not contaminating the environment; 2) completely eliminating the use of toxic agrochemicals and poisons; 3) eliminating monoculture; 4) reducing dependence on external supplies; 5) comprehensively managing the plot of land (application of agro-forestry, conservation of soil and water resources, breeding and crops); 6) recuperating and preserving native seeds; and 7) recuperating local agroecological technology.

representing organisations of agroecological producers and local institutions with the cantonal DAG of Saraguro (September 2016); e) organisations of agroecological producers and institutions that make up the Agroecology Work Group and PGS in Chimborazo: Asociación Nueva Generación Tzimbuto, CEDEIN, ESPOCH, SARIV CAMACH and UTOPIA (November 2016).

Target 2.3.2 - *Train 3,800 families (30 percent led by women), of which 800 will sell their products under PGS:*

59. Of the 4,160 families trained by the project (see table 2), it is found that a total of 809 families (including local promoters) have been trained in applying four PGS placing emphasis on the establishment of local guarantee committees and the application of good management practices such as organic farming and the use of organic supplies. Interviews conducted by the evaluation with sellers at the Pachamama Nos Alimenta Fair in Cotacachi and with producers in Saraguro confirm that they like agroecological production because it reduces their dependence on chemical supplies, encourages the intensive management of associated crops that do not require large areas of land like the monoculture systems and contributes added value to the products sold at the fairs. According to the systematisation report and the analysis of the short channels monitoring processes, the sale of agroecological crops contributed not only to diversifying their sales but also encouraged them to scale up agroecological practices to other crops on the farm.⁴² However, the Ecuadorian government has not accredited any agroecological land under PGS to date. Consequently, it is not possible to specify how many of the hectares the project intervened in (1,790 ha) are currently under PGS. Due to this situation, the evaluation questioned the relevance of promoting PGS in the project (see 3.1.3), particularly when taking into consideration that to date there is no legal and institutional framework to establish plots of land certified under national standards and criteria. In addition, the infrastructure and services required to facilitate and promote the sale of these products nationally, which are essential for creating a critical mass of consumers for these products, does not exist.

Target 2.3.3 - *A proposal of a seal of guarantee prepared and validated for products of agrodiverse plots of land under PGS:*

60. The project facilitated the presentation of the proposal in 2017 after a series of consultations and the definition of basic PGS concepts, particularly regarding agroecology, agrobiodiversity and its contributions to building food sovereignty. The proposal is based on four steps beginning with the producer requesting membership of an agroecological producers organisation, creation of the Local Guarantee Committee and development of the PGS (based on phases of initiation, transition and agroecology), territorial validation of the PGS and validation and accreditation of the PGS by the National Guarantee Council (composed of public and private institutions, research centres, agroecological producers, consumers, etc.). However, the evaluation found that the proposal focuses on promoting agroecology which is not a guarantee that the farmers will recuperate, conserve, develop and research native crops for the purposes of food and nutritional security and for the sale of surplus marketable varieties. In addition, the proposal was designed before the law on agrobiodiversity and seeds was passed and did not have sufficient participation from decision-makers

⁴² Heifer Foundation, 2017.

in order to count on the political support necessary to debate it and then coordinate its official approval. Indeed, according to interviews with the MAG, commitment has been made to promoting the seal,⁴³ but the Steering Committee established does not have the internal capacity or enough resources to develop the chains of operation required to apply it at national level in accordance with the NBS and relevant international agreements, such as the Convention on Biological Diversity, the ITPGRFA and the United Nations Framework Convention on Climate Change (UNFCCC).

Target 2.4.1 - *Seven fairs strengthened in Catacocha, Saraguro, Colta, La Esperanza, Paltas, Guamote, Cotacachi and Otavalo:*

61. The project made it possible for the Heifer Foundation to produce seven business plans, perform post-harvest and sales training and finance the delivery of equipment and materials to operate the fairs.⁴⁴ The evaluation found that the business plans contain a detailed diagnosis of the current situation of the fair⁴⁵ and its productive and organisational environment. In addition, the proposal has a good approach which includes the type of clients that should be captured, the sources of income and the key resources of the fair and the key activities and budget for the fair, among others. The seven fairs that have a business plan are: a) The agroecological fair "La Pachamama Nos Alimenta" (Cotacachi) administered by UNORCAC and composed of around 200 members; b) the agroecological fair Imbabio "De la Mata a la Olla" (Otavalo), administered by CEPUCU and composed of around 22 members from ten communities; c) the agroecological fair La Esperanza administered by DAPLE and composed of around 64 members; d) the agroecological fair of CEDEIN (Colta) bringing together around 16 producers; e) the agroecological fair of "Canastas comunitarias" [community hampers] administered by UTOPIA (Riobamba) and bringing together around 120 families from four cantons; f) the agroecological fair Saraguro, administered by the Agroecological School of Saraguran Women composed of around 35 members;⁴⁶ and g) the agroecological fair Randy Namá (Catacocha), administered by UCOCP and bringing together around 35 members;

Target 2.4.2: *Four community micro-enterprises are generating 10 new products:*

62. The project has supported a total of four community micro-enterprises with technical assistance and the delivery of equipment. The evaluation interviewed the managers of two micro-enterprises. The main findings are: a) CORPROBICH - a company of 541 members who are quinoa producers. The project has funded training on the recuperation of native varieties of quinoa, the development of farm management plans based on the production and application of organic supplies and the improvement of harvest techniques. The evaluation has analysed the costs of producing quinoa and the sales prices and confirms that CORPROBICH has achieved gross profits of around USD 20/quintal with the sale of quinoa to foreign companies

⁴³ During the field visits in the cantons of Saraguro and Paltas, the mission was accompanied by one of the representatives of the MAG responsible for promoting the seal, which at the moment has only been applied to facilitate the issuance of certificate of origin of around three crops, which include cocoa and two Andean crops.

⁴⁴ The deliveries include the supply of tables, knives, rolls of plastic bags, digital scales, etc.

⁴⁵ It is worth mentioning that some fairs such as, for example, those of Imbabio, La Esperanza and CEDEIN do not have legal status.

⁴⁶ It currently operates in the central park one Sunday per month and in an assigned space within the conventional Saraguro fair the other three Sundays each month.

from France, the Netherlands and the United States of America. This situation implies that the company is only covering its operational costs at the moment; b) ASOPROSARIV is in the process of restructuring to produce purple maize drinks after having received training on marketing techniques which includes the change of packaging, the logo and the label used in the market tests as well as the delivery of project equipment to process and develop the drink. However, supporting this type of micro-enterprise is highly risky for the project due to its short duration of just two years, and the problems involved in entering the Ecuadorian drinks market where larger and more established companies sell soft drinks at very competitive prices.

Target 2.4.3 - *Two agrotourism routes developed in Paltas and Colta:*

63. The Heifer Foundation prepared a study to identify three agrotourism routes in Guamote (Good Living Seeds Route), Colta (Llakta Kawsay Route/San Martin Alto Quinoa Route) and Paltas (Agrobiodiversity Route). The evaluation understands that the routes were defined with those responsible for tourism in the three cantonal DAGs involved and, in the case of the routes in Chimborazo, presented to the provincial council. An analysis of the Report on the agrotourism routes of Guamote, Colta and Paltas (2017) confirms the presentation of a series of routes in each canton of 1 to 4 days of walking with the associated costs (from USD 11/adult for one day to USD 235/adult for four days including accommodation). However, the diagnoses performed in each canton identified a series of problems related to the establishment of the routes proposed. For example, the proposal of creating an agrotourism centre at Totorillas farm (Good Living Seeds Route) as part of the route in the canton of Guamote is complicated due to the poor state of the farm that requires substantial financial investment before being able to provide the services planned. During the visit to the BADC on the land of the same farm, the evaluation found that its poor state is a problem that could place the promotion of the route at risk. From its interviews the evaluation team understands that to mitigate the problems identified, the routes will be modified and a communication strategy developed in order to increase the agrotourism offer, which is essential for generating financial profits from the routes and promoting agrobiodiversity at the same time.

3.2.3 Component 3 - To educate and raise awareness among decision-makers, teachers and consumers about the environmental, nutritional, cultural and economic value of agrobiodiversity.

The evaluation is moderately unsatisfied with the fulfilment of the outcomes expected under the project's third specific objective. This position is explained under the following findings with regard to the achievement of the expected outcome 3.1:⁴⁷

Target 3.1.1 - *Implement an information and awareness-raising programme that includes a national workshop, four local training workshops and two socialisation events:*

64. The project has managed to compile a series of forums, fairs and symposiums, which raised awareness among more than 1,100 participants. However, they have taken place as a series of isolated activities rather than a coordinated programme of communications geared towards the change in policies and specific strategies at a

⁴⁷ Decision-makers of governmental bodies are informed and aware of the environmental, nutritional, cultural and economic value of agrobiodiversity.

national and/or subregional level. For example: a) the Specialised Subregional Workshop on the "Importance of the use and conservation of Agrobiodiversity for Food and Agriculture, the case of Quinoa" performed in Quito in July 2016 with participants from Argentina, Bolivia, Ecuador and Peru identified a series of actions to apply at national and regional level to support the implementation of the ITPGRFA and the conservation and sustainable use of agrobiodiversity. At a regional level, these actions include, among others, the realisation of international and food fairs focusing on quinoa, a business conference to promote the sale of quinoa, the documentation of the collection of forgotten varieties and their wild relatives and the consolidation of the Andean Network of Quinoa Producers; b) The "Food Sovereignty and the Right to Food in a Context of Climate Change" Forum organised in Quito in October 2016 by the Parliamentary Front against hunger in Ecuador "Ecuador sin Hambre" facilitated the exchange of experiences and information about climate change in Ecuador, the challenges for agriculture and the actions being performed to mitigate these effects in agriculture; c) A regional symposium on *Chocho* (*Lupinus mutabilis*)⁴⁸ held in Quito at the end of 2016 and involving guests from Bolivia, Ecuador and Peru. The symposium facilitated the communication of information and the exchange of experiences regarding scientific and technological progress related to *chocho* and raised awareness of innovation in agricultural and food products based on *chocho* to demonstrate its importance for food and nutritional security. In addition, a voluntary association of researchers was established called the "Regional Research Network of *Chocho* or *Tarwi*". The objectives of the Network focus on proposing new lines of research about *chocho* to make progress on the industrial and technological transformation of the sector producing this crop. In this sense, one function of the Network is to suggest and promote public policies geared towards strengthening and developing this research; d) the systematisation of the Regional Dialogue International Year of Pulses, held in Quito in December 2016. The systematisation has made it possible for the participants to take stock of the state of production of pulses in terms of opportunities, challenges and practices applied, and of the common priorities and recommendations agreed upon with regard to the future exchange of experiences regarding pulses to promote and the pulses in the region and at a national level.

Target 3.2.1 - *Prepare and apply a methodology guide to mainstream agrobiodiversity and its values in the educational systems at primary and secondary school levels:*

65. A specialist hired using funds from the FAO-EC prepared the "Educational Guide on the Production, Management and Conservation of Agrobiodiversity" in 2017. The Guide is divided into four units: 1) Introduction to agrobiodiversity involving 10 activities that include the construction of concepts about the terms agrobiodiversity and agroecology, a conversation about their benefits and dialogue about the current legal framework; 2) Preparation of the land, sowing and cultural tasks based on 12 activities. The activities include a participatory diagnosis of agrobiodiversity available locally and the knowledge associated with its conservation and use, training on the preparation of organic fertilisers under the "bokashi" method⁴⁹ and the preparation of organic insecticide to manage pests, and dialogue about the rational use of water for field irrigation; 3) Handling of seeds, harvest and post-harvest tasks with 12

⁴⁸ *Chocho* (called *Tarwi* in Peru and Bolivia) is the only edible grain legume that comes from the Andes.

⁴⁹ BOKASHI comes from the Japanese verb BOKASU (to dissolve), due to the fact that the original form of the materials dissolves, and ferments with micro-organisms and with the heat produced.

activities including the identification of quality seeds, seed inoculation techniques (with the use of micro-organisms) and others relating to their post-harvest storage (including the development of packaging and packing of *chocho*; and 4) Sales practices with 9 activities that include discussions on agroecological fairs, field visits, visits to fairs, discussion about the development of the alternative sales channels (CIALCO) promoted by the MAG and the preparation and evaluation of an agroecological production, transformation and sales project.

Target 3.2.2 – *Train 90 teachers from 30 schools of the four provinces on the multiple values of local agrobiodiversity and the application of the methodological guide:*

66. A total of 87 teachers have been trained in around 8 educational units in the four provinces (in Imbabura this includes the Universidad Técnica del Norte where there is a BADC). The training offered includes a technical course for secondary school teachers in the "Production of pulses under the focus of the management and conservation of agrobiodiversity" which took place in Riobamba in 2016 under the module, "Production and technical propagation of open field and/or greenhouse short channel crops".

Target 3.2.3 - *30 schools incorporating topics of agrobiodiversity based on the application of the methodological Guide:*

67. The project has led to the incorporation of agrobiodiversity in 8 schools in the four provinces by means of 14 events regarding an induction to agrobiodiversity and agroecology and the preparation of Bokashi and organic insecticides.⁵⁰ A total of 1,490 teachers and students benefited from the events based on the application of the educational Guide. The evaluation visited two educational units in Saraguro and Paltas (Inka Samana and Manuel José Jaramillo). The interviews conducted with the teachers and a selection of students found that there was a high level of satisfaction with the training completed. In the case of the Educational unit Manuel José Jaramillo, a teacher set up a school garden (see appendix 12). In the case of the Educational unit Inka Samana, the events motivated a teacher from a nearby pre-school centre to set up a school garden, which has been the subject of interactive education. The evaluation found that school gardens are highly valued for the following reasons: a) the gardens offer access to agrobiodiversity, not only by teachers and students but also by parents and the local community in general; b) the gardens offer opportunities for improving the health and nutrition of students, teachers and parents by producing a hamper of fruit and vegetables, and other local crops produced without chemical supplies; and c) gardens can be the subject of interactive teaching. For example, art has been encouraged by means of painting crops with a description of the properties of each crop (see appendix 12), or maths by means of the measurement of the perimeter of the garden, the measures that should be applied for sowing fruit trees, the weight of the crops at harvest, etc.

⁵⁰ The educational units are: Sarance and Miguel Egas in Imbabura; Atahualpa and Puruha in Chimborazo; and Manuel José Jaramillo, Teniente Coronel Lauro Guerrero, 29 de mayo, ABC Tenta and Inka Samana.

Target 3.3.1 – *Publications, audiovisual material and systematisation document of all of the project experiences:*

68. The project has produced publications (that are shown in appendix 2) and audiovisual material to promote the specific aspects related to agrobiodiversity. They include publications about alternative agrobiodiversity recipe books and videos to raise awareness among decision-makers, farmers and consumers about the values of agrobiodiversity and the importance of progressing the conservation and sustainable management of Andean agrobiodiversity. An important contribution is the publication of the document "Biodiversity for agriculture and food in Ecuador" (INIAP, October 2017). The document has four chapters geared towards informing decision-makers and other interested parties about: 1) the situation in Ecuador as regards biodiversity for agriculture and food that includes information about genetic erosion and the operation and contributions of agrobiodiversity, among others; 2) the current status and trends in the conservation of biodiversity which includes information about inventories and species that are threatened or in danger of extinction; 3) the state of use of biodiversity for agriculture and food as well as its medicinal, pharmaceutical, cosmetic, industrial and artisanal uses, cultural, religious and ceremonial services, among others; and 4) the state of interventions for the conservation and sustainable use of biodiversity for agriculture and food which includes the BADC, the current legal and institutional framework and future actions to meet the Aichi targets.
69. However, the evaluation found that raising awareness among the decision-makers and other groups was not developed within a communication strategy that includes an economic focus, which is essential for convincing decision-makers in the Ministry of Economic and Financial Affairs, buyers and consumers that agrobiodiversity must form part of the country's macroeconomic strategy. In particular, the project has not managed to raise awareness among decision-makers of the importance of approving the regulation implementing the law on agrobiodiversity and seeds. According to the findings of the evaluation, there is specific evidence that small-scale farmers like to apply the production of agrobiodiverse plots of land under agroecological practices. Consequently, there is a powerful message that agrobiodiversity could simultaneously fulfil several of the priority needs of family farming such as, for example, adaptation to the effects of climate change to safeguard food security, improving family health and diet, the recuperation of soil and the quality of water resources and generate income equal to or better than the minimum salary with less than a quarter of a hectare of land (with drip irrigation).

3.3 Efficiency

Evaluation question 3: Have the intervention methods, institutional structure and financial, technical and operational resources and procedures available helped or hindered the achievement of the project outcomes and objectives?

Finding 4: The intervention mode and institutional structure in which the project has had to operate, and the financial, technical and operational resources and procedures made available to the project have been partially sufficient. The change in management mode from OPIM to DIM at the start of operations in 2014 without a review of the Prodoc (including its logical framework and the composition of the Steering Committee) led to a delay in the implementation of the project, particularly component 2, from August 2014 to May 2015. Although the project activities were intensified between the second and third year, the funds ran out which resulted in a lack of resources to consolidate activities, systematise and disseminate the outcomes to the stakeholders. The project's broad area of intervention involving a high number of stakeholders also did not facilitate its execution, particularly when taking into consideration the resources assigned for the management of the project which were not sufficient to cover the costs associated with DIM projects.

3.3.1 Management mode and organisational structure

70. The project experienced a delay of more than nine months for many activities from the start of operations on 01 August 2014 until the Letter of Agreement (LoA) was signed with the Heifer Foundation in May 2015⁵¹. The decision to change the management mode from OPIM to DIM caused problems with the division of work, above all between FAO-EC and the Heifer Foundation. In particular the Prodoc anticipated that the Heifer Foundation would be a member of the project Steering Committee but after the Steering Committee's decision to appoint the FAO-EC as the party responsible for the administration of the project, at the request of the INIAP in 2014, it became necessary to use the Heifer Foundation as a service provider to perform certain activities that FAO could not intervene in due to its internal rules (as in the purchase and distribution of non-certified seeds of the local varieties to promote). After several months of negotiating, the Foundation agreed to assume the role of service provider but did not agree with transferring its position within the Steering Committee. This situation complicated the administration of the project by the FAO-EC because it kept the foundation as judge and defendant in relation to decisions to implement the project and obliged the FAO-EC to offer around three months of training to the Foundation on how to apply its rules on the realisation of tenders. Indeed, FAO had to provide training to the Foundation on the issuance of proformas in the first three months of executing the LoA from May to July 2015.
- 4 In addition, the Heifer Foundation did not have staff and offices in the four provinces involved. This situation increased the logistical costs of the FO-EC coordinator and contributed towards a delay in certain priority activities such as the identification of

⁵¹ Activities included the preparation of ordinances with the DAGs, the promotion of seeds and agroecological fairs, the identification of tourism routes and purchase and redistribution of native crops, among others.

seeds suppliers and native plants to promote the conservation and replication of these seeds in the agrodiverse plots of the farmers.

71. Due to the aforementioned delays, the FAO-EC decided to recruit a new coordinator for the project in May 2015. This decision was favourable and resulted in a new dynamic within the project, and in particular the intensification of activities which made it possible to fulfil most of the outcomes reported in section 3.2 above. The evaluation found that the combination of recruiting a coordinator with extensive experience in managing projects and fieldwork and the DIM management mode was a substantial factor in facilitating the transformation of project resources into the outputs expected in just two years. However, although it can be argued that this combination has led to more agile management of the project, the evaluation also observed that it reinforced the focus on a "project" of activities instead of a process of development where the management can be "institutionalised" as the OPIM can offer.
72. As regards the institutional structure the project has operated in, it was found that the project had to work with a wide range of public institutions and non-governmental stakeholders, as well as 19 peasant organisations and associations at all levels (national, provincial, cantonal and parish). The evaluation found that it was very difficult for the project coordinator to complete technical monitoring and coordination with so many stakeholders, particularly when taking into account that the Heifer Foundation does not have offices, specialists or vehicles in the provinces (except in Loja).

Operational efficiency - monitoring, risk management and synergies

73. The evaluation found that there was no review of the logical framework during the implementation of the project. In addition, the internal monitoring focussed essentially on the fulfilment of operations and outputs. Although this information is reported satisfactorily in the Project Progress Reports (PPR) each semester for FAO and the Annual Implementation Report (PIR) for the GEF, it was found that there have been delays in the submission of these reports by several months. For example, neither the PPR for the first semester of 2017, nor the PIR for July 2016 to June 2017 had been finished and distributed during the evaluation mission. It is understood that the main reasons for these delays are the slow provision of data from the stakeholders in the implementation of the project and the intensification of the activities to recuperate the first year lost. In addition, from the point of view of their contents, it was found that there was certain duplication of information regarding the level of progress of the project taking into consideration that the preparation and approval of these reports take up valuable time for the coordinator, the evaluation believes that the preparation of two progress reports has not contributed to efficient management.
74. Another substantial finding of the monitoring system is that it was essentially geared towards informing the GEF and FAO about the implementation instead of encouraging internal reflection by the Steering and Technical Committees and by the DAGs and local peasant organisations. In addition, the coordinator did not have sufficient resources in the Prodoc to use a monitoring and evaluation specialist. The evaluation believes that this situation did not facilitate frequent internal reflection on

the progress and spaces of the implementation of the project among the stakeholders, particularly in the field. For example, the association agreements with the peasant organisations did not include the monitoring of the outcomes of the activities performed. Two weaknesses, in particular, were observed. First of all, there was not enough monitoring of the delivery of seeds to the peasant organisations by the Heifer Foundation, in particular the amounts of seeds that were delivered to each farmer by the peasant organisations and associations and the amounts recuperated. Consequently, the evaluation cannot verify the efficiency of the peasant organisations (and the Heifer Foundation) in the management of seeds, or whether such farmers participated in the second and third agricultural campaigns⁵². Secondly, field data were not monitored, as mentioned in 3.3.2. Consequently, neither the project nor the evaluation can comment on the amounts of seeds delivered, returned and kept for consumption, sale and the next campaign. It is also not possible to analyse production costs, earnings made from sales, etc. The evaluation believes that this situation has restricted the possibilities for learning with regard to the consolidation of food and nutritional security, and in terms of developing farmers' sales skills.

75. The farmers interviewed also informed the evaluation team that monitoring was complicated due to the short duration of the project, which obligated the peasant organisations to deliver seeds to new farmers in the following agricultural season, in order to cover the target of 3,800 beneficiaries. When it is taken into account that many farmers planted local varieties of fruit trees as well as short cycle varieties of fruit trees, it is evident that the project did not provide for sufficient technical monitoring to ensure the establishment and proper handling of the agrodiverse plots of land. This lack of technical monitoring also manifested itself in the field visits where the farmers interviewed confirmed problems with pests in the harvest and post-harvest of maize and potato seeds. In this case, there was not enough monitoring to consolidate the proper preparation and application of organic fertilisers, micro organisms and liquid fertiliser. For example, in Otavalo, the evaluation found persistent problems in the handling of pests such as weevil (*Sitophilus zeamais*). In addition, it was found that there is a need to improve post-harvest practices, particularly the need to establish community germplasm banks and/or improve the storage of seeds in the home.
76. In the case of interviews with managers of micro-enterprises and BADC, those interviewed confirmed that the duration of the project was not sufficient to monitor the application of the business/management plans prepared with the project's support. This problem was also identified in the DAGs interviewed in Guamote and Paltas where they confirmed that there was not enough time to modify and approve the agrotourism routes proposed.
77. At the FAO-EC level, the evaluation was informed of the system of monitoring indicators of all of the projects implemented by FAO in order to determine its level of contribution to the four priority areas of the CPF⁵³. However, this system only serves

⁵² In the interview with the Heifer Foundation an agreement was made to receive a report clarifying these data but it has not yet been received.

⁵³ Area 1: To contribute to strengthening public policies for sustainably increasing systemic productivity, and to facilitate activities in the livestock, aquatic and fishing sector linked to the change in the production matrix; Area 2: To contribute to the strengthening of public policies to guarantee food sovereignty; Area 3: To contribute to the strengthening of institutional and legal frameworks for the

to gather data and information for FAO's internal use. Consequently, it does not serve to monitor projects independently to promote dialogue with the project coordinators and stakeholders regarding how to improve the effectiveness and efficiency of the project's main activities.

78. With regard to financial monitoring, the accounting system is managed in strict accordance with FAO's accounting rules. This situation does not make it possible to monitor the quality-price ratio of the outputs produced by the project in order to determine whether there is a good recuperation of costs. In addition, it does not facilitate good monitoring of the operating plans to identify when funds will be needed for certain activities, in good time.

79. Due to the lack of monitoring of outcomes (in other words the effects of its outputs), the project reduced opportunities to develop a communication strategy geared towards:

- Empowering peasant organisations in informed decision-making based on the exchange of information and experiences within and among them.
- Compiling important data and evidence to subsequently convince the decision-makers to recognise and support the conservation and sustainable use of agrobiodiversity in their policies and programmes. In the case of some stakeholders there was not a lot of interest in supporting agrobiodiversity (for example, the provincial councils of Imbabura and Loja), this strategy could have encouraged the approval of the ordinances and commitment originally set forth in the Prodoc (see also 3.2.1 target 1.3.1).
- Developing and integrating risk management in the planning of the project. Indeed, after analysing the PIR, it was found that the LTO refers to the project's progress "despite the negative financial situation in the country".⁵⁴ However, in the updating and classification of risks in the same report (section 5), the risks were classified as "low risk" despite the fact that, at that time, the INIAP was experiencing budget cuts that supposedly had a negative impact on the ability to complete monitoring in the field.⁵⁵
- Encourage the development of synergies with other projects, in particular the project PROMAREN operating in the province of Chimborazo. Indeed, the evaluation of the project PROMAREN found that it did not fulfil its specific objective of reintroducing and sustainably using agrobiodiversity under

management of food safety and quality, as well as livestock health; Area 4: AREA 4: To contribute to the consolidation of the environmental public policy through conservation, valuation and sustainable management of biodiversity and natural resources as a strategic resource of the government, as well as ensuring ecosystem services and the development of strategies for adapting to and mitigating climate change and ensuring food sovereignty.

⁵⁴ PIR 01 July 2015 to 30 June 2016, p. 13.

⁵⁵ It is worth pointing out that the updating and classification of risks included the insertion of three new ones that were classified as "high risk". In these cases, the LTO proposed mitigation measures such as, for example, placing more emphasis on climate change and adjusting the targets in the logical framework according to the fulfilment of outputs and outcomes. The evaluation did not identify evidence that these proposals were covered sufficiently, although it is accepted that there was little time to implement them in 2017 before the original closure of the project in August 2017.

management systems of moors and water basins and with the aim of improving the food sovereignty of the local indigenous population.⁵⁶

80. The interviews performed with the GEF unit at FAO, FAO/FAO-EC, MAG and MAE indicate that not enough dialogue was established and in sufficient time to tackle the aforementioned weaknesses and seek appropriate extension (possibly with additional funds) to complete, monitor and consolidate the substantial progress made, and in order to achieve a good quality to price ratio.

3.3.2 The financial, technical and operating procedures and resources

81. Taking into consideration that the project had to be operated in four provinces with a wide range of stakeholders without offices, specialists and field vehicles, the evaluation found that the budget assigned for the management of the project (USD 117,000) was not enough for three years (with an average of USD 39,000/year) without taking into consideration the extension of seven months until the end of March 2018 without additional funds. As regards the counterparts in kind, the project has not achieved their equivalent value in cash (see appendix 6), partly due to the budget cuts, particularly since 2016 with the drop in the global price of oil (Ecuador's main export), and due to the lack of skilled specialists at the MAG and other government stakeholders involved in the project.
82. FAO's financial procedures with regard to completing tenders for the acquisition of materials and equipment did not facilitate the management of the project either. For example, FAO could not assume the role of buying uncertified seeds from producers of native crops. Consequently, the Heifer Foundation was in charge of making these acquisitions although the foundation had no knowledge of FAO's procedures. This situation resulted in around three months of training of the Foundation by FAO-EC before starting to buy seeds in 2015. Consequently, the purchase of seeds took longer than expected and resulted in a delay in the delivery of the seeds to the producers. In addition, the GEF stipulated hiring instead of buying cars. The interviews confirmed that the project has had to spend a lot more funds on hiring cars than if they had bought them.
83. Positive aspects of the project that on the one hand facilitated the intensification of activities under components 2 and 3 which mitigated the problems of technical monitoring in the field, include:
- Hiring local motivated promoters with the ability to speak in the Kichwa language in the four provinces made it possible to establish positive collaborative relationships between the project, the parish bodies and DAGs, cantonal DAGs, peasants organisations and farmers;

⁵⁶ The only case of a synergy identified by the evaluation with another programme was with the Joint National Programme on Food and Nutritional Security in Imbabura (FNS Imbabura) where the two projects managed to coordinate the identification and replication of local native crops, in particular *chocho* in the cantons of Cotacachi and Ibarra (La Esperanza) from 2015 to 2016. The interviews confirm that this coordination contributed towards reducing the time needed between identifying the seeds and distributing them to farmers and enabled the UNORCAC to rapidly increase the number of people registered in the organisation that produce agroecological outputs in agrodiverse plots of land. As a result, the project managed to include more members in the agroecological fair "La Pachamama nos Alimenta".

- The entry into the association agreements with 19 peasants' organisations and associations, schools and universities.⁵⁷ The association agreements were essential for introducing the project to farmers and other local stakeholders, and facilitating the execution of the project's activities in the four provinces. The association agreements with peasants' organisations such as CEDEIN, UNORCAC and UCOCP that played an important role in the distribution of seeds of some 30 local varieties to the participating farmers and the replication of the seeds, has been more notable. Other benefits of the association agreements include, among others, the opportunity for peasants' organisations to promote the assessment of agrobiodiversity to recuperate the indigenous/peasant identity and empower themselves in terms of internal organisation and participation in agroecological and local fairs;
- The development of close relationships with the parish bodies and parish and cantonal DAGs, which enabled dialogue about the approval of ordinances and promoted the development of agroecological fairs and seeds fairs to enable and promote the sale of local products and the exchange of local seeds;
- The promotion of the image of the family farmer as guardians of the centres of origin of important crops to safeguard food security and sovereignty in the Andean area of the country.

State of co-financing set forth in the project document⁵⁸

84. Table 4 below summarises the current status of the co-financing of the project with regard to that planned in the Prodoc. More details can be found in Appendix 5. After analysing the co-financing it is confirmed that the project spent a total of 4,403,380 which is equal to 66.8 percent of that planned in the Prodoc. In addition, the project managed to spend USD 1,250,000 (100%) of the funds assigned by the GEF until 31 October 2017⁵⁹. The following findings are pointed out with regard to the project counterparts:

- The equivalent of USD 685,000 (102.7%) of FAO was spent by 31 October 2017, of which USD 335,000 was in cash to pay for the coordinator, logistical expenses, etc.;
- The INIAP provided the equivalent of USD 410,000 (62.8%) of which USD 30,000 was in cash. The main reasons why it did not manage to commit the amount assigned in the Prodoc are:
 - Its participation in the project decreased after the political and institutional changes in 2014, in particular because its role in the transfer of technology was reduced. In addition, according to the INIAP it realised substantial expenses during the project design and identification phase that were not accounted for. However, the evaluation team believes that these activities did not form part of the Prodoc.
 - The economic crisis that resulted in a sharp decrease in Gross Domestic Product (GDP) in 2016 (see also 3.3.2) led to budgetary cuts that affected the

⁵⁷ Due to FAO rules, association agreements with unofficial entities or those without legal status were entered into with the Heifer Foundation.

⁵⁸ Until 31/10/2017

⁵⁹ This amount was confirmed with the GEF unit on 19 January 2017.

INIAP and the MAG in general. The evaluation understands that these cuts affected implementation as from 2016;⁶⁰

- The lack of vehicles and other equipment owned privately, or owned by the project, reduced opportunities to provide extension services, particularly with regard to quality control, replication, storage and refreshment of seeds with farmers and their peasants' organisations. This situation resulted in using the GEF funds to cover the logistical expenses involved such as the hiring of vehicles (the GEF does not permit the purchase of vehicles) and the payment of travel expenses to ensure the accompaniment of extensionists and agronomists in the field visits;
- The Heifer Foundation contributed the equivalent of a total of USD 600,000 indicating that it fulfilled its counterpart in kind and cash (USD 200,000) as planned. However, it was subsidised because of the fact that FAO had to provide training to the Foundation over the course of three months in 2015 in order to apply its rules for acquisitions of materials and equipment, particularly the purchase of seeds from local native crops that obligated the Heifer Foundation to request documents from the suppliers pursuant to said rules;
- The MAG assigned the equivalent of USD 116,350 (122.2%) in kind confirming that it committed more than its planned counterpart. The main reason was due to the direct implication of provincial departments of the MAG instead of the INIAP for certain activities under component 2;
- The DAGs provided the equivalent of USD 1,856,170 (67.4%), of which USD 469,240 was in cash. The main reason for not fulfilling the anticipated counterpart was the lack of participation of some DAGs in the project, particularly for provinces of Imbabura and Loja where there was no, among others, influence on its LUDPs, in the application of ordinances or participation in local field activities.
- The peasants' organisations provided approximately USD 328,120 (168.6%) of which USD 119,338 was in cash. This amount was much more than set forth in the Prodoc due to the involvement of 19 peasants' organisations and associations in the project's activities instead of the six identified in the Prodoc;
- The universities and research centres contributed USD 348,900 (21.4%). According to information from the project, universities were involved much less than expected in the Prodoc due to budget cuts that did not allow them to involve different faculties in the project activities (agricultural schools, communication schools, etc.). Indeed the most substantial contribution was the establishment of the BADC with Universidad Técnica del Norte, which it was not possible to replicate with other universities due to these problems.
- Lastly, it achieved small isolated contributions from some local NGOs such as, for example, the FEPP and GiZ (see sub-section 3.2.1). In the latter case, the technical contribution included the development of a proposal of national biodiversity indicators in 2015 that included two indicators to monitor agrobiodiversity.

⁶⁰ In 2016, GDP was USD 97,802 m. which was 1.5 percent less than in the previous year: <https://www.datosmacro.com/pib/ecuador>

Table 4: Current status of the project budget until 31 October 2017 (USD)

Financial source	Amount planned	Amount spent
GEF	1 250 000	1 250 000
Co-financing		
FAO	667 000	685 000
INIAP	652 260	410 000
Ministry of Agriculture and Livestock	95 207	116 350
Heifer Foundation	600 000	600 000
Decentralised Autonomous Governments	2 755 300	1 856 170
Local organisations	194 568	328 120
Universities	1 631 900	348 900
Others: GiZ, FEPP, Huamana Foundation and Kawsay Foundation	-	58 840
Total co-financing	6 596 235	4 403 380
TOTAL (co-financing and GEF)	7 846 235	5 650 380

Amount in kind and/or cash⁶¹

3.4 Normative values

3.4.1. Inclusivity and participation

Question: To what extent has the project, in its work with local communities, ensured that all the stakeholders participated in the decision-making process (including the implementation of activities) and the empowerment of farmers in progressing with their rights?

Finding 5: The evaluation found that the project managed to establish an acceptable prior consultation and very effective inclusive participation to the benefit of peasant men and women who are mainly of indigenous origin in the cantons of Cotacachi, Otavalo, Guamote and Saraguro. This situation was made possible as a result of the association agreements and the hiring of bilingual Spanish and Kichwa-speaking promoters as mentioned above in sub-section 3.3. In addition, the establishment of good direct relations with indigenous leaders was observed, such as, for example, with the prefect of the provincial council of Chimborazo and the indigenous mayors in the cantonal DAGs of Cotacachi, Guamote and Saraguro, as well as the equality of access to the equipment and materials distributed to the peasants' organisations and their farmers.

85. In its reading, and with stakeholders, the evaluation confirmed that the prior and inclusive consultation took place during the identification of the project. For example, the inclusion of five peasants' organisations in the Prodoc was observed. It is understood that the identification of the project from 2012 to 2013 took place through a series of consultations with stakeholders at national level, in particular with the MAG to define its role in the project and in specific contributions, such as the development of the seal to certify the PGS. In addition, an agreement was reached with the MAE regarding the project's contributions to the NBS.

⁶¹ Includes logistical costs, the provision of materials and premises, etc.

86. At a provincial level, the INIAP performed a series of field visits and prior consultations with the farmers and their organisations in the Andean provinces in order to select the priority areas of intervention to promote the conservation of the country's plant genetic resources. These areas were selected based on a series of criteria that included the centre of origin of native crops of national, Andean and international interest, points of access to high agrobiodiversity and ancestral knowledge, and the wish of farmers to participate in the project. In addition, the decision to select the provinces based on the political wishes of the DAGs was important. For example, in the case of the province of Imbabura there were already three political commitments to promote agroecological fairs in the cities of Cotacachi and La Esperanza. In the case of the province of Pichincha there was already an ordinance to promote agroecological production.
87. During the implementation of the project, the farmers and their organisations confirmed that they were duly informed, consulted and involved in the decision-making process with regard to the planning and realisation of several activities. For example, the evaluation received confirmation from the farmers and leaders interviewed that the project respected the consultation and inclusive participation of women, men, young and old people with ancestral knowledge, by means of, among others:
- The completion of legislative pre-consultations on the draft bill on agrobiodiversity and seeds in the provinces, as well as in the drafting of cantonal ordinances and ordinances of the province of Chimborazo (see point 3.2.1 - target 1.3.1);
 - Consultations to complete the collections that resulted in the identification of 494 new accessions (see appendix 10);
 - The 19 association agreements with the peasants' associations and organisations that according to the leaders enabled ongoing consultation with the project and the stakeholders regarding the promotion and development of the agrodiverse plots of land, as well as the sale of crops in the agroecological fairs;
 - The hiring of local bilingual promoters who made it possible to have frequent conversations with the farmers about the implementation and monitoring of the project's operations;
 - The development of the BADC and the training of 87 teachers and around 1,490 students in schools covering all of the intervention cantons, in particular in Chimborazo (757) and Loja (514) where communication about agrobiodiversity has multiplied in the local communities and in the universities involved.
88. The evaluation is also satisfied that the project has observed the inclusivity of indigenous communities in the processes to prepare the LUDPs, local ordinances and the law on agrobiodiversity where farmers' rights have been established in accordance with the provisions of the ITPGRFA (see also target 1.2.1 in point 3.2.1.). This situation was helped by means of:
- The association agreements with indigenous organisations, for example the UNORCAC in the province of Imbabura, CEDEIN in the province of Chimborazo and several indigenous associations in the canton of Saraguro, province of Loja;
 - The hiring of bilingual promoters that in the provinces of Imbabura and Loja are of indigenous origin and have extensive knowledge of their land and crops;

- The establishment of good direct relations with indigenous leaders was observed, such as, for example, with the prefect of the provincial council of Chimborazo, the indigenous mayors in the cantonal DAGs of Cotacachi, Guamote and Saraguro, and the directors of schools in several cantons, among others.

89. As regards access to the communication of the project's achievements, lessons learned and good practices, the evaluation found with the farmers and peasants' organisations that communication was not systematised to facilitate a frequent flow of information between the provinces and it is understood that the project did not have resources to hire a specialist in monitoring and communication or a specialist to support field visits in other provinces. The exchange of information with PROMAREN in the province of Chimborazo was not detected either.

3.4.2 Consideration regarding gender matters

Evaluation question 4b: To what extent has the project addressed gender equality issues in its design and contributed to the empowerment of women, young people and other vulnerable groups throughout its completion?

Finding 6. The evaluation found a high level of fulfilment of FAO's gender equality objectives. In particular, the evaluation found that 70 percent of farmers that participated in the project are women. In particular, these women have benefited from greater recognition of their importance as agrobiodiversity knowledge holders and generators of their own income by means of their participation in agroecological fairs.

90. The evaluation has enough evidence to confirm that the project integrated FAO's gender equality objectives. With regard to the first objective, it is observed in the Prodoc and in the implementation of the project that it places emphasis on the equal participation of men and women in decision-making in relation to the project's main activities. The main finding is that the project managed to train a higher percentage of women than was planned in the Prodoc. For example:

- With regard to target 2.2.1 the training related to the development of agrobiodiversity (3,000 families) set forth that thirty percent of the training must be "led by women in the micro-centres of intervention in four provinces". Table 5 below confirms that 3,154 women were trained, which is the equivalent of 70 percent of all those trained. It was found that this training included the training of leaders (of groups of women) in all of the seven cantons intervened in;
- The evaluation found that the participation of women in the establishment and application of PGS was above 85 percent of the total trained (table 6);
- The interviews conducted in the field with the grassroots organisations and with the cantonal DAGs confirmed that women were present in the decision-making (see images of the mission in appendix 12), although in the second level and provincial level organisations it is less evident.

Table 5: Number of men and women trained per province/canton (2014-2017)

Province/ Canton	2014-2015			2015-2016			2016-2017			Total	Total Wom en
	Men	Wom en	Total	Men	Wom en	Total	Men	Wom en	Total		
Imbabura	55	393	448	112	244	356	81	210	291	1095	847
Cotacachi	42	336	378	62	115	167	44	116	160	705	567
Otavalo	13	57	70	60	129	189	37	94	131	390	280
Pichincha	21	59	80	53	68	121	153	200	353	554	327
Pedro Moncayo	21	59	80	-	-	-	-	-	-	80	59
Tabacundo	-	-	-	53	68	121	153	200	353	474	268
Chimborazo	116	218	334	199	342	541	131	637	768	1643	1197
Colta	33	92	125	157	250	407	81	80	161	693	422
Guamote	83	126	209	42	92	134	50	557	607	950	775
Loja	53	122	175	219	339	558	162	322	484	1217	783
Paltas	34	21	55	127	136	263	77	130	207	525	287
Saraguro	19	101	120	92	203	295	19	63	82	497	367
Loja	-	-	-	-	-	-	66	129	195	195	129
Total	245	792	1037	593	993	1576	527	1369	1896	4509	3154

Source: FAO

Table 6: Number of men and women participating in the PGS by province

Province	Men	Women	Total
Chimborazo	66	321	387
Imbabura	24	269	293
Loja	8	54	62
Pichincha	19	48	67
Total	117	692	809

Source: FAO

91. With regard to the fulfilment of FAO's second objective - equal access to and control over decent employment and income, land and other resources - it was found in the interviews conducted in agroecological fairs in La Esperanza and Cotacachi that peasant women are the main beneficiaries of the activities geared towards the development of short channels as can be seen in appendix 12. In addition, the evaluation found in the interviews and visits to agroecology fairs in Cotacachi and La Esperanza that women managed to improve their income (see point 3.2.2 target 2.3.2). The interviews performed with women sellers participating in the fairs in Cotacachi, La Esperanza and Saraguro confirmed the following findings:

- Eight women sellers interviewed at the Agroecological Fair La Pachamama Nos Alimenta in Cotacachi confirmed an average income of USD 20 per person/week through sales at the fair (see the fair in the figure in appendix 12);
- Six women interviewed at the agrobiological fair La Esperanza confirmed an average income of USD 16 per person/week due to the sales at this fair;

- Eight women producers of agroecological products from the city of Saraguro confirmed that their income from sales at the ecological fair were an average of USD 10 per person/week.
92. The evaluation found that the participation of women in the sale of their products promotes significant changes with regard to their quality of life. The following findings, in particular, were identified:
- The opportunity to generate their own financial income, which facilitates greater capacity to buy items they need such as food, school materials and medicine;
 - Socialising with other women to reduce loneliness and regain their self-esteem;
 - Empower themselves in terms of making decisions by means of gaining experience in sales, in particular techniques for selling to consumers with little experience of native crops.
 - The most skilled sellers can generate income over USD 40/week when they contribute added value to their products by means of the presentation, processing and packaging of food.
 - In exceptional cases women can generate income of close to USD 100/week when selling in two separate markets. This figure is better than the minimum salary and shows that women can live well despite having a small plot of land. For example, the evaluation team interviewed a case where one woman in the province of Imbabura has a farm of only 350 m² (with spray irrigation), which enables her to generate USD 90/week by selling her products at the La Pachamama Nos Alimenta Fair and at the Cayambe Fair in Pichincha. The figure in appendix 12 shows the association of native crops and improved crops under the agroecological concepts with organic supplies developed with the project's support.
 - The systematisation report and analysis of the processes to monitor short channels shows that sales at the agroecological fairs of La Esperanza and of Saraguro (managed by the Agroecological School of Saraguran Women) increased by 17.3 percent from 2015 to 2016. When sales are broken down, it is found that the sales of agroecological products corresponded to 18.4 percent of total sales per person/week in La Esperanza and 8.9 percent in Saraguro (high and low areas of the fair).⁶²
 - The achievements are very substantial for the organisations and for the DAGs for three reasons. Firstly, agroecology shows that it is possible to earn more than the minimum salary (USD 375/month for 2017⁶³) through the sale of products from the farm that include agrobiodiversity products. Secondly, the associated production of crops in agrobiodiverse plots of land can generate substantial income despite having small plots of land of less than a hectare which is very substantial for food and nutritional security and the fight against poverty and rural hunger generally, in Ecuador. Third, the sale of products encourages the extension of agroecological practices to other crops with the aim of improving family health and contributing added value to such.

⁶² The other products are: traditional crops and the rearing of such; and small and large animals. At the agroecological fair La Esperanza they represented 26 and 55 percent of the total sales at the fair per person/week respectively; and in Saraguro they represented 18.9 and 68.3 percent respectively.

⁶³ Ministry of Employment: <http://www.trabajo.gob.ec/usd-375-sera-el-salario-basico-que-regira-en-el-2017/>

- The high level of participation of women also contributed to ensuring the equality of access to the goods and services of the project in accordance with FAO's third objective on gender equality. The evaluation found that women were the main recipients of the following goods and services, among others: a) the delivery of up to 30 local crops to develop agrobiodiversity in their farms; b) technical support for sowing crops, applying the correct space between fruit trees sown and in the use and maintenance of organic supplies; and c) the delivery of equipment and supplies to generate organic "bokashi" fertilisers with wooden beds and plastic sheets, micro-organisms and liquid fertiliser in plastic 120 litre containers which encouraged a group of women in Colta to produce these supplies for local sale as can be seen in the figure in appendix 12.
 - The delivery of equipment to promote short sales channels, particularly equipment supplied to support women selling at agroecological fairs, which include boxes, scissors, signs, canopies, tables, etc.;
 - The supply of equipment to establish and/or improve the BADC that are currently offering equality of access to farmers in the province of Imbabura;
 - The training geared towards teachers and students regarding induction to agrobiodiversity and agroecology or the preparation of bokashi and liquid fertiliser. For example, in Chimborazo of the 757 people trained, 393 are women, i.e. 52 percent.
93. With regard to the reduction of the workload by 20 percent by means of the introduction of technologies, services and infrastructure (FAO objective 4 concerning gender equality), the evaluation cannot give a specific response but managed to identify the following findings:
- Most women responded that they liked the development of agrobiodiversity and agroecology because they fulfil the various family farming needs, particularly fulfilling food and nutritional security and the opportunity to diversify their sales in the markets and local fairs;
 - Agrobiodiversity was developed above all in plots of land surrounding the home which results in a saving of time with regard to trips and of costs associated with fields and communal fields;
 - The preparation of organic supplies increases the work needed in the field in relation to the purchase of chemical supplies, but it is offset because the soil requires less maintenance and is easier to work. In addition, the use of liquid fertiliser can require more applications but fewer days are lost to illness and visits to the doctor (and saving of medical costs) for not using chemical insecticides and fertilisers;
 - The sale of more products in the markets and fairs increases the time and costs associated in reaching such but this is compensated by the opportunity to improve their own earnings and socialise with other women and customers. In Imbabura, women in Cotacachi also mention that husbands and companions treat them better when they generate income and this change can also include greater support for women in the field.
94. Lastly, as regards the project's negative impact on women, the evaluation found that women beneficiaries complained the project did not give them enough technical monitoring and that upon the closure of the project, after just one or two years of technical support, this was not going to enable them to consolidate the conservation and sustainable use of their agrobiodiversity, particularly in areas such as the

management of new pests, the improvement of the storage of seeds and the refreshment of seeds (particularly tubers).

3.5 Sustainability of the outcomes

Evaluation question 5: How sustainable are the outcomes achieved by the project at an environmental, social, financial and institutional level?

Finding 7. In accordance with the section for the assessment of the sustainability of the project's activities and outcomes (see appendix 7), the evaluation applies a rating of 3 because it is moderately unlikely that the project's activities can be sustained without additional resources, particularly to cover technical monitoring in the field. The sustainability of many activities geared towards the conservation and sustainable use of agrobiodiversity or the communications developed by the project depend, above all, on the approval of the regulation to implement the law on agrobiodiversity and seeds. Without these funds, there is no specific evidence that the MAG has the necessary funds or political will to strengthen its technical and organisational capacity as well as improve its coordination and communication mechanisms with the INIAP, other public institutions and peasant's organisations.

Finding 8. The highest external risks that put the sustainability of agrobiodiversity at risk are: the effects of climate change, economic instability, the high rotation of public staff and the lack of consumers who are aware of the benefits of agrobiodiversity and agroecological production. The catalytic effect of the project has been restricted to certain isolated activities where the peasants' organisations have been able to exchange experiences and replicate the activities they like. The project's impact could be significant in the case of the implementation of the law on agrobiodiversity and seeds, particularly in terms of progressing farmers' rights in the democratic process and in the scaling up of agrobiodiversity in the Andean mountainous and other regions.

3.5.1 Appropriation and institutional capacity

Commitments of the national and provincial governments to finance the conservation and sustainable use of agrobiodiversity

95. The sustainability of the activities performed with the peasants' organisations and their members strongly depends on the approval of the regulation to implement the law on agrobiodiversity and seeds, which has to clarify, among others, how a stable fund is going to be created and operated with public funding to promote agrobiodiversity. According to the INIAP, the proposal is to create this fund with up to one percent of the annual GDP (equal to almost USD 98 m. according to 2016 GDP). In such a case there is high probability that the INIAP/MAG could be geared towards resolving some substantial barriers that put the sustainability of the activities performed by the project at risk. In particular, the evaluation has identified the following barriers that must be resolved:

- The lack of internal skills within the MAG to be able to lead the research and promotion of agrobiodiversity in a coherent and coordinated manner. At present, the evaluation found that the institutional framework is weak because its departments tend to operate in an isolated manner;

- The need for a MAG policy and internal plan of action to stimulate the creation and training of the National Agricultural Authority as a permanent entity responsible for deliberating the application of the law on agrobiodiversity and seeds and that has to take on, among others: a) the training of specialists skilled in the conservation and sustainable use of agrobiodiversity (nationally and in the provincial departments), which includes the consolidation and scaling up of the BADC network and school gardens in the rural educational units; b) the training of specialists in establishing and applying, by means of the National Agrobiodiversity Board, a national seal geared towards certifying agrodiverse plots of land under the official PGS and preferably under two categories: national and international (to be able to promote internal consumption and the exportation of native crops); c) the division of work between the INIAP and the MAG with regard to the research and scaling up activities, particularly those relating to the quality control of seeds, the duplication and refreshment of seeds, the improvement in the storage of seeds and the development of local germplasm banks, the monitoring of data related to the performance of native crops and morphological, molecular and nutritional characterisation with the research centres and universities.
- The improvement of the coordination mechanism between the MAG and the MAE with regard to the implementation, monitoring and communication of the 2016-2021 plan of action of the NBS but also with other public institutions such as, for example, the Ministry of Public Health (MPH) with regard to promoting agrobiodiversity and agroecological production to improve public health and nutrition via the agricultural sector;
- The improvement of the coordination and collaboration mechanism between the MAG and the DAGs with regard to the promotion of: a) the conservation and sustainable use of agrobiodiversity in provinces such as Chimborazo where it is already contemplated and in other provinces where its integration has to be promoted and its development has to be facilitated; b) agroecological fairs with the cantonal DAGs that already have ordinances and in others where they are still not receiving support; and c) the communication strategy to promote the exchange of information and knowledge about agrobiodiversity in the Andean area and other regions.

Commitments of the INIAP to maintain a close relationship between the *in situ* and *ex situ* conservation of agrobiodiversity and farmers, and promote farmers' rights

96. The project was instrumental in scaling up awareness within the INIAP about the important role that family farming plays in conserving native varieties and their wild relatives. This awareness has generated new recognition in the INIAP, and in the DENAREF in particular, that to sustain *ex situ* conservation of their germplasm it is essential to work closely, and on an ongoing basis, with farmers concerning the *in situ* conservation of plant genetic resources, particularly those plant genetic resources whose properties require conservation in the farms of such farmers (particularly certain varieties of tubers). This recognition also enabled the INIAP to value the importance of bio-knowledge of farmers and of their native technologies.

97. However, the INIAP has had to face cutbacks in its roles, which includes passing responsibility for technological transfer on to the MAG, and in its budget, particularly since the start of the economic crisis in 2016. This situation has restricted opportunities for the INIAP to maintain close relations with peasants' organisations and the DAGs. According to the INIAP, the approval of the aforementioned regulation to implement the law on agrobiodiversity and seeds is considered essential for consolidating and scaling up its relations with farmers. Consequently, the approval of said regulation and the creation of the government fund for agrobiodiversity is considered very important to ensure the continuity of key services that include, among others:

- The promotion of ordinances in favour of the conservation and sustainable use of agrobiodiversity and its role in ensuring the food security and sovereignty of the family farmer;
- The rescue, research and *in situ* conservation of native crops with a view to reinforcing the adaptation of the effects of variations in climate and of climate change;
- The monitoring and scaling up of the BADC, together with programmes to refresh seeds in the BNG;
- To encourage and support universities and research and nutrition centres to support the conservation of plant genetic resources and participate in the morphological, molecular and nutritional characterisation of the accessions registered with the BNG;
- The production of improved seeds of native varieties and their distribution to peasants' organisations and other stakeholders;
- The promotion and defence of farmers' rights, in particular their participation in the distribution of benefits within the multilateral system of the ITPGRFA.⁶⁴
- The development of its own communication strategy coordinated with the MAG, MAE and MPH with the aim of convincing decision-makers about the decision to make policy reforms and prioritise resources to protect the centres of origin and key areas of agrobiodiversity;
- The organisation of international events and events with the Andean region to promote joint research and cross-border cooperation.

3.5.2 Environmental sustainability and appropriation by the beneficiaries

98. The evaluation found that the vast majority of farmers interviewed showed clear evidence that they are committed to continuing with the conservation and sustainable use of agrobiodiversity because it enables them to fulfil many needs simultaneously. These needs are focused on maintaining food security and sovereignty through the production of crops where they themselves monitor the reproduction of seeds, healthy production (without chemicals) and the generation of financial income by selling products produced following agroecological concepts.

⁶⁴ It is worth mentioning that the INIAP has reservations about continuing to participate in the multilateral system because it has not yielded the distribution of benefits expected despite over 10 years of operation of the ITPGRFA benefits Distribution Fund.

99. However, the evaluation also found that the sustainability of their agrodiverse plots of land will be precarious in the coming years as a result of the following findings:

- The project did not establish an agreement between the Heifer Foundation and the DAGs with ordinances and/or LUDPs to promote the conservation of agrobiodiversity and continue hiring the project's six local promoters. Indeed, the evaluation received a lot of complaints from farmers, their organisations and the promoters themselves regarding the closure of the monitoring services by the promoters in October 2017;
- A high number of farmers have not managed to perfect their seed storage and selection skills. For example, the evaluation found that the presence of insects or fungi in the seed storage puts the productivity of these seeds at risk;
- Farmers, in the majority of cases, had not been trained in monitoring their agrodiverse plots of land in order to make progress with their adaptation to the effects of variations in climate and of climate change (through the registration of data concerning the performance of the native crops grown) and/or guide the production of local crops for sale;
- Farmers do not hold written information about the production and sale of seeds and fresh and/or semi-processed crops;
- Agroecological fairs are not generating the necessary funds to sustain their activities;
- The MAG did not manage to establish the national seal to encourage the development of agrobiodiversity and permanent commercial spaces;
- The ecosystems are being threatened with the scaling up of the agricultural border based on monoculture systems and the contamination of water by agrochemicals and the lack of management of solid and liquid waste.

3.5.3 Social sustainability

Institutional capacity and communication to pursue dialogue about the promotion of agrobiodiversity and the lessons learned

100. At national level, the project enabled ongoing communication about the application of the law on agrobiodiversity and seeds and the promotion of specific crops mentioned in 3.2.3 above. However, the evaluation made the following observations about the sustainability of this communication:

- The Andean Network of Quinoa Producers: no ongoing mechanism was identified with a financial instrument to promote and monitor the Network's activities;
- The Parliamentary Front against Hunger in Ecuador "Ecuador sin Hambre": facilitates the exchange of experiences and information about the effects of climate change in Ecuador, the challenges for agriculture and the activities being performed to mitigate these effects on agriculture. However, it is not evident that any notification was sent to decision-makers about the importance of explicitly mainstreaming agrobiodiversity in Ecuador's 2012-2025 National Climate Change Strategy (NCCS), in particular the section on food sovereignty, agriculture, livestock farming, aquaculture and fisheries (section 4.1.1);
- The Regional Research Network of Chocho or Tarwi: is designed to propose new lines of research about this crop, but as it is a voluntary network composed of researchers it is not clear how it will influence decision-making at national and

international level to promote public policies geared towards strengthening and developing the research into such;

- The systematisation of the Regional Dialogue International Year of Pulses enables participants to take stock of the topics discussed at the event, but there is no evidence of reporting the importance of promoting the certification of the centres of origin of the Andean pulses to decision-makers, or of reporting the importance of their conservation in the BADC and at the level of the farmers' farms.

101. At the level of the DAGs and peasants' organisations, the evaluation did not identify the establishment of a communication strategy designed to implement the ordinances and/or food sovereignty and continue with the activities performed after the closure of the project. On the one hand, no specific agreements have been established between the provincial departments of the MAG and the peasants' organisations involved in continuing the monitoring and communication about the consolidation and scaling up of the conservation and sustainable use of agrobiodiversity, or the development of the PGS and national seal. Consequently, communication depends on individual wishes and ad hoc mechanisms in the provinces because, except for Chimborazo, the political commitment is geared towards continuing with the promotion of agricultural kits or the development of agroecology which is geared towards the production of improved crops without chemicals.

102. On the other hand, cantonal DAGs showed that there is a political commitment to encouraging, consolidating and/or scaling up agroecological fairs but there are not enough funds or internal skills to promote them with a communication strategy that is very focused and supported by the provision of the necessary infrastructure and equipment. For example, the cantonal DAG of Saraguro informed the evaluation that it could only invest approximately USD 5,000 in the development of the agroecological fair.

103. The lack of field files kept by farmers to analyse the performance of their agrodiverse plots of land, identifying good practices and determining lessons learned have not facilitated the development of communication at peasant-peasant and peasant-organisation level, in order to communicate the good practices and benefits of agrobiodiversity to the DAGs and the MAG. According to data collected by the evaluation in the three provinces, there is evidence that the introduction of native crops and organic supplies has produced positive and sustainable outcomes (provided that there is technical monitoring). For example, a focus group interviewed in Guamote⁶⁵, provided the following anecdotal information:

- An improvement in the performance of all of the crops introduced with the project's support compared to the traditional crops used previously. In particular, the performance achieved through the introduction of more native varieties of crops with only organic supplies contributed towards improving the food and nutritional security of more than 39 families. For example: a) *Oca* (two varieties) that were not produced before achieved outputs of 100 pounds with 1.5 pounds of seeds; b) Potatoes (four varieties) had outputs of up to 400 pounds with 10 pounds of seeds; c) *mashua* (two varieties) achieved outputs of 150 pounds with

⁶⁵ The Galte Bisnag community, in the high Andean region

1.5 pounds of seeds; and d) barley (three varieties) achieved outputs of 200 pounds with 20 pounds of seeds.

- The native crops produced had a better flavour and the native potatoes cooked more rapidly, which confirmed a substantial incentive to continue producing these varieties;
- The preparation of organic supplies is sustainable because it is more economical than buying chemical supplies and the applications are easier to maintain. For example, you can apply liquid fertiliser at any time which is not the case with chemical insecticides.

104. At the level of micro-enterprises, the evaluation found that the company COPROBICH can sustain its quinoa processing activities. For example, it has a directory of people trained in business management and has established buyers and markets that include foreign markets. In other cases, the evaluation has less evidence that micro-enterprises can be sustained due to the fact that it did not identify specific markets and buyers and has very limited financial resources to cover its promotion and maintain its liquidity.

3.5.4 External risks to sustainability

105. In accordance with the PIR of 2016, the evaluation identified the effects of climate change (particularly variation in climate) as the highest risk to the sustainability of agrobiodiversity. In addition, as mentioned in this report, the project did not place emphasis on the role that agrobiodiversity can play in strengthening family farming's adaptation to climate change and, consequently, in ensuring food sovereignty and security and the improvement of farmers' health and diet. To date this concept has also not been incorporated into the NCCS (see 3.5.1. above). Although the evaluation accepts that the Prodoc's focus was not on adaptation to climate change and, consequently, it was not obligated to promote agrobiodiversity as a measure to ensure food and nutritional security and sovereignty, it is evident that the project did not contribute towards making progress with this point so that the country can establish the appropriate capacity to manage this risk at national and local level.

106. Another high risk that could affect the continuity and scaling up of agrobiodiversity is the country's economic instability, which was identified as a "new risk" in the 2016 PIR. The approval of the Regulation to implement the law on agrobiodiversity and seeds constitutes an important measure to mitigate this risk in the event it manages to establish the permanent national fund to promote agrobiodiversity research and development. However, this fund would not be a panacea because it does not alter the risks associated with the budget cuts of the MAG in general, which can reduce opportunities for fulfilling essential services such as the scaling up, technical monitoring and development of an effective communication strategy geared towards different groups. The evaluation believes that this risk is difficult to mitigate at this time taking into consideration that the aforementioned regulation implementing the Law has not been approved yet, as well as the internal fragmentation of the MAG.

107. Two other risks classified as high by the evaluation are the high rotation of public staff that could affect the continuity of the project's activities and the lack of consumers aware of the benefits of Ecuadorian agrobiodiversity in order to increase the demand for native and agroecological crops.

3.5.5 Catalytic effect of the project and its potential long-term impact

108. The evaluation did not identify specific evidence that the project had had a high catalytic effect to date. The division of the areas of intervention in four provinces did not facilitate the catalytic effect especially as there were no field visits at an interprovincial level to observe and promote innovation. At a provincial level, it was found that there were some very specific cases where the project's activities resulted in replications. For example:

- The promotion of agrobiodiversity and the agroecological fair in Cotacachi was an incentive for the DAPLE to renovate its own agroecological fair La Esperanza;
- The educational units trained in the educational guide have been catalysers in terms of motivating teachers to establish school gardens and scale up the exchange of seeds between residents and friends in the community.
- The preparation of organic supplies has encouraged at least one group of women to establish their own organic supplies business for local sale, which has started to generate financial income (see the figure in appendix 12). Interviews with CEDEIN confirmed that they are producing micro-organisms that will also eventually be for sale.

109. Regarding the project's potential impact, the perspectives of a positive impact depend on the approval of the regulation implementing the law on agrobiodiversity and seeds. In this case, there will be new opportunities to increase investment in agrobiodiversity and the promotion of organic agriculture, involving a scaling up of agrobiodiversity in the Andean mountainous region and, possibly in the Amazon and coastal region. In addition, as the law promotes the protection of farmers' rights it is possible that there will be a positive impact on the democratic process as well as on the reduction of poverty and hunger.

4. Lessons Learned

110. In terms of the needs and priorities that still have to be covered in Ecuador to promote and develop agrobiodiversity, the evaluation identified the following lessons learned:

Lesson learned 1: Agrobiodiversity plays an important role in improving family diet and, consequently, is directly linked to improving public health.

Lesson learned 2: Agrobiodiversity can support farmers in adapting to the effects of climate change, which is essential for ensuring food and nutritional security in the medium and long term of small-scale farmers and their marginal rural communities.

Lesson learned 3: Agroecological production is not a synonym of agrobiodiversity but a method for sustaining the production of agrobiodiverse plots of land where it is possible to grow native or improved crops and promote added value at the same time. Improved crops must not include genetically modified organisms, as possible crosses between the genes of native crops and genetically modified organisms risk genetic erosion in the farm.

Lesson learned 4: The training and employment of local bilingual promoters (Spanish and Kichwa) constitutes an efficient and effective method to promote and monitor activities concerning the conservation and sustainable use of agrobiodiversity with the farmers and their organisations. However, the projects ought to promote their involvement in a frequent manner and not only as suppliers of specific services.

Lesson learned 5: When promoting the production of agroecological crops for the fairs, it would be important to include the training of promoters and farmers in calculating the economic, social and environmental outputs of agrobiodiversity as this would enable farmers to be able to make informed decisions and promote learning at family and inter-family level.

Lesson learned 6: The production of agrodiverse plots of land under agroecological practices can generate net benefits of up to USD 100/week (when there is drip/spray irrigation), and this shows that smallholdings can generate economic income that is higher than the country's minimum salary.

Lesson learned 7: Teachers who established the school gardens visited used them effectively to promote interactive education, children's diet and the promotion of income by means of the sale of seeds, crops and meals to parents of the families. This confirms the relevance of schools and the approach of school gardens as channels to promote agrobiodiversity.

Lesson learned 8: The duration of the projects that aim to promote the conservation and sustainable use of agrobiodiversity and improve income by means of the development of short sales channels and the promotion of micro-enterprises requires a period that adapts to the needs of the beneficiaries⁶⁶. A detailed analysis of these

⁶⁶ In some cases, it is not possible to establish, consolidate and/or reintroduce seeds or promote companies in just three years, and in some cases this can cause disappointment among farmers and

needs before designing the project can help to determine the duration and the approaches most appropriate to the context of such.

Lesson learned 9: Projects funded by the GEF and executed by FAO require the coordinators to establish the process of dialogue and constant reflection on the effectiveness, efficiency and sustainability of the project's main activities.

even increase their debt due to the purchase of materials and equipment that they do not know how to reproduce/maintain.

5. Conclusions and recommendations

5.1 Conclusions

111. Taking into consideration the main findings related to the questions and criteria of this final evaluation, the following conclusions can be reached:

Conclusion 1 (general - overall rating satisfactory). The project managed to demonstrate that the conservation and sustainable use of agrobiodiversity under agroecological practices can fulfil multiple family farming needs that include ensuring food sovereignty and security, improving human health (physical and mental) and diet, establishing a healthier environment, recuperating ancestral customs and identity and offering new opportunities to sell products that have high nutritional value to the consumer. Consequently, the general conclusion is that the application of agrobiodiversity under agroecological, participatory and inclusive concepts, offers the opportunity to fulfil the "Sumak Kawsay" which, according to the indigenous principle, means "good living".⁶⁷ For the Ecuadorian government, the GEF and FAO, it can also be concluded that the project has shown that agrobiodiversity contributes towards fulfilling not only their priorities and objectives but also towards fulfilling several Sustainable Development Goals (SDG) while demonstrating that the conservation and sustainable use of agrobiodiversity is a holistic and sustainable practice. In particular it fulfils:

- SDG 1: The reduction of rural poverty
- SDG 2: The elimination of hunger/malnutrition
- SDG 3: Good health and living well
- SDG 4: Gender equality
- SDG 6: Cleaner water due to reducing chemical supplies
- SDG 8: Develop the rural economy and reduce migration
- SDG 12: Contribute towards developing responsible consumption
- SDG 13: Facilitate adaptation to climate change to protect food security
- SDG 15: Conserve plant genetic resources *in-situ*⁶⁸

Conclusion 2 (project design). The project's design was too ambitious taking into account that it only lasted three years which is a short time to complete programmes designed to produce, scale up and refresh seeds (particularly tubers). In addition, extensive institutional changes were made from the design to the start of operations that contributed to losing almost one year of work. The implications of this (particularly the reduction of the operational phase to around two years) were not adequately addressed by the Steering Committee and FAO which indicates that the communication mechanisms were not effective in deciding whether an extension and additional financial resources were justified.

Conclusion 3 (relevance – highly satisfactory). The evaluation concludes that the project had a well-defined intervention strategy to fulfil its first two specific objectives (components 1 and 2). It was evident in the Prodod that component 1 was aligned with

⁶⁷ The Confederation of Indigenous Nationalities of Ecuador (CONAIE) specifies that "Good living" means "a full life in harmony with other people and Mother Earth": <https://conaie.org/2017/05/19/practicas-pueblos-y-nacionalidades/>

⁶⁸ The evaluation includes the conservation of local knowledge linked to these resources.

the country's political processes concerning acknowledging and mainstreaming agrobiodiversity in the country's legal and strategic framework. Equally, it ties in with the GEF's priorities (in particular BD2 and BD4) and FAO's strategic objectives (in particular Strategic Objective 2). It also aims to contribute to the fulfilment of relevant international agreements such as the Aichi Targets of the Convention on Biological Diversity, and make progress with farmers' rights in accordance with the ITPGRFA. Component 2 clearly stated the importance of underlining the conservation and sustainable use of agrobiodiversity in the DAGs and peasants' organisations to promote and support farmers in benefiting from agrobiodiversity and the promotion of agroecology. The evaluation rates component 3 as moderately unsatisfactory because it did not emphasise the importance of establishing a communication strategy based on monitoring outcomes, managing risks to generate "early warnings" and synergies with other relevant programmes and projects. In particular, it does not establish a synergy with the GEF's PROMAREN project in the province of Chimborazo.

Conclusion 4 (effectiveness - satisfactory). The evaluation concludes that the project was highly effective due to fulfilling the vast majority of the targets and objectives of components 1 and 2 of the project. With regard to component 1, the project facilitated the pre-legislative process of the law on agrobiodiversity and seeds, which was passed and registered in June 2017. The law represents a strategic milestone for family farming and includes provisions to protect farmers' rights and create a permanent government fund to promote the research and development of agrobiodiversity in the country. In addition, it was instrumental in mainstreaming agrobiodiversity in the Plan of Action of the NBS, in the LUDP of Chimborazo, and in cantonal ordinances in Guamote, Saraguro and Pedro Moncayo.⁶⁹ With regard to component 2, the project was instrumental in collecting and registering 494 accessions of native varieties and their wild relatives of 17 crops in the Andean region and created a database of 546 seeds from Chimborazo, Imbabura and Loja. Three BADC were also established, of which one is linked to the INIAP and one university in Imbabura, and the other to the DAG of Chimborazo. In total, 4,509 farmers and promoters participated in training linked to the conservation and sustainable use of agrobiodiversity, the application of PGS and the development of short sales channels, particularly the development of agroecological fairs in all cantons. The evaluation found that the agroecological fairs are contributing to an increase in the weekly incomes of farmers that in a few cases reaches USD 100/week, which is higher than the minimum salary of USD 375/month.

The evaluation rates the fulfilment of **component 3** as **moderately satisfactory**. At a national level, the project did not achieve its outcomes to develop convincing communication geared towards different groups to mainstream agrobiodiversity in the relevant policies, strategies and plans. In contrast, it dedicated itself to educating and raising awareness among decision-makers via a series of isolated activities such as events, the creation of voluntary networks and systematisations. At a provincial/cantonal level communication was more effective. In particular the project managed to raise awareness among 1,490 teachers and students resulting in the establishment of at least three school gardens. These gardens were highly valued by the teachers and students and are very effective at enhancing communication about the benefits of agrobiodiversity and the preparation of organic fertilisers to the parents of the families and the local community in general.

⁶⁹ Pending approval at the time of evaluation

Conclusion 5 (efficiency – moderately unsatisfactory). At national level, the decision to change the management of the project from OPIM to DIM caused a rupture in the project's management that took almost a year to resolve. As a consequence, it was not possible to perform activities under component 2 until the second half of 2015. In particular, it was difficult to execute the LoA with the Heifer Foundation, which, despite assuming the role of service provider, held a position in the Steering Committee which ended up being judge and defendant in relation to decision-making. The management of the project was also not guided by an internal system to monitor outcomes and manage risks, to develop efficient planning and implementation. On the one hand, the monitoring and management of risks focussed on preparing the reports required by the GEF and FAO instead of stimulating the internal reflection of the Steering and Technical Committees. On the other hand, the project did not establish sufficient coordination mechanisms to facilitate said reflection on the outcomes, lessons learned and good practices to replicate. As regards cost-efficiency, the project had a lot of difficulty monitoring the logistical costs. In part, the INIAP and the Foundation did not have the vehicles and specialists necessary to facilitate field visits and meetings. Given that the GEF's rules prohibit the purchase of vehicles, the project had to cover high expenses in relation to the frequent hiring of vehicles. On the other hand, the project had to cover a very wide area of intervention encompassing very diverse cantons and provinces. However, the decision to sign a total of 19 partnership agreements between the Heifer Foundation and peasants' organisations and associations in the four provinces, together with the employment of local promoters, contributed towards reducing the costs associated with the activities performed in the communities involved.

Conclusion 6 (Inclusivity and participation - satisfactory). The evaluation concludes that the project managed an effective participation of the stakeholders in the four provinces. It was found that during the identification and design of the project, the INIAP and the Heifer Foundation consulted with a wide range of stakeholder representatives beforehand. The entry into association agreements with 19 peasants' organisations and associations instead of the 7 set forth in the Prodoc resulted in exceeding the planned number of participating farmers by around 709 people. The employment of three bilingual promoters, two of whom are indigenous, facilitated the inclusive participation of Kichwa-speaking men and women as well as their recognition as ancestral knowledge holders which was important for performing the harvests and for monitoring field activities. The high participation of indigenous men and women, as well as alliances with indigenous leaders in some DAGs also contributed towards applying the equality of access to the equipment, material and seeds distributed by the project.

Conclusion 7 (gender equality – highly satisfactory). The evaluation concludes that the project has incorporated gender equality in accordance with FAO's objectives in the design and **implementation** of the project. The participation of women in the field activities exceeded the Prodoc's targets. According to project data, 70 percent of the 4.509 total beneficiaries are women. With regard to access to employment and the generation of income, it was found that the vast majority of people who received support to form part of short sales channels (particularly agroecological fairs) are women. Their high participation in these fairs made it possible not only to generate, in many cases, economic income for the first time, but also increase their self-esteem. A study of agroecological fairs in La Esperanza and Saraguro confirms that they have contributed towards increasing sellers' annual incomes by 17.3 percent from 2015 to 2016. As regards

the workload, it is observed that the implementation of agrodiverse plots of land and the preparation of organic supplies around the farm saves women time and resources. However, the application of organic supplies and the handling of agrobiodiversity increases the daily workload. According to the women, this problem is compensated by the multiple benefits that agrobiodiversity offers them.

Conclusion 8 (sustainability – moderately unlikely). Despite the approval of the agrobiodiversity law and its promotion via the NBS, the provincial and cantonal ordinances and the producers' high interest in consolidating and scaling up agrobiodiversity, future research and support for agrobiodiversity depend a lot on the regulation to implement the law on agrobiodiversity and seeds being passed. The Regulation will, among others, define how the fund to be created for agrobiodiversity will work. If the Regulation is passed with 1.0 to 0.5 percent of the country's annual GDP to create and maintain the stability of the fund, it is likely that there will be sufficient resources to apply the law. In the event of a lower percentage, the scope will have to be reduced and it is unlikely that agrobiodiversity will be promoted on a national scale. It is observed that the project did not manage to establish a communication strategy to promote the approval of this regulation before its closure in October 2017. Indeed it is unlikely, according to the evidence available, that the project's communications are sustainable post-project as there is no mechanism or budget established to update, strengthen and broaden them. This situation has not triggered the catalytic effect of the main activities that, furthermore, have had to operate separately from one another due to the geographic divisions of the project's areas of intervention. However, it was determined that there has been a catalytic effect in cases where farmers had the opportunity to observe the activities in person and then replicate them, as has been the case with the preparation of organic supplies. With regard to the project's potential impact, the evaluation believes that it is likely to be moderate if the Regulation is passed and the creation of an agrobiodiversity fund with the aforementioned percentages is approved. This opinion is justified because there are currently barriers that must be addressed to ensure the proper performance of the research and development of agrobiodiversity. The main barrier is posed by the lack of agronomists trained to promote farmers' rights, agrobiodiversity, agroecology, the monitoring of production, harvest, post-harvest, sales, etc.

5.2 Recommendations

112. The recommendations of strategic and operational interest have been prepared for consideration in the programming of future projects:

Strategic recommendations

For FAO (HQ and FAO Representation in Ecuador)

Recommendation 1. Devising the conservation and sustainable use of plant genetic resources under agroecological concepts is recommended, not only to ensure food security within family farming but also to promote sustainable rural development to support the fulfilment of the Sustainable Development Goals.

Recommendation 2. Developing a communication strategy that raises awareness of the contribution of agrobiodiversity in a more holistic manner and that makes it possible to insist that relevant policies, strategies and plans be updated, is recommended.

Recommendation 3. Resuming the legal process for the approval of the regulation to implement the law on agrobiodiversity and seeds, is recommended, alongside the establishment of the National Agricultural Authority, which would facilitate political dialogue on the reforms to apply at an institutional and political level, concerning the promotion and development of agrobiodiversity, particularly in terms of family farming.

For the FAO Representation in Ecuador

Recommendation 4. Continuing to support the MAG in training experts on the conservation and sustainable use of agrobiodiversity, in order to bolster interest and ensure the appropriate implementation of holistic programmes, is recommended.

Operational Recommendations

For FAO (HQ and FAO Representation in Ecuador)

Recommendation 5. It is recommended that projects of this nature should be designed to have an inception phase of around three to six months, in line with the agricultural season, to: a) accommodate possible political, institutional, social, or environmental changes; b) complete/update the socio-economic and environmental diagnosis in order to establish the baselines and adapt the targets if justified, together with the budget; and c) clarify the stakeholders' responsibilities. Similarly, including a closure phase (of at least three and no more than six months) is recommended, in order to clarify the continuity of the main activities after the closure of the project.

For the GEF and FAO (HQ and FAO Representation in Ecuador)

Recommendation 6. It is recommended that future projects include "Field Files" designed to gather information about the production and productivity of the different crops handled, production costs, gross and net income from the sale of products at the markets and fairs, etc., in order to enter them in the financial systems.

Suggestion:

To facilitate this process, new projects funded by the GEF could assign funds in order that the coordinators of their projects have an expert in charge of monitoring the results and operations.

6. List of Annexes

Published separately and only in Spanish at www.fao.org/evaluation/

Annex 1. Appendices

Annex 2 to the three GEF project evaluations GCPECU080GFF, GCPECU082GFF and GCPECU086GFF (Ecuador) – Integrated recommendations on strategic areas and approaches

Annex 3. Terms of Reference

