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# ENVIRONMENTAL COMPLIANCE REVIEW

September 2020

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# ABSTRACT

This study reviews the level of compliance with the environmental mitigation measures contained in the Environmental Monitoring and Mitigation Plans of three USAID projects: Alliance for Digital and Financial Services (CR3CE Alliance), Coffee Alliance for Excellence (CAFE) and Peru Cacao Alliance - Phase II, which are implemented in the regions of San Martín, Huánuco and Ucayali. Environmental mitigation measures are established according to regulations in Peruvian legislation and USAID. The study applied quantitative and qualitative methods to obtain answers to the different questions raised. Results show that the levels of compliance with environmental measures are different for each project and the level reached is accounted for by different institutional, economic, cultural and contextual factors, which facilitate or limit compliance. Recommendations are provided for each project, organized and aimed at different stakeholders, such as the alliances, USAID and the Peruvian Government.

# RESUMEN

El estudio analiza el nivel de cumplimiento de las medidas de mitigación ambiental de los Planes de Monitoreo y Mitigación Ambiental de tres proyectos de USAID: Alianza para Servicios Digitales y Financieros (Alianza CR3CE), Alianza para la Excelencia en Café (CAFE) y Alianza Perú Cacao – Fase II, los cuales se implementan en las regiones de San Martín, Huánuco y Ucayali. Las medidas de mitigación ambiental son establecidas de acuerdo con las regulaciones de la legislación peruana y de USAID. El estudio aplicó métodos cuantitativos y cualitativos para obtener respuestas a las diferentes preguntas formuladas. Los resultados muestran que los niveles de cumplimiento de las medidas ambientales son diferentes para cada proyecto y el nivel alcanzado se explica por diferentes factores de índole institucional, económico, cultural y contextuales, que facilitan o limitan el cumplimiento. Se presentan recomendaciones organizadas para cada proyecto y orientadas a diferentes actores, como son las alianzas, USAID y el Gobierno Peruano.

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# ACRONYMS AND ABBREVIATIONS

AOR/COR	Agreements Officer / Contracting Officer's Agent *
ARA	Regional Environmental Authority
BEO	Environmental Officer of the Bureau for Latin America and the Caribbean *
CEDRO	Information and Education Centre for Drug Abuse Prevention
AD	Alternative Development
DEVIDA	National Commission for Development and Life without Drugs
ECR	Environmental Compliance Review *
EMMP	Environmental Monitoring and Mitigation Plan *
GOP	Government of Peru*
IP	Implementing Partners
INIA	National Agricultural Innovation Institute
MELS	Monitoring, Assessment and Learning for Sustainability *
MEO	Mission Environmental Officer *
MINAGRI	Ministry of Agriculture and Irrigation
MINAM	Ministry of the Environment
EMMP	Environmental Monitoring and Mitigation Plan
UNDP	United Nations Development Program
REO	Environmental Officer for the South American Region *
SENASA	National Agricultural Health Service
USAID	United States Agency for International Development *

\* English acronym

# EXECUTIVE SUMMARY

USAID's Alternative Development Program is implemented in the regions of Huánuco, Ucayali and San Martín and includes the Peru Cacao Alliance (implemented by Palladium), Coffee Alliance for Excellence (CAFE) (implemented by TechnoServe), Alliance for Digital and Financial Services - CR3CE (implemented by CEDRO) projects and the Government to Government Agreement "Operational Plan for Institutional Strengthening" (PORI) with DEVIDA. These implementing partners carry out environmental mitigation actions through annual Environmental Monitoring and Mitigation Plans (EMMP) and annual internal Environmental Compliance Review (ECR) studies according to USAID Regulation 216 and the requirements of Peruvian environmental legislation. In addition, USAID conducts external ECR.

This study includes the Peru Cacao Alliance - Phase II, the Coffee Alliance for Excellence (CAFE) and the Alliance for Digital and Financial Services (CR3CE Alliance) projects and their Environmental Mitigation Measures Plans corresponding to the October 2018 to September 2019 period.

The EMMP of the CR3CE Alliance proposes actions aimed at mitigating the potential impacts on the environment in the execution and operation phases of Yachay, such as the installation, reinforcement and maintenance of lifting towers, installation and maintenance of ground wells and the replacement of part or all of the electronic equipment.

The EMMP of the Coffee Alliance proposes mitigation actions to prevent possible environmental impacts resulting from coffee cultivation such as: use of agrochemicals, water contamination from coffee processing, and soil erosion. It promotes agroforestry systems as a mechanism to avoid deforestation.

The Peru Cacao Alliance proposes in the EMMP actions to mitigate the possible environmental impacts of the different cacao farming activities, such as the selection of the land for farming, land preparation, nursery establishment, final field establishment, soil management and conservation, crop management, harvesting and post-harvest.

## EVALUATION PURPOSE AND QUESTIONS

The environmental compliance review of the Alternative Development (AD) program aims to analyze the level of compliance and recommendations for improvement of the EMMPs of the Alternative Development activities implemented by the following partners: Peru Cacao Alliance/ Palladium, Coffee Alliance for Excellence (CAFE)/ Technoserve and CR3CE Alliance/ Cedro. The study will also focus on options and suggestions to increase successful compliance with environmental measures. The evaluation questions were the following:

1. What is the level of compliance with the mitigation measures presented in the EMMP?
2. Which factors facilitate or hinder compliance with the mitigation measures in the EMMP?
3. Which alternatives contribute to increasing the level of compliance with the mitigation measures in the EMMP?
4. To what extent can stakeholders contribute to a higher level of compliance with mitigation measures in the EMMP?

## METHODOLOGY

The study applied a mixed methodology combining quantitative and qualitative methods. It used the survey technique and applied it to a sample of coffee producers and a sample of cacao producers in the areas of Ucayali, Huánuco and San Martín. The survey was structured and included questions that allowed for data to be collected on knowledge and practices related to environmental measures.

The qualitative techniques used were a) documentary review, b) in-depth interviews with community leaders from each of the regions in the project area, and the technical team responsible for implementing the project in Lima and the intervention areas, c) focus groups with producers of each crop in the intervention area d) non-participatory observation of the telecenters and lifting towers and e) interviews with local and municipal governments.

Data collection instruments were developed for each technique and reviewed and validated with the implementing institutions.

## FINDINGS

### ALLIANCE FOR DIGITAL AND FINANCIAL SERVICES (CR3CE ALLIANCE)

1. Compliance with the environmental mitigation measures of the Environmental Monitoring and Mitigation Plan for lifting towers and relay masts stands at different levels: location 100%, reforestation 85.1%, signposting 80.7%, maintenance 77.9%, solid waste 75.3%, and ground well 53.2%.
2. The highest level of compliance with EMMP environmental mitigation measures in the telecenters lies in compliance with energy efficiency and water use, standing at 73.8%, followed by solid waste management which reached a 64.7% compliance level. The lowest level of compliance was observed in the ground well sector, which attained 51.5% compliance.
3. Institutional factors restrict compliance with environmental mitigation measures.
4. The institutions liable for compliance with environmental mitigation measures are the municipalities and Yachay as they are directly responsible for the telecenters, lifting towers, and relay masts.
5. There are differences in stakeholders' involvement level in terms of compliance with environmental measures.

### COFFEE ALLIANCE FOR EXCELLENCE (CAFE)

6. The average compliance with the EMMP environmental mitigation measures of the Coffee Alliance project in each of its five areas stands above 60%. The measures associated with water source conservation and reforestation and erosion control measures show the highest compliance level, 76% and 70%, respectively.
7. The existence of various institutions working on environmental mitigation measures facilitates compliance with environmental measures. However, the high costs of organic fertilizers, certain beliefs, and the vague wording of the EMMP are factors that hinder compliance therewith.

8. Field training strategies and individualized technical assistance show better results in terms of compliance with environmental measure.
9. The mitigation measures in the EMMP are hardly known by government stakeholders.
10. Women show a greater commitment than men concerning compliance with environmental measures because they relate it to family care.

## PERU CACAO ALLIANCE - PHASE II

11. Average compliance with environmental mitigation measures achieved an implementation level above 50%. The measures with the greatest progress are associated with pesticide use and management (90%), while harvest, post-harvest and storage, and reforestation and erosion control had a relatively lower compliance.
12. Various institutions address environmental care in the area of intervention that fosters compliance with EMMP, but there are also elements that hinder compliance such as the high cost of organic fertilizers and pesticides, beliefs and the complexity of EMMP.
13. Training farmers contributes to knowledge of environmental measures and their compliance, but it requires practical planning and field work, as well as community involvement.
14. There are different stakeholder views on the progress of the implementation of the environmental mitigation measures of the Cacao Alliance.
15. Women are more committed to the implementation of environmental measures than men because they relate it to family care. In addition, they participate in the entire production process.

## CONCLUSIONS

### ALLIANCE FOR DIGITAL AND FINANCIAL SERVICES (CR3CE ALLIANCE)

1. In the level of compliance with the environmental mitigation measures established in the Environmental Monitoring and Mitigation Plan of the CR3CE project, some differences can be found, between the telecenters, lifting towers, and relay masts. These differences are because the administration of the telecenters and lifting towers are not the responsibility of the CR3CE Project. Instead, the municipalities and Yachay administer the telecenters and there is no control over the lifting towers.
2. The major obstacles for compliance with the environmental measures of the CR3CE Alliance are of an institutional nature, as CEDRO is not responsible for the administration and maintenance of the telecenters, the lifting towers, and the relay masts. CEDRO does not have the mandate to sanction non-compliance with the environmental mitigation measures. The Environmental Monitoring and Mitigation Plan does not reflect the degree of responsibility CEDRO has for the noncompliance of the environmental measures subscribed. CEDRO has played a role in raising awareness within the municipalities and Yachay.
3. The content of the EMMP is not a document that facilitates compliance with the environmental mitigation measures. The 20 measures are written in a general manner, without identifying any specific indicators, goals, or parties responsible. In addition, some are not relevant for the area.

## COFFEE ALLIANCE FOR EXCELLENCE (CAFE)

4. The level of compliance with the environmental mitigation measures of the EMMP of the Coffee Alliance project is, on average, above 60%, because there are factors that contribute to compliance of the measures. These factors include the presence of governmental organizations and private companies that converge in actions to mitigate the environmental impact, as well as further the development of strategies that support greater knowledge and adequate practices for environmental mitigation (training, women's participation, the UNICA savings system, and the validation of coffee varieties). The factors that hinder compliance with the measures are mostly economic, due to the high cost of the inputs of organic fertilization and to a lesser extent, the presence of some beliefs. One example is related to pruning being detrimental to overall productivity.
5. One of the obstacles to compliance of the measures is the Environmental Monitoring and Mitigation Plan itself, which is written in a general manner, making it difficult to assess and measure compliance with the environmental mitigation measures, as well as to implement them. It was found that some measures were repeated, while others do not fit the reality of the microclimates or their agronomic consequences in each of the areas of intervention of the project; consequently, they cannot be applied to all areas in the same way.
6. The stakeholders are involved in different ways in compliance of the measures, but the regional governmental institutions do not know the Coffee Alliance EMMP.

## PERU-CACAO ALLIANCE - PHASE II

7. Compliance with the EMMP environmental mitigation measures of the Peru Cacao Alliance - Phase II project achieved an implementation level of over 50%. The factors contributing to compliance with environmental measures are the confluence of public institutions that contribute to the application of the environmental mitigation measures, making it necessary to reach consensus in terms of the messages, as well as the organic certification strategies of producer associations and the training. Obstacles to compliance with the environmental measures have been identified, such as the costs of inputs for organic fertilization, certain beliefs about pruning, the low productivity of one type of cacao that can lead producers to seek other crops, including the illicit ones, and deforestation.
8. The Environmental Monitoring and Mitigation Plan is written in a very confusing manner, making its implementation hard to plan, monitor, and assess. The plan includes 16 repeated measures, as well as several measures that are not relevant to the area.
9. It has been noted that the different stakeholders perceive that the project emphasizes the production rather than the environmental aspect, as they are not aware of the existence of the EMMP of the project.
10. Participation of women has been evident throughout the production process; in terms of leadership in assuming positions such as president of their organizations. They are also the strictest in respecting the fulfillment of environmental measures, as they relate it to caring for their families and children. Involving women in training has given them the technical knowledge they lacked and they now feel they can compete on an equal level with their husbands in how to manage their plots, while demonstrating that there are some technical aspects which, if implemented, will improve their productivity.



# RECOMMENDATIONS

## ALLIANCE FOR DIGITAL AND FINANCIAL SERVICES (CR3CE ALLIANCE)

On April 15, 2020, a Recommendation Co-Creation Workshop was held together with the CEDRO and USAID technical teams to present and validate the ECR findings and conclusions, and to collaboratively develop ways to address them. The inputs allowed for the development of the recommendations which are listed below.

### FOR CEDRO

1. Preparation of an Environmental Monitoring and Mitigation Plan with an analysis of the relevance of each measure for the areas of intervention, which is in line with the annual activities that the CR3CE Alliance carries out with both the local governments and Yachay.
2. Articulate the Environmental Monitoring and Mitigation Plan with the EMMPs of the partners/allies, so that they complement each other to achieve greater efficiency and effectiveness.
3. The Environmental Monitoring and Mitigation Plan should be written in a more precise way, including goals, indicators and deadlines for their fulfillment, and should specify the responsible party for their implementation.
4. The EMMP activities should be included in the annual activity plans of the project, as well as the corresponding monitoring and reporting.
5. We recommend including new communication strategies (or complement the existing ones) for:  
i) diffusion of the EMMP to the regional and local authorities, as well as with the communities to generate awareness and commitment to the environmental issues; ii) carrying out advocacy actions, strengthening capacities/technical assistance with municipalities on environmental aspects for the inclusion of mechanisms and/or budgets for compliance and incentives for the management of solid and organic waste, iii) awareness of best environmental practices for the population using the telecenters for centers of dissemination.

### FOR USAID

6. The guidelines for formulation of the EMMP should be reviewed, so that the environmental mitigation measures are realistic and accurate to facilitate planning, monitoring and evaluation.
7. Approve inclusion in the budget of the hiring of an environmental specialist for preparation of the EMMP and subsequent follow-up of its implementation.
8. Promote coordination between the IDF project and DEVIDA, to articulate interventions with municipalities to generate solid waste management plans.

### FOR GOVERNMENTS

9. Local governments must carry out their solid waste management function in accordance with the Organic Law of Municipalities (Law 27972) and Legislative Decree 1278 - Law of Integrated Solid Waste Management.

10. Local governments must generate energy efficiency programs for the public in accordance with the current regulations that include educational programs on electricity and water saving.

## OTHER RECOMMENDATIONS

11. Conduct a study to find out how many municipalities have a recycling system and that also make sure that the final recycling stream destination has been segregated from the beginning.

## COFFEE ALLIANCE FOR EXCELLENCE (CAFE)

The Recommendation Co-Creation Workshop was held on April 21, 2020 with participation of the technical teams of TNS and USAID. During this meeting, the findings and conclusions of the study were presented and validated. Recommendations were also developed collaboratively, which served to formulate the following recommendations:

## FOR TECHNOSERVE

12. Review and update the Environmental Monitoring and Mitigation Plan, based on the findings of the study, while making any necessary adjustments, establishing the operationalization of the measures and, setting goals and indicators to be monitored.
13. Disseminate the EMMP with the stakeholders involved in the promotion of the coffee production chain attending technical meetings such as the Regional Technical Tables with the participation of the Regional Environmental Authority (ARA), the National Commission for Development and Life without Drugs (DEVIDA), the National Institute for Agricultural Innovation (INIA), the United Nations Development Program (UNDP), or with the National Agricultural Health Service (SENASA) and local governments, the Ministry of Agriculture (MINAGRI), the Ministry of the Environment (MINAM), the National Coffee Board and USAID, in order to unify criteria and bring one single message to the producers.
14. Disseminate and analyze the ECR results with technical teams from the different areas in order to plan the interventions in a realistic way.
15. Establish strategies to strengthen and expand the role of women in the implementation and enforcement of the environmental measures.
16. Systematize intervention (the production chain), in order to share it with other stakeholders for replication and sustainability.
17. Implement a Knowledge Management Platform on the management of coffee and the implementation of environmental measures in alternative development zones and the experience of the Coffee Alliance project, for its transfer to the stakeholders involved.
18. Regarding the environmental mitigation measures:
  - a. Continue the work of the Coffee Alliance with the NGO Campo Limpio to improve the storage of solid waste (e.g. pesticide containers), through training activities in recycling.
  - b. Systematize and disseminate the use of vetiver grass in the seepage wells for coffee honey water as a good practice.

- c. Continue to strengthen the capacity of farmers to pay for fertilizers through demonstration plots using low-cost inputs available to the farmer.
- d. Continue erosion control at the demonstration plot level using either live or dead barriers.
- e. Prepare fermented liquid fertilizers (boils), in order to help lower production costs.
- f. Perform communication campaigns with concrete alternatives for the rural areas, carrying out a protocol to help the producer take care of both rust and the current COVID-19 pandemic in order to take care of coffee production.

## FOR USAID

- 19. Promote collaboration with the government (MINAM, MINAGRI, DEVIDA) to identify mitigation measures that unify criteria that respond to both USAID regulations and Peruvian law.
- 20. Strengthen the capacities of the Alternative Development partners on the regulations of Standard 216 as an important input for preparing the Environmental Monitoring and Mitigation Plan as well as identifying indicators and goals that are practical, realistic and inexpensive.
- 21. USAID should ensure that the implementing partners incorporate the environmental mitigation activities into the annual work plans and that their indicators are included in their monitoring and evaluation plans.

## FOR GOVERNMENTS

- 22. DEVIDA should promote the constitution and strengthening of a national instance and of the Regional Technical Tables with the participation of different stakeholders such as ARA, INIA, SENASA, MINAGRI, MINAM, local governments, the National Coffee Board and UNDP, to unify criteria of the environmental measures and bring one single message to the producers.
- 23. Validate the genetic coffee material (in productivity as well as agronomic management) according to the microclimates of the alternative development zone and according to the demand of the international market in order to improve the quality of the coffee.
- 24. DEVIDA, MINAGRI, SENASA, and INIA must react immediately each time plagues are detected in coffee crops to avoid propagation as well as address the dissatisfaction faced by producers that cause the change to a different crop.

## PERU CACAO ALLIANCE - PHASE II

On April 17, 2020, the Recommendation Co-Creation Workshop was held, with participation of the technical team of Palladium and USAID. On this occasion, the findings and conclusions of the ECR were presented and validated and recommendations were developed collaboratively. The recommendations that emerged are presented below.

## FOR PALLADIUM

25. Review and improve the formulation of the Environmental Monitoring and Mitigation Plan including indicators, targets and corresponding responsible parties. Additional inclusions are the consideration of regional differences, climate, productivity, the parameters of the Ministry of Environment in the environmental mitigation measures, as well as the agroforestry systems.
26. Include the EMMP indicators into the Monitoring and Evaluation Plan of the Cacao Alliance so that the progress in their implementation is reported jointly.
27. Monitor the differentiated state of progress of the implementation of environmental measures by the stakeholders: both small and medium producers, and associations.
28. Disseminate and analyze the ECR results with the zonal teams of the Cacao Alliance.
29. Prepare a communication plan for the Environmental Monitoring and Mitigation Plan at all levels, for regional and local authorities, partners and farmers.
30. Prepare work strategies to strengthen and expand the role of women in implementing and monitoring compliance within the environmental measures.
31. Regarding the environmental mitigation measures:
  - a. The mitigation measure on organic and inorganic solid waste and the corresponding final disposal should focus on mitigation and the corresponding compliance, instead of pursuit of other options (compost, micro-fillers, biodegradable bags).
  - b. The mitigation measure on plastic contamination of water bodies should include all possible measures to prevent plastic contamination and not only focus on one single measure (biodegradable bags).
  - c. Coordinate with SENASA in terms of how to perform pest control on new cacao varieties.
  - d. Develop unified technological packages - NIPO, IPM, GAP, coordinating with the different regional and local stakeholders to bring unified messages to the producers.
  - e. We suggest identifying some forest species that are targeted to the area and including them in the EMMP.

## FOR USAID

32. Promote coordinated work with government institutions (MINAM, MINAGRI, DEVIDA) to identify mitigation measures that unify criteria and respond to both the USAID regulations and Peruvian law.
33. Strengthen the capacities of the Alternative Development partners on the regulations of Standard 216 as an important input for the elaboration of the Environmental Monitoring and Mitigation Plan, while identifying indicators and goals.

## FOR DEVIDA

34. Promote spaces for national and regional consensus with the participation of public institutions (MINAGRI, MINAM, SENASA, INIA, DEVIDA, regional governments), the private sector, USAID partners, as well as other relevant stakeholders (UNDP) to unify criteria and identify environmental mitigation measures.
35. Develop an environmental monitoring system that allows for following up on the fulfillment of environmental mitigation measures agreed upon by consensus.
36. Update the PERSUAP and disseminate it to the stakeholders involved in each region.

# STUDY PURPOSE AND QUESTIONS

## PURPOSE

The purpose of the Alternative Development program’s Environmental Compliance Review (ECR) is to analyze the level of compliance and provide recommendations for the improvement of the EMMPs of the Alternative Development activities implemented by the following partners: Peru Cacao Alliance/ Palladium, Coffee Alliance for Excellence (CAFE/ Technoserve and CR3CE Alliance/ Cedro. The ECR will also focus on options and suggestions to increase successful compliance with environmental measures.

### Purpose of the study

1. Determine the level of compliance of Alternative Development activities according to USAID Regulation 216 and Peruvian environmental legislation.
2. Identify multiple and creative alternatives to increase compliance with environmental mitigation measures.
3. Provide practical recommendations (based on input from team members (especially IPs and beneficiaries) for the sustainability of environmental measures identified as being in compliance and for increasing the level of compliance.

## STUDY QUESTIONS

The questions that guided the study are in the following table.

Table 1. Study questions

QUESTION	SUB-QUESTION
1. What is the level of compliance with the mitigation measures presented in the EMMP?	<ol style="list-style-type: none"><li>1.1 What is the percentage of compliance and non-compliance with EMMP mitigation measures by implementing partners?</li><li>1.2 To what extent are the recommendations presented in the internal ECR conducted last year being implemented?</li><li>1.3 To what extent are the recommendations provided in the external ECR implemented?</li></ol>
2. Which factors facilitate or hinder compliance with the mitigation measures in the EMMP?	<ol style="list-style-type: none"><li>2.1 What are the factors associated with compliance with EMMP mitigation measures?</li><li>2.2 To what extent do the identified factors support or constrain compliance with EMMP mitigation measures?</li><li>2.3 How do some of these factors relate to changes in beneficiary behavior?</li></ol>

QUESTION	SUB-QUESTION
3. Which alternatives contribute to increasing the level of compliance with the mitigation measures in the EMMP?	3.1 What are the alternatives in terms of actions, resources, and responsible parties to be implemented in the short, medium, and long term to achieve a higher level of compliance with EMMP measures? 3.2 What is the feasibility of implementing the alternatives presented? 3.3 What are the mechanisms for monitoring the implementation of the alternatives presented?
4. To what extent can stakeholders contribute to a higher level of compliance with mitigation measures in the EMMP?	4.1 What is the role of USAID, implementing partners and beneficiaries in improving compliance with EMMP measures? 4.2 What is the level of involvement of the above stakeholders and the potential impact of the actions to be implemented on improving compliance with EMMP measures? 4.3 What is the role of men and women in environmental practices?

# BACKGROUND

USAID's Alternative Development Program is implemented in the regions of Huánuco, Ucayali and San Martín and includes the Peru Cacao Alliance (implemented by Palladium), Coffee Alliance for Excellence (CAFE) (implemented by TechnoServe), Alliance for Digital and Financial Services - CR3CE (implemented by CEDRO) projects and the Government to Government Agreement "Operational Plan for Institutional Strengthening" (PORI) with DEVIDA. These implementing partners carry out environmental mitigation actions through annual Environmental Monitoring and Mitigation Plans (EMMP) and annual internal Environmental Compliance Review (ECR) studies according to USAID Regulation 216 and the requirements of Peruvian environmental legislation. In addition, USAID conducts external ECR such as the one hereof.

This study includes the following projects:

- a) **Alliance for Digital and Financial Services (CR3CE Alliance).** The project is intended to help modernize and diversify local markets in Alternative Development areas (Huánuco, San Martín and Ucayali regions) by expanding a market for Internet services, strengthening information technology (ICT) skills and the supply and demand for financial services.

The EMMP proposes actions aimed at mitigating "the direct and indirect negative impacts that would be generated by the implementation of Yachay's activities on the following environmental components in their different phases: flora, fauna, soil, water, air, and landscape". It describes possible impacts to the environment during execution and operation phases such as the installation, reinforcement and maintenance of lifting towers, installation and maintenance of ground wells, and the partial or complete replacement of electronic equipment.

- b) **Coffee Alliance for Excellence (CAFE).** The Coffee Alliance project is a public-private partnership with the overall objective of supporting coffee-growing families in San Martín, Huanuco and Ucayali to manage their farms and non-agricultural businesses more profitably. This support is in order to increase their licit income and thus prevent their returning to coca growing.

The EMMP proposes mitigation actions to prevent possible environmental impacts from coffee cultivation such as the use of agrochemicals, water contamination from coffee processing, and soil erosion. It also promotes agroforestry systems as a mechanism to avoid deforestation.

- c) **Peru Cacao Alliance - Phase II.** This project is a public-private partnership with the aim of supporting 24,000 rural families in overcoming poverty and integrating them into the legal economy through cacao farming. The strategies include increasing productivity, promoting private investment and strengthening the markets for commercial, technological and financial services.

The EMMP for year 3 was designed by taking into account the possible environmental impacts of the different activities carried out by the project: "the technological component of cacao farming includes measures to mitigate the possible environmental impacts of different activities such as: i) land selection for farming, ii) land preparation, iii) establishing nurseries, iv) establishing permanent fields, v) soil management and conservation, vi) crop management, vii) harvesting and



post-harvesting. The mitigation measures are part of the technological component, so they will not be an additional burden on production”.

Table 2. Projects included in the assessment

<b>NAME OF THE ACTIVITY</b>	<b>IMPLEMENTER</b>	<b>LOCATION</b>	<b>START AND END DATE</b>	<b>BUDGET</b>
Alliance for Digital and Financial Services (CR3CE Alliance)	Information and Education Centre for Drug Abuse Prevention (CEDRO)	San Martín, Huánuco, Ucayali	12/15/2017 - 12/15/2022	US \$ 10,000,000
Coffee Alliance for Excellence (CAFE)	TechnoServe, Inc.	San Martín, Huánuco, Ucayali	01/02/2017 – 01/02/2022	US \$ 11,225,896
Peru Cacao Alliance - Phase II	Palladium International, LLC	San Martín, Huánuco, Ucayali	09/01/2016 - 08/31/2022	US \$ 29,971,443

# STUDY METHODS AND LIMITATIONS

## STUDY DESIGN

The study is based on a Concept Note prepared in September 2019 and approved by USAID in October 2019 ([Annex C](#)). The design defined a mixed methodology which combined quantitative and qualitative methods to achieve the set objectives and answer the questions posed. The field work was carried out in January 2020, followed by the presentation of initial findings and a workshop to co-create recommendations in a virtual setting during late April of 2020.

The analysis of compliance of the environmental measures covers the period from October 2018 to September 2019. The scope of the study includes the three regions where the projects are developed, San Martin, Ucayali and Huanuco. The environmental mitigation measures analyzed are included in the Environmental Monitoring and Mitigation Plans (EMMP) which are found in [Annex D](#).

- The EMMP of the Alliance for Digital and Financial Services - CR3CE project includes 20 environmental mitigation measures, which are organized in three aspects: 1) infrastructure, 2) biophysical and 3) environment and health.
- The EMMP of the Coffee Alliance for Excellence (CAFE) project identifies 25 environmental mitigation measures organized into five aspects: infrastructure, biophysical, climate change, environment and health, and others.
- For the case of the Peru Cacao Alliance project, the EMMP identifies 66 environmental measures organized in five areas: infrastructure, biophysical, climate change, environment and health, and others.

## DATA COLLECTION TECHNIQUES AND INSTRUMENTS

The following are the data collection techniques and instruments used in this study. The data collection instruments can be found in [Annex F](#).

- Survey: For the Coffee Alliance and Cacao Alliance projects, surveys were developed for a sample of producers of each crop. The surveys were structured and included questions that allowed for data to be collected about knowledge and practices related to environmental measures.
- Documentary review: The main project documents were reviewed, such as internal and external ECRs, the Environmental Monitoring and Mitigation Plan, and others, listed in the Bibliography Review section.
- In-depth interviews: In-depth interviews were conducted with three groups of stakeholders: a) community leaders from each of the regions in the project area, b) the technical team in charge of implementing the project in Lima and the intervention areas and c) regional government authorities. The interviews allowed for a more in-depth understanding of: a) the causes and factors that determine the level of compliance with EMMP measures and, b) the causes and factors that restrict compliance with mitigation measures.
- Focus groups. Focus groups were organized with producers of each crop and a set of questions was asked. This technique allowed to gather opinions and assessments on: a) the causes and

factors that determine the level of compliance with EMMP measures and, b) the causes and factors that restrict compliance with mitigation measures.

- Non-participatory observation: During the field work, the situation of the lifting towers and telecenters was directly observed, in accordance with the EMMP environmental mitigation measures. A checklist was used for this purpose.

## SAMPLE FOR THE QUANTITATIVE STUDY

Stratified and clustered multi-stage probabilistic sampling was applied. Sample selection was carried out in four stages: i) in the first stage, a stratified sampling was determined where each stratum was comprised of the departments of Huánuco, Ucayali and San Martín, ii) the second stage used a cluster sampling (each province was designated as a cluster), iii) the third stage also used a cluster sampling in which each district made up a cluster and iv) the final unit of sample selection was the producer. Finally, an additional replacement sample was considered.

Samples were collected by separate crops. The universe was defined by the 2018 coffee farmer cohorts. In the case of cacao, the universe was the total number of beneficiaries participating in project activities in the last three years. The parameters used for sample selection were: 95% confidence level and 8% error. It should be noted that producers were selected using IBM SPSS statistical software, considering the technical specifications indicated and the geographical dispersion of the sampling units. Details of the sampling can be found in [Annex E](#). The sample size and survey performance were as follows:

Table 3. Sample and performance

SCOPE	COFFEE		CACAO	
	PLANNED SAMPLE	OBTAINED SAMPLE	PLANNED SAMPLE	OBTAINED SAMPLE
Huánuco	74	82	25	28
San Martín	70	77	91	98
Ucayali	--	4	32	37
<b>Total</b>	<b>144</b>	<b>163</b>	<b>148</b>	<b>163</b>

## SAMPLE FOR QUALITATIVE STUDY

For the qualitative study, the sample was intentional, associated with the techniques applied and the selection criteria of the informants.

For the Coffee and Cacao Alliance projects, the selection of farmers began by identifying communities that met the following criteria:

- Accessibility: communities that can be accessed by land.
- Travel time: the travel time to reach each community was deemed to be a maximum of two hours from the city, so the team could carry out the fieldwork and return to the team's point of stay.
- Security: communities that were comprised mostly of coca farmers were discarded.
- Relevance to the project: communities comprising the area of influence of the projects.

For the Coffee Alliance, 11 interviews and 13 focus groups were conducted in Huánuco and San Martín, as shown below:

Table 4. Interviews and Focus Groups conducted for the Coffee Alliance

TECHNIQUE AND TYPE OF STAKEHOLDER	COFFEE		
	HUÁNUCO	SAN MARTÍN	TOTAL
<b>Interviews</b>			
Leaders	6	5	11
<b>Focus Groups</b>			
Farmers	5	6	11
Project technical team	1	1	2
Total	6	7	13

Regarding the Cacao Alliance, 19 interviews and 15 focus groups were conducted in Ucayali, Huánuco, San Martín and Lima, as shown in the following table.

Table 5. Interviews and focus groups conducted for Cacao Alliance

TECHNIQUE AND TYPE OF STAKEHOLDER	CACAO				TOTAL
	UCAYALI	HUÁNUCO	SAN MARTÍN	LIMA	
<b>Interviews</b>					
Leaders	7	4	2	--	13
Regional Government	1	1	1	--	3
DEVIDA	1	1	1	--	3
Total	9	6	4	--	19
<b>Focus Groups</b>					
Farmers	4	4	3	--	11
Project Technical Team	1	1	1	1	4
Total	5	5	4	1	15

Regarding the CR3CE Alliance, the towers and telecenters for observation were selected based on three criteria: geographical location, ease of access and population density (inhabited area and uninhabited area). In addition, the above criteria were applied for interviews with telecenter managers. In total, 48 non-participating observations of towers and telecenters were made and 30 interviews were conducted in the study area.

Table 6. CR3CE Alliance observations and interviews

TECHNIQUE AND TYPE OF STAKEHOLDER	CR3CE ALLIANCE				TOTAL
	UCAYALI	HUÁNUCO	SAN MARTÍN	LIMA	
<b>Observations</b>					
Towers	11	10	10	--	<b>31</b>
Telecenters	6	5	6	--	<b>17</b>
Total	17	15	16	--	<b>48</b>
<b>Interviews</b>					
Telecenter Manager	6	5	5	--	<b>16</b>
Municipality Manager	4	5	4	--	<b>13</b>
Project Technical Team	--	--	--	1	<b>1</b>
Total	10	10	9	1	<b>30</b>

## INDICATOR ESTIMATES

The level of compliance with the EMMP environmental mitigation measures was estimated based on the percentages achieved in each category according to the answers gathered through the survey or through the observation instrument. In various cases, the level of compliance was obtained by averaging the answers. The details of the calculations made can be found in [Annex G](#).

## STRENGTHS AND LIMITATIONS

The main strengths of the study lie in the mixed methodology approach applied, which allowed for information to be supplemented and triangulated. The sample of the quantitative study was representative for the totality of the producers of each crop and the applied surveys received a high acceptance rate. Likewise, the qualitative techniques received high acceptance, thus developing a greater number than the planned sample.

The constraints of the study became evident during field work: i) the weak convening power of the Cacao Alliance to carry out the focus groups, ii) interference by Cacao Alliance technicians during the interviews, iii) rainfall and poor weather that blocked transportation routes and prevented the interviews from being conducted in more remote areas.

# FINDINGS

## ALLIANCE FOR DIGITAL AND FINANCIAL SERVICES (CR3CE ALLIANCE)

**Evaluation Question:**

1. *What is the level of compliance with the mitigation measures presented in the EMMP?*

**Summary of Findings**

- *Compliance with the environmental mitigation measures of the Environmental Monitoring and Mitigation Plan for lifting towers and relay masts stands at different levels: location 100%, reforestation 85.1%, signposting 80.7%, maintenance 77.9%, solid waste 75.3%, and ground wells 53.2%.*
- *The highest level of compliance with EMMP environmental mitigation measures in the telecenters lies in compliance with energy efficiency and water use, standing at 73.8%, followed by solid waste management which reached a 64.7% compliance level. The lowest level of compliance was observed in the ground well sector, which attained 51.5% compliance.*

A separate analysis of the CR3CE Alliance’s environmental mitigation measures was carried out separately for measures corresponding to telecenters and measures corresponding to lifting towers. The CR3CE Alliance’s EMMP includes 20 environmental mitigation measures, 5 of which refer only to telecenters and 11 to lifting towers and relay masts. In addition, 4 measures that are common to both telecenters and towers are included.

### LIFTING TOWERS AND RELAY MASTS

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**FINDING I:** Compliance with the environmental mitigation measures of the Environmental Monitoring and Mitigation Plan for lifting towers and relay masts stands at different levels: location 100%, reforestation 85.1%, signposting 80.7%, maintenance 77.9%, solid waste 75.3%, and ground well 53.2%.

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As stated above, the CR3CE Alliance’s EMMP contains 11 environmental mitigation measures that apply only to lifting towers and relay masts, with 4 measures common to both antennas and telecenters. For the purposes of this study, measures were grouped into activities that can cause environmental impacts, such as: i) location, ii) reforestation, iii) signposting, iv) security, v) maintenance, vi) solid waste and vii) ground wells.

Compliance with the mitigation measures observed, according to the areas listed, was estimated as an average of the values obtained for each value. In this sense, mitigation measures with the highest compliance are those related to the location of the towers and reforestation (100% and 85.1% in each

case) and those with the lowest compliance are those related to signposting (65.2%) and ground well (53.2%).

Graph I. CR3CE Alliance. Lifting towers and relay masts. compliance with environmental mitigation measures based on areas.

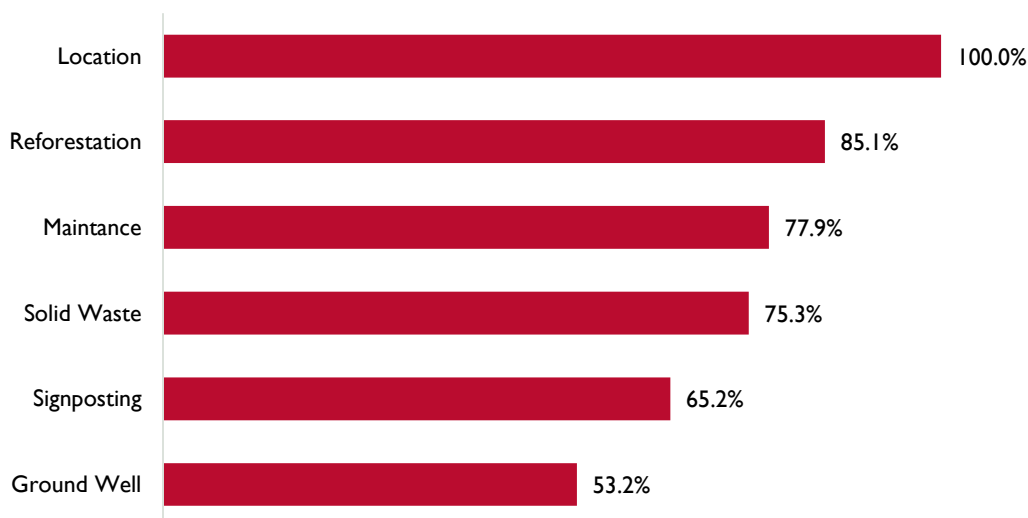


Table 7 shows the level of compliance with each of the measures under evaluation, grouped by the areas of analysis. As can be seen, 5 measures could not be evaluated, and the reasons are explained below.

Table 7. CR3CE Alliance. Lifting towers and relay masts. compliance with environmental mitigation measures.

NO.	MEASURE	% COMPLIANCE
<b>Location</b>		<b>100%</b>
1	Regarding new deployments or relocations of lifting towers for relay masts, avoid laying them within protected areas or buffer zones. Instead, lay them within previously disturbed areas (i. e. secondary forests [purmas], grasslands, agricultural areas).	100%
2	When installing lifting towers, activities affecting trees, such as indiscriminate pruning or felling aiming at providing a line-of-sight (LOS) should be avoided.	100%
<b>Reforestation</b>		<b>85.1%</b>
3	Reforest and allow natural regeneration of native species surrounding lifting towers for relay masts when located in rural zones. Planting <i>Centrosema macrocarpum</i> (SourceTrust, 2013), a shrub commonly named <i>Centrosema</i> , which works well as soil cover, is suggested.	85.1%
<b>Signposting</b>		<b>80.7%</b>
4	Lifting towers for relay masts will be properly signposted and have beacon lights on place when maximum permissible height is exceeded by buildings or other towers nearby.	80.7%
5	For lifting towers or other equipment implemented in homes or public spaces, install an information panel including signposting with safety measures for people and to prevent littering.	(*)
<b>Security</b>		
6	For lifting towers or other equipment implemented in homes or public spaces, easy safety and maintenance instructions and a telephone number to report incidents will be provided for ongoing use, and semi-annual monitoring visits will be conducted.	(*)
7	Use of safety and protection equipment such as safety harnesses and helmets, for the implementation of lifting towers and mast installation.	(*)

NO.	MEASURE	% COMPLIANCE
8	Use of safety and protection implements for maintenance and/or reinforcement of lifting towers and/or masts, such as safety harness, helmet, gloves, masks and others.	(*)
14	Measure the ohms level of each well to verify if they are operational at least once a year (see National Electricity Code - MEM Peruvian Technical Standard No. (370.053.1999).	(*)
<b>Maintenance</b>		<b>77.9%</b>
9	Check towers and relay mast to see if anti-corrosion paint is correct or chipped off, tension ropes are tight and locks should be replaced due to rusting.	77.9%
<b>Solid Waste</b>		<b>75.3%</b>
10	Collect used paint containers and other used containers (e. g. thinner, turpentine, etc.) to avoid their reusage in environmental or human-health risk activities (such as water/food carriage or storage), as per Waste Management Plan.	83.9%
15	Collect used chemical containers, as per Waste Management Plan.	66.7%
<b>Ground Well</b>		<b>53.2%</b>
11	For new ground well deployments, installation should take place at least 50 m from riverbanks and 20 m from streams.	90.3%
12	Ground wells should have danger signs placed as well as signs indicating the resistance levels as per standards (see Electrical National Code – Ministry of Energy and Mines’ Peruvian Technical Standard No. 370.053.1999).	51.6%
13	Develop small gardens (similar in area to the ground well) in a place that favors its development. These gardens will include ornamental plant species such as Croton sp., roses, common grass or similar ones.	17.8%

Note: (\*) Unobserved measure

Source: 2019 Environmental Compliance Review (ECR) Observation Guide

## LOCATION

Measures 1 and 2 achieve a high level of compliance because none of the towers observed are in either protected or buffer zones. During installation of the elevated towers and relay masts, no indiscriminate felling or pruning is carried out, so the measure achieved a 100% compliance level.

## REFORESTATION

Measure 3 reaches 85.1% compliance and is the result of averaging two aspects:

- a) That the soil around the lifting tower and relay mast has been covered with plants, which is 82.6%.
- b) No vines or trees growing so high are used to cover the relay, which is 87.5%. Because it is a jungle area, reforestation is native, and it is difficult not to find plants around the towers. Yachay complies with the measure of having no vines and not planting trees that grow so high that they can cover the relay. Measure 3 suggests planting *centrosema* which is counterproductive because it is a vine and, since they are climbing plants, they can cover the relay as they grow.

## SIGNPOSTING

Measures 4 and 5 falls under this item, but only Measure 4 could be observed because Measure 5 refers to masts in homes or public spaces and these types of masts were not included in the sample.



Measure 4 shows an average of 80.7% compliance and include the following aspects:

- a) The lifting tower must have a beacon light, which is complied with in 90.5% of the observed cases.
- b) Signposting with information panel, which is complied within 43.3% of the observed cases.
- c) Signposting with a sign that reads “do not litter”, which is complied within 83.3% of the observed cases.
- d) Masts carry a sign that reads “electrical hazard”, which is complied within 86.6% of the observed cases.
- e) Masts carry a sign that reads “Authorized personnel only” or “Do not enter”, which is complied within 100% of the observed cases.

## SECURITY

Security related environmental mitigation measures 6, 7, 8 and 14 (delivery of security instructions in homes or public spaces, use of security equipment for implementation, use of security equipment for maintenance, measurement of ohms levels of the ground well) could not be verified because no Yachay personnel could be found during the field work to report on these aspects.

## MAINTENANCE

Measure 9 covers three areas that are 77.9% compliant on average:

- a) Masts painted with anti-corrosion paint in good condition (not chipped off) which was found to be 82.8% compliant. This situation is because the rain and the high humidity of the area does not always allow the paint to be in optimal conditions.
- b) Lifting tower and relay mast tension ropes are tight, with 73.1% compliance.
- c) The condition of the locks. This aspect could not be verified because most of the towers (25) did not have them or there were gates that prevented observation.

## SOLID WASTE

Measures 10 and 15 have been included in this study, which show a compliance level of 83.9% and 66.7% respectively. During the field work, no containers of any kind were found around the lifting towers and relay masts in all 31 towers visited.

## GROUND WELL

Measures 11, 12 and 13 are included, which reach an average of 53.2% compliance:

- a) Measure 11. A high level of compliance was observed in terms of respect for the distances of the wells to land from the banks of the rivers and streams, which reaches 100% compliance.
- b) Measure 12. It reaches a compliance level of 51.6% because, even though the ground wells have signs, only 3% are signposted with the resistance levels established by the electricity standards.

- c) Measure 13. The measure refers to implementing small gardens in areas similar to the ground well and is only complied with 17.8% because it is not advisable to install gardens with the suggested plants in a jungle area (difficult to adapt) and because plants grow quickly as a result of rain and, moreover, must be pruned.

## TELECENTERS

**FINDING 2:** The highest level of compliance with EMMP environmental mitigation measures in the telecenters lies in compliance with energy efficiency and water use, standing at 73.8%, followed by solid waste management which reached a 64.7% compliance level. The lowest level of compliance was observed in the ground well sector, which attained 51.5% compliance.

The EMMP contains 5 mitigation measures that apply to telecenters only and 4 common measures for both telecenters and lifting towers. For the analysis, all 9 measures analyzed and were grouped into different activities that can lead to environmental impacts, such as: i) ground well, ii) solid waste, iii) maintenance of electrical equipment and iv) energy efficiency.

The mitigation measures by area were calculated as averages of the individual measures. The highest compliance is related to energy efficiency (73.8%) and solid waste (64.7%). The environmental mitigation measures with the least compliance are those related to ground wells (51.5%) as shown in the following graph.

Graph 2. CR3CE Alliance. Telecenters. Compliance with environmental mitigation measures by area.



The following table presents the environmental mitigation measures of the telecenters. As shown, out of 9 measures, the level of compliance could be calculated for 6 (in one case it does not apply, and two measures could not be verified).

Table 8. CR3CE Alliance. Telecenters. Compliance with environmental mitigation measures.

NO.	MEASURE	% COMPLIANCE
<b>Ground Well</b>		<b>51.5%</b>
11	For new ground well deployments, installation should take place at least 50 m from riverbanks and 20 m from streams.	67.7%
12	Ground wells should have danger signs placed as well as signs indicating the resistance levels as per standards (see Electrical National Code – Ministry of Energy and Mines' Peruvian Technical Standard No. 370.053.1999).	43.1%
13	Develop small gardens (similar in area to the ground well) in a place that favors its development. These gardens will include ornamental plant species such as Croton sp., roses, common grass or similar ones.	28.5%
15	Collect used chemical containers, as per Waste Management Plan.	66.7%
<b>Solid Waste</b>		<b>64.7%</b>
16	Implement a solid waste (organic and inorganic waste) and dangerous electronic waste (cells, batteries, monitors, computer pieces, etc.) sorting and management system. See Waste Management Plan.	64.7%
17	Agreements with Local Governments with a segregation system and with private companies for management and final disposal thereof.	(**)
<b>Electrical Equipment Maintenance</b>		--
18	Maintenance plan for electrical equipment (water pumps, air conditioning, lights, computer equipment and others) and maintenance of sanitary facilities including water taps available to users in telecenters and other places used by the company for public service, to prevent and/or avoid water leaks.	(*)
<b>Energy Efficiency</b>		<b>73.8%</b>
19	Six-monthly application of a checklist on the condition of the telecenters and their toilets resulting in recommendations for the municipalities. In addition, to follow up on the recommendations made.	(*)
20	Implement and execute energy and water use efficiency activities.	73.8 %

Note: (\*) Unobserved measure (\*\*) Does not apply

Source: 2019 Environmental Compliance Review (ECR) Observation Guide

## GROUND WELLS

Regarding this topic, four measures are presented, the average of which is 51.5%:

- a) Measure 11. Refers to the location of the ground well over 50 meters from the riverside and over 20 meters from the ravines. This measure is complied with by 67.7% of the telecenters.
- b) Measure 12. 64.8% of the ground wells have the required signposting (a yellow sign that reads "Ground Well"; the signposting is facing the well and shows the resistance levels established by the electricity norms).
- c) Measure 13. The installation of small gardens with an area similar to the ground well is only complied with by 2 of 7 telecenters because in the remaining (10), it was not possible to observe the gardens due to the fact that the telecenters share the ground wells with the lifting tower. This measure is not relevant for two reasons: i) the installation of a garden with species that are not from the area (Croton sp, roses, common grass, as mentioned by the EMMP) will not yield the expected

results because these plants are not suitable for the local weather, ii) in the forest, plants grow quickly due to the effect of rain and instead need to be pruned.

- d) Measure 15. The collection of used chemical containers, according to the waste management plan, is carried out by 66.7% of the telecenters.

## SOLID WASTE

In this regard, the EMMP provides for two measures:

- a) Measure 16. This refers to the implementation by the telecenters of a system for solid waste sorting and management. Compliance reaches 64.7%. To estimate this percentage, three aspects were considered: a) the existence of the system (88.2% of the telecenters observed have them), which consists of small containers of different colors for organic, hazardous and general waste to be disposed of; b) the use of containers by the people attending the telecenters (reached 58.8%) and, c) the existence of spaces to dispose of used paper for reuse (complied with by 47.1% of the telecenters).

- b) Measure 17. It is not applicable because it provides that telecenters establish "agreements with local governments with a system of segregation and private companies for the management and final disposal thereof. However, since the municipality is the institution that manages them, they cannot sign agreements between them.



Interviews with telecenter managers reveal that they have a high level of awareness regarding the segregation of solid waste

and are committed to complying with this provision. However, the collection and final disposal process does not include a segregation stage at any of the stages of the disposal process. Garbage collection trucks mix all waste during the trip and deposit it together in one place. This situation discourages good practice in the telecenters as shown by the following testimonies:

*"...but the municipality is in charge of collecting 3 times a week, I take out the trash, but the trash that I sort inside the telecenter they put it all together and the sorting that I do doesn't make sense"* (Huanuco Telecenter Manager).

*"we sort the garbage, but when the collection car comes, it gathers everything together, and the sorting is useless"* (Ucayali Telecenter Manager).

Another aspect is that most of the municipalities that manage the telecenters do not have sanitary landfills and use dumps and/or solid waste is buried.

*"No, I take it to the farm with my father's help and I bury it every 15 days, each inhabitant has a place to throw their garbage."* (Huanuco Telecenter Manager).

In addition, managers reported a lack of support from municipal authorities for recycling and, in many cases, a lack of space to perform the necessary recycling.

## ELECTRIC EQUIPMENT MAINTENANCE

Measure 18 could not be verified because during the period of the field work no maintenance was carried out. However, most of the managers interviewed reported that they were unaware of the existence of an Electrical Equipment Maintenance Plan. These plans are drawn up by the municipalities and, if they exist, they were not shared with their employees, including the telecenters.

Equipment repairs are carried out by the municipality or by CEDRO and, if they are simple, they are performed by telecenter employees.

*“We do not have a plan, but every time it goes wrong the municipality's technicians come in to fix it”*  
(Ucayali Telecenter Manager).

*“a systems engineer has been hired, and he is in charge of maintenance. Also, any failure is reported to CEDRO, who replaces the spare part.”* (Ucayali Telecenter Manager).

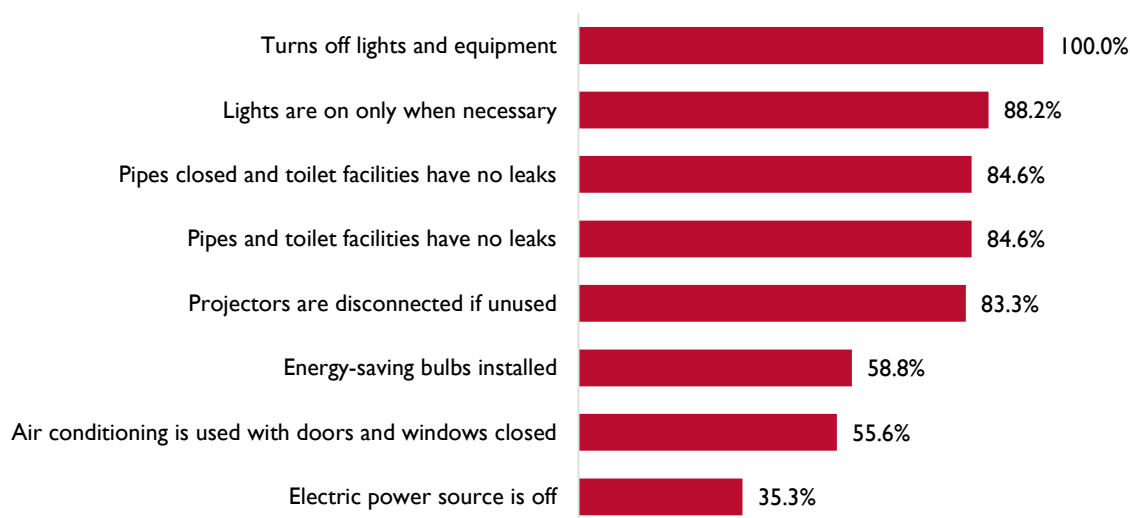
## ENERGY EFFICIENCY AND EFFICIENCY OF WATER USE

In this field, the EMMP contains two measures of which only one could be assessed:

- a) Measure 19 could not be verified because it involves the implementation of a semi-annual record. However, through the interviews, it was verified that those responsible for the telecenters are aware of energy and water saving.
- b) Measure 20. The implementation and practice of energy efficiency and efficiency of water use activities reached 73.8% compliance.

As can be seen in Graph 3, different actions for energy efficiency and efficiency of water use are applied in telecenters. It was found that the lights and equipment are turned off in all telecenters when the daily service ends and 88.2% turn on the lights only if it is necessary. In 41.2% of the telecenters, the toilet facilities are located outside the premises, either in the municipality or in the municipal library. In both cases, the responsibility for toilet facilities maintenance lies with the municipality. In 84.6% of the telecenters that have toilet facilities in the premises, the pipes and toilet facilities have no leaks (the pipes are closed when not in use and the toilet facilities have no leaks).

Graph 3. CR3CE Alliance. Telecenters. Energy and water use efficiency practices.



The telecenter managers interviewed mentioned that the low cost of water prevents the population from developing savings consciousness; furthermore, they have the wrong perception that constant rainfall makes this resource inexhaustible. They also talked about the need to educate the population about saving water.

*“measures on saving water are not complied with because the rate is flat (a single payment of 3 or 4 soles per month), but if they had a meter they would be more careful in misusing this resource” (San Martín Telecenter Manager).*

*“Well, here in the jungle it is not appreciated because there is abundance, but it is necessary to raise awareness” (Ucayali Telecenter Manager).*

**Evaluation Question**

2. *What factors facilitate or hinder compliance with the mitigation measures in the EMMP?*

**Summary of Findings**

- *Institutional factors restrict compliance with environmental mitigation measures.*

**FINDING 3: Institutional factors restrict compliance with environmental mitigation measures.**

Some factors were identified that limit compliance with EMMP environmental measures, which are mentioned below:

- a) Responsibility for compliance with environmental measures does not rest with the CR3CE Alliance.

On the one hand, the telecenters have been administered by the municipalities since 2017, the year in which CEDRO made the transfer. Therefore, compliance monitoring with the environmental mitigation measures detailed in the EMMP is the responsibility of the municipalities and not of CEDRO.

On the other hand, the lifting towers and relay masts have been granted for use to the private company Yachay, which manages them and, therefore, it is the institution that monitors compliance with the mitigation measures detailed in the EMMP.

Due to the factors mentioned above, CEDRO does not have a sanctioning role against the municipalities or Yachay if they fail to comply with environmental mitigation measures. Therefore, compliance monitoring becomes difficult.

In this context, a factor that prevents compliance with environmental measures in telecenters is related to municipal administration aspects such as: i) personnel is hired on a short-term basis, which causes high turnover and makes it impossible to monitor and control environmental mitigation measures; ii) most of the hired personnel are information technology specialists rather than technical environmental specialists, making it difficult to understand compliance with environmental measures; and iii) municipalities do not have environmental specialists and only in few cases comply with this requirement. In municipalities with environmental specialists, such specialists are responsible for training telecenter managers.

Telecenters located in populated areas are the ones that receive the least support from municipalities due to their remoteness. They lack a solid waste collection service and do not have cleaning personnel. Likewise, telecenter managers indicate that they receive little support from the municipalities to carry out educational actions with schoolchildren or the general public on environmental care issues.

It should be noted that the Municipalities of Aguaytía and Huipoca closed the telecenters due to political problems. These municipalities are governed by officials closely related to coca cultivation who resist the intervention of international cooperation projects that propose legal alternative crops.

Finally, as stated, Yachay has an agreement with the CR3CE Alliance Project; the company does not have field personnel and all its activities are centered in Lima; therefore, coordination is centralized. Tower maintenance is carried out by companies subcontracted by Yachay. It should be noted that this company has an EMMP that is in line with the standards issued by OSIPTEL, a government agency that does not necessarily respond to the EMMP required by USAID.

- b) EMMP Development

The 20 environmental mitigation measures have been developed in the EMMP in a general manner; they do not specify those responsible for their implementation, nor do they have indicators to verify their compliance. In two cases they are not relevant (installation of gardens or agreements with municipalities).

- c) Human Resources

A positive element is that CEDRO has a professional who is dedicated to monitoring the implementation of environmental measures, raising awareness of local authorities, strengthening the knowledge of telecenter managers, and coordinating with representatives of Yachay.

**Evaluation Question**

3. Which alternatives contribute to increasing the level of compliance with the mitigation measures the EMMP?

**Summary of Findings**

- The institutions responsible for compliance with environmental mitigation measures are the municipalities and Yachay, as they are directly responsible for the telecenters, lifting towers, and relay masts.

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**FINDING 4:** The institutions responsible for compliance with environmental mitigation measures are the municipalities and Yachay as they are directly responsible for the telecenters, lifting towers, and relay masts.

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The municipality is an important stakeholder because it manages the telecenters and because it is responsible for solid waste management. Not all of them have environmental specialists and those that have such personnel undertake solid waste management in the area and other environmental issues. Municipalities play a role in environmental education. Coordination with educational institutions in the area and telecenter personnel replicates the issues of recycling, solid waste segregation, water saving, and climate change.

On the other hand, when verifying the existence of an EMMP prepared by Yachay, this company is solely responsible for its compliance.

**Evaluation Question**

4. To what extent can stakeholders contribute to a higher level of compliance with mitigation measures in the EMMP?

**Summary of Findings:**

- There are differences in stakeholders' involvement level in terms of compliance with environmental measures.

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**FINDING 5:** There are differences in stakeholders' involvement level in terms of compliance with environmental measures.

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As mentioned above, telecenters, lifting towers and relay masts management is the responsibility of the municipalities and Yachay, respectively. Therefore, CEDRO does not have any type of responsibility to enforce environmental measures because it is not directly involved. However, it must be considered that there is a USAID logo on telecenters, lifting towers, and relay masts; consequently, an innovative plan is necessary in this regard. In addition, it should be considered that the CR3CE Alliance plays an awareness-raising role on environmental issues.



Telecenters are a space where educational activities are developed. Some municipalities that were visited, carry out activities in the telecenters, such as school programs in the form of summer courses and other programs for adults. Recycling and energy saving issues are included in both programs. They consider that the telecenters are used for services that they provide to the community and that they can be used to offer other services such as bank agents. The telecenter and municipal personnel coordinate with the CR3CE Alliance team to carry out awareness-raising actions on environmental issues.

As a private company, Yachay complies with the Peruvian environmental regulations established by OSIPTEL and its EMMP responds to such requirements. It does not necessarily correspond to the EMMP of CEDRO. Municipalities do not have a USAID approved EMMP; therefore, the degree of responsibility that CEDRO fulfills is very limited.

Greater participation of women has been observed in telecenters, both as managers and as users. In this regard, three-quarters of these places are run by women. As users, women seek training in the use of computers and internet access because it is a means of getting closer to their children and to have some control over them for safety reasons.

The DEVIDA personnel interviewed consider that the CR3CE Alliance goes beyond caring for the environment and focuses on caring for people. Through training they introduce the topic of prevention and care of people. Likewise, they consider that the EMMP should be disclosed to all the stakeholders in the areas to know the scope and its requirements so that they can contribute to their fulfillment.

The Autonomous Regional Environmental Authority has advised that they are working on a climate change coordination board and that they expect that all projects financed by international cooperation will concur to unify criteria on mitigation measures especially on how to carry out this process.

# COFFEE ALLIANCE FOR EXCELLENCE (CAFE)

## Evaluation Question:

1. *What is the level of compliance with the mitigation measures presented in the EMMP?*

## Summary of Findings:

- *The average compliance with the EMMP environmental mitigation measures of the Coffee Alliance Project in each of its five topics is above 60%. The measures associated with water sources conservation and reforestation, and erosion control measures have the highest level of compliance, 76% and 70%, respectively.*

**FINDING 6:** The average compliance with the EMMP environmental mitigation measures of the Coffee Alliance Project in each of its five areas stands above 60%. The measures associated with water sources conservation and reforestation, and erosion control measures have the highest level of compliance, 76% and 70%, respectively.

The Coffee Alliance for Excellence EMMP consists of 25 environmental mitigation measures. In this study, to analyze compliance, the measures were grouped according to the problems that may arise in the coffee production chain, such as: i) use of pesticides, ii) fertilization and manuring, iii) reforestation and erosion control, iv) solid waste and effluent management, and v) water sources conservation.

The compliance result for each of the topics was calculated as the average of the measures that constitute it. As can be seen in the following graph, the mitigation measures with the highest compliance are those of water sources conservation (75%), reforestation and erosion control (70%), and use of pesticides (68.2%). Meanwhile, those with the lowest compliance are fertilization and manuring (65.8%) and solid waste management (62%) measures.

Graph 4. Coffee Alliance for Excellence. Compliance with mitigation measures, according to topics.

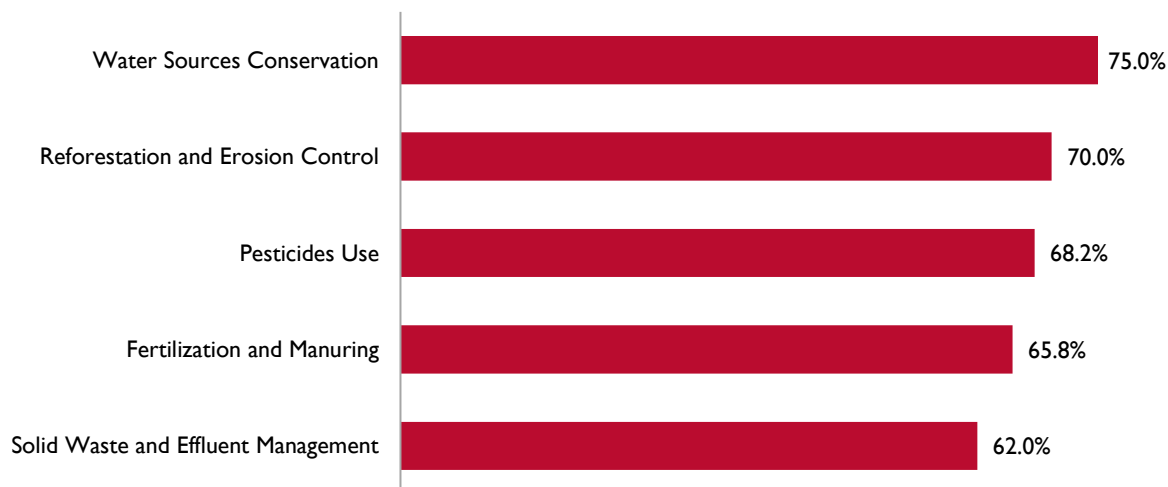


Table 9 shows the level of compliance with the measures under evaluation. Measures 18 and 19 could not be observed and 3 measures were identified whose content was repeated in others: i) Measure 13 is associated with Measure 14, ii) Measure 24 is associated with Measure 5, and iii) Measure 25 is associated with Measure 8.

Table 9. Coffee Alliance for Excellence. Compliance with environmental mitigation measures.

NO.	MEASURE	% COMPLIANCE
<b>Use of Pesticides</b>		<b>68.2%</b>
1	The CAFE Project will guarantee that assistance for pesticide procurement or use (including pesticide usage training or technical assistance) will be provided according to the Pesticide Evaluation Report and Safer Use Action Plan (PERSUAP) guidelines.	70.0%
4	Apply the Integrated Pest Management principle.	97.0%
5	Wearing personal protection equipment to apply pesticides is mandatory.	81.0%
6	Management and final disposal of pesticide waste containers.	35.0%
8	Train farmers in the correct application of pesticides and fertilizers.	76.0%
23	Train farmers on short and long-term health risks.	50.0%
24	Encourage the use of personal protection equipment (gloves, protective glasses, clothing and boots)	Measure repeated with measure 5
25	Advise farmers not to blow on clogged nozzles.	Measure repeated with measure 8
<b>Fertilization and Manuring</b>		<b>65.8%</b>
2	The CAFE Project will guarantee that Fertilizer Management Plan provisions are incorporated into the fertilizer usage training.	57.0%
7	Promote the use of cover species and mechanical resources for weed control.	71.0%
11	Encourage organic fertilizer preparation from coffee pulp.	79.0%
16	Encourage organic fertilizers preparation (composting) using coffee pulp.	86.0%
21	Apply fertilizer to the plot, taking advantage of coffee crop stubble (leaves, branches)	36.0%
<b>Reforestation and Erosion Control</b>		<b>70.0%</b>
12	Train field technicians and farmers in shade tree management.	68.0%
13	Promote native trees planting that are well adapted to the area instead of other unknown species.	Measure repeated with measure 14
14	Encourage regular shade tree management and, if necessary, avoid cutting large branches, but small pieces.	80.0%
17	Carry out intensive farmer training in different soil conservation methods. Consider installing slow-forming terraces, contour lines, live or dead barrier to retain contaminants. Each soil conservation measure should be subject to the slope angle.	54.0%
22	Grow a nitrogen-fixing crop as a soil cover between the rows of the coffee crop.	78.0%
19	Install demonstration plots on how to avoid the erosion process.	(*)
<b>Solid Waste and Effluent Management</b>		<b>62.0%</b>
3	Organic fertilizer elaboration (solid and/or liquid), as well as inclusion of green fertilizers (manure, compost) to improve soil quality, will be a priority in farmers' training events.	51.0%
9	Encourage the construction of small coffee pulp waste collection sites.	78.0%

NO.	MEASURE	% COMPLIANCE
10	Encourage the construction of small infiltration wells and channels to channel coffee waste water and, thus, prevent aquifer contamination.	42.0%
15	Provide coffee waste water management training as well as pulp waste management training.	77.0%
<b>Water Sources Conservation</b>		<b>75.0%</b>
19	Install demonstration plots on how to avoid the erosion process.	(*)
20	Promote the “water conservation” concept.	75.0%

Note: (\*) Measure not observed

Source: 2019 Environmental Compliance Review Survey (ECR)

## PESTICIDE USE

In this field, the EMMP established 8 environmental mitigation measures; however, 2 of them were duplicated with other measures, Measures 24 and 25. Measure 25 is like Measure 8 while Measure 24 is like Measure 5.

The compliance percentage in this area reached 68%, which is the average compliance of the 6 non-repeated environmental mitigation measures on this issue. Measures 1, 4, 5, 6, 8 and 23. Measures 4 and 5 had the greatest progress concerning levels of compliance, 97% and 81%, respectively. This relative high compliance is explained mainly because organic farmers must observe the Organic Seal requirements. Along these lines, conventional farmers were found who observe the use of pesticides according to PERSUAP, since they are aware that some pesticides are prohibited for human consumption and that such production can be rejected in the markets.

Likewise, in the interviews carried out it was found that many organic producers do not use pesticides because their crops are organic. Some producers mentioned using chemicals in search of higher productivity.

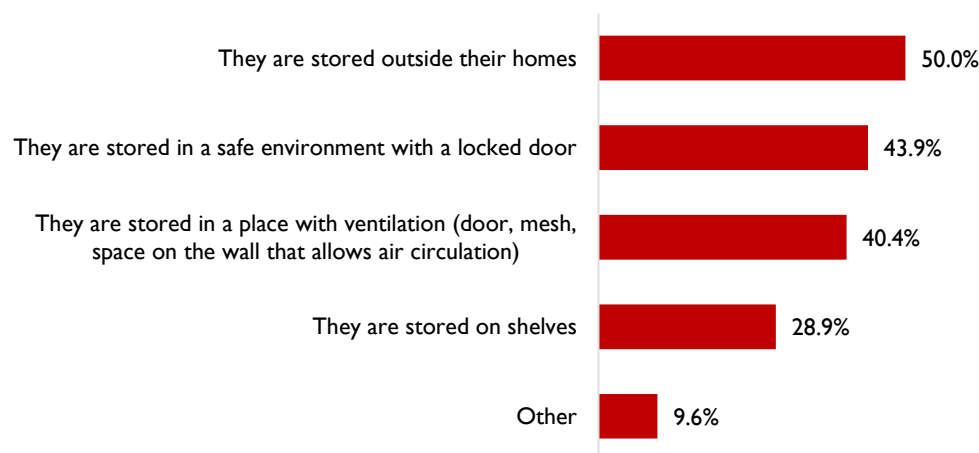
*“As we have been trained, we know that applying pesticides is spoiling the product”.* (San Martín coffee producer).

*“Also greater profitability in the products, because if the prices of the products are low, we cannot do things, we will not have means to supply our farms”.* (Huánuco coffee producer).

Below are the findings on each of the measures evaluated in this area:

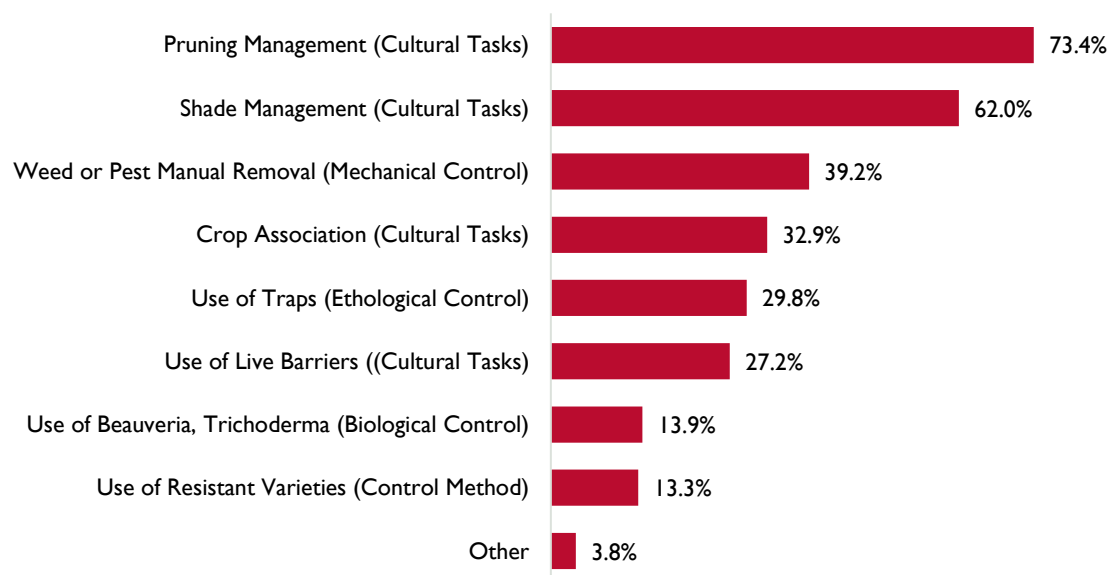
- a) Measure 1. This measure proposes that the technical assistance provided by the project on obtaining and using pesticides be carried out according to the PERSUAP guide. It reached a 70% level of compliance. The result represents the percentage of producers who spontaneously declared in the survey storing pesticides in one of the following ways: outside their home (50%), in a safe environment with a door and lock (43.9%), in a place with ventilation (40.4%) or on shelves (28.9%). Among producers who do not store pesticides in any of these safe ways, the main reason mentioned was considering it unnecessary and, secondly, lack of money or time.

Graph 5. Coffee Alliance for Excellence. Pesticide storage: where and how they are stored



- b) Measure 4. The application of the integrated pest management principle reached a 97% level of compliance, the highest level of compliance among the measures in the area of pesticide use. This result refers to the surveyed producers who claimed to carry out pest management through any of the following 8 actions: Pruning management (73.4%), shade management (62%), manual removal of weeds or pests (39.2%), crop association (32.9%), use of traps (29.8%), use of live barriers (27.2%), use of beaveria, trichoderma (13.9%) or use of resistant varieties (13.3%).
- c) Measure 5. Compliance with this measure reached 81%, which constitutes the percentage of surveyed producers who mentioned performing any of the following measures when handling chemical products: wearing rubber boots (94.7%), using a clean cloth or mask to cover mouth and nose (59.9%), wearing plastic gloves and not cloth (40.9%), wearing glasses to cover the eyes (31.1%), or using plastic to cover their back so as not to have direct contact with the backpack (20.5%). On the other hand, the reasons why they do not apply the measures mentioned by the producers are: they do not consider them important or they do not have the money to implement them.
- d) Measure 6. Related to the handling and disposal of containers with pesticide waste. Compliance reached is 35%, a percentage that corresponds to the producers who declared discarding the containers (bottles, bags, cans) with agrochemical waste in containers or specific sacks for that use. This measure obtained the lowest compliance in the area of pesticide use and is partly explained by the fact that the provisions were not clear for the final collection.

Graph 6. Coffee Alliance for Excellence. Actions carried out for pest management.



- e) Measure 8. This measure that proposes training farmers in the correct application of pesticides and fertilizers was achieved at 76%. The surveyed farmers mentioned having received training in the following topics: use of personal protective equipment (58.1%), use of compost (53.2%), evaluation of pest characteristics prior to the application of pesticides, and health and environment risks due to the use of pesticides (50% in each case).
- f) Measure 23. This measure reached a 50% level of compliance, which corresponds to the proportion of surveyed farmers who declared that they had been trained by the project on health and environmental risk issues due to the use of pesticides.

## FERTILIZATION AND MANURING

Concerning this topic, there are 5 environmental measures described in the Environmental Monitoring and Mitigation Plan, Measures 2, 7, 11, 16 and 21. On average, the measures reached a 66% level of compliance. In general, it was found that farmers are using organic fertilizers and the most used are compost, manure, coffee pulp, and island guano with phosphate rock.

On the other hand, farmers who do not apply organic but conventional practices, use chemical fertilizers. This is after considering the fertilizers that are prohibited as they know the consequences at the time of commercialization. These manures and chemical fertilizers are applied due to the difference in cost of labor and the number of times they must apply them during the year.

Here are the findings for each of the measures reported on this topic:

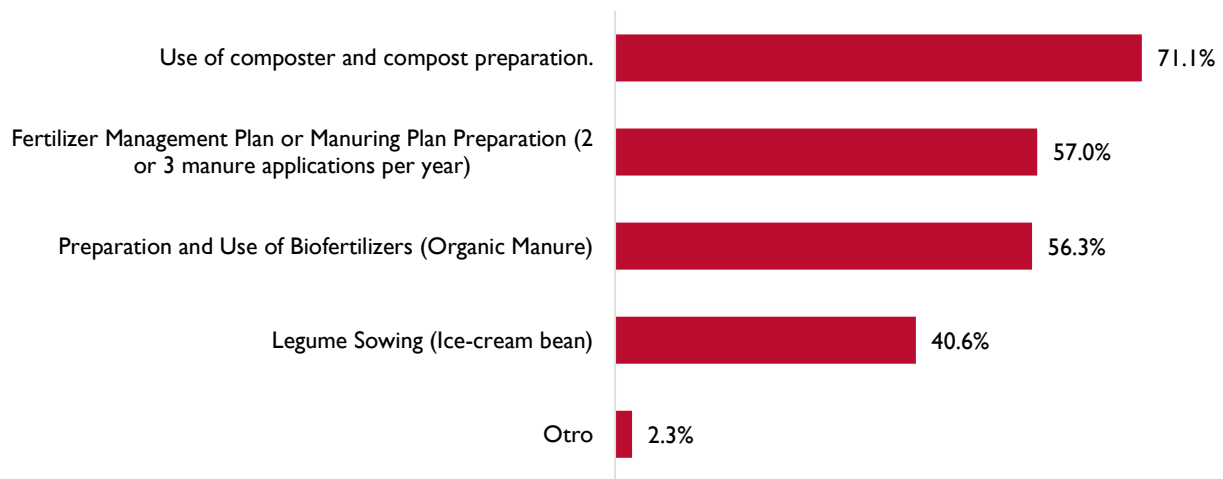
a) Measure 2. This measure ensures that the provisions of the Fertilizer Management Plan are incorporated into the training provided by the project. In this regard, compliance achieved was 57%, which is the percentage of coffee farmers who declared that they had been trained in the last year by the project on the preparation of a Fertilizer Management Plan or Manuring Plan (2 to 3 applications per year).



b) Measure 7. Compliance with this measure, which seeks to promote the use of cover species and mechanical means for weed control, reached 71% as a result of averaging progress in the following two aspects: i) manual control, where 90.1% of the farmers declared that they used living mulch or machete and, ii) mechanical control (motorized brushcutter) which reached 51.2%.

c) Measure 11. The project achieved 79% progress in this measure, which promotes the preparation of organic fertilizers from coffee pulp. This result is the percentage of farmers who declared having received some training in the last year by the project in the following topics: use of a composter and compost production (71.1%), preparation of Fertilizer Management Plan or Manuring Plan (57%), preparation and use of biofertilizers (56.3%) or legume sowing (40.6%).

Graph 7. Coffee Alliance for Excellence. Training in organic fertilizers received from the project over the past year.



d) Measure 16. The compliance reached in the measure on coffee pulp composting promotion was 86%, thus being the measure with the greatest progress among the five that make up the topic of fertilization and manuring. This result shows the percentage of farmers who claimed to use any of the following organic fertilizers: compost and/or biofertilizers (59.3%), compost made from coffee pulp (53.6%), biofertilizers such as manure, molasses, cocoa mucilage or honey water, whey or legumes (40%) or ground layer of waste from the coffee crop and dead mulch (35.7%). The main

reason indicated by the producers who declared they did not use any of the fertilizers or organic fertilizers was that they did not consider it necessary.

- e) Measure 21. This measure mentions the promotion of fertilizer application on the plot taking advantage of coffee stubble and reached 36% progress, the lowest compliance among the measures in this field. It is made up by the percentage of surveyed producers who affirmed that they used ground layers of waste from the coffee crop and dead mulch (any species) as fertilizer.

## REFORESTATION AND EROSION CONTROL

6 environmental measures are dealt with in this topic (Measures 12, 13, 14, 17, 22 and 19); the level of compliance could only be calculated in four of these measures. Measure 13 is the same as Measure 14, while Measure 19 could not be analyzed. Therefore, the average compliance in this area reached 70% based on the four measures that could be estimated. Measure 14 and Measure 22 showed the greatest progress as reported by farmers, achieving 80% and 78% compliance, respectively.

In addition to the survey results, through the interviews, it was verified that farmers are aware of the need for reforestation, planting trees and caring for the environment to prevent erosion. It is a commitment assumed not only by Coffee Alliance, but also by other institutions. It can be seen that in the intervention area, various organizations have placed posters concerning respect for the environment and tree planting. FONCODES has also distributed seedlings for reforestation purposes paying for this task to be carried out. It is unlikely to find a producer who is unaware of shade management. The importance of protecting forests and soils as a means of conserving the environment is well known.

*“Avoid cutting trees at the headwaters of the rivers, rather plant trees to prevent the soil from sliding and drying out”.* (San Martín coffee producer).

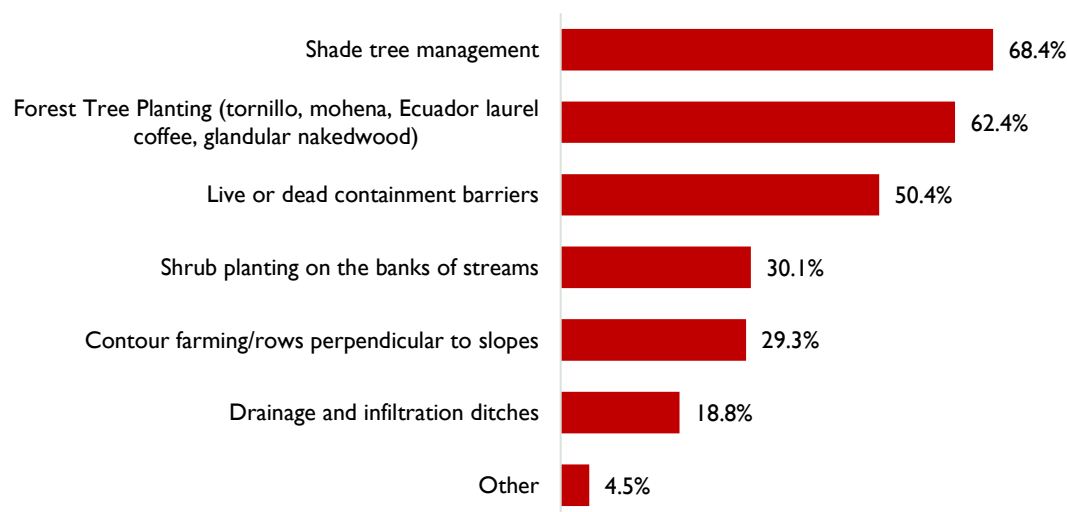
The results for each of the measures that make up this topic are as follows:

- a) Measure 12. 68% of the surveyed farmers stated that they had been trained in shade tree management over the past year by the CAFE Project. This directly reflects progress on the provisions of the measure.
- b) Measure 14. 80% compliance is estimated for this measure, which was calculated based on the number of farmers who declared having received training from the project in any of the following topics over the past year: shade tree management (68.4%); forest tree planting such as tornillo, mohena, Ecuador laurel coffee, and Glandular Nakedwood (62.4%); live or dead containment barriers (50.4%); shrub planting on the banks of streams (30.1%); contour farming/rows perpendicular to slopes (29.3%) or drainage and infiltration ditches (18.8%).
- c) Measure 17. Compliance achieved for this measure was 54%, which represents an average of two dimensions: the percentage of farmers who declared using live barriers: erythrina, vetiveria, pineapple on their plot (66.7%) and those who declared using dead barriers: litter, banana pseudostem and logs (41.7%). Among the respondents who reported not having installed barriers on their plots, the majority justified the fact based on lack of time or knowledge to install them.

Measure 22. This measure reached 78% compliance, which is made up of farmers who declared having installed or having at least one of the following types of trees: mohena (63.8%), tornillo (41.7%) or Ecuador laurel coffee (21.3%).



Graph 8. Coffee Alliance for Excellence. Training in reforestation received by the project over the past year.



## SOLID WASTE AND EFFLUENT MANAGEMENT

This topic has been assessed through the compliance results of 4 environmental mitigation measures, reaching an average compliance of 62%. The results for each of the measures are diverse. For example: Measure 15 achieved 77%, while Measure 10 reached 42% compliance.

In general, it has been found that farmers have extensive knowledge on solid waste and effluent method management and have special sites for their correct use. They are aware of practices for recycling plastic, collecting coffee pulp waste, wastewater and its channeling to infiltration wells, which they apply even with limitations.

Women farmers who have this knowledge are strict in its compliance because they associate the protection of children with environmental care. There are women peasant patrols who have fined their neighbors for throwing garbage in their village and set an example by going out to sweep the streets and collect any contaminating solid waste.

*“Natural disasters have occurred recently due to contamination; that is why we do not throw garbage into the rivers; we collect it and deposit it in one place. We use solid organic waste as fertilizer, and inorganic waste, bags, bottles, we select the garbage”.* (San Martín coffee producer).

Here are the results for each measure.

- a) Measure 3. It reaches an average of 51% compliance, which is an average that combined training and practice responses. Regarding training, 71.1% of the surveyed producers mentioned having received training in the use of a composter and compost production, and 56.3% stated that they had received training in biofertilizer preparation (organic fertilizers). Regarding organic waste disposal generated in the plot and households, 32.5% of the farmers mentioned that they dispose it between the coffee rows and 43.6% composted it.

- b) Measure 9. The 78% compliance result achieved for this measure was calculated as an average between the results on organic waste management (coffee pulp) practiced by 64.3% of the producers and the ways in which they reuse the de-pulping waste. In this second case, 91.3% of those surveyed disposed of the de-pulping waste in one of the following two ways: reusing it together with other harvest waste to prepare organic fertilizers (55.3%) and collecting it in containers for later disposal in specific areas (50%). 8% of the producers leave the coffee pulp waste on the ground, on one side of the plot. This is because they do not have money to make the composter or because they have not yet harvested.
- c) Measure 10. This measure that proposes the construction of small infiltration wells and channels to channel coffee wastewater, avoiding aquifer contamination, reached a 42.3% level of compliance. This percentage represents the producers who declared that they drive the honey water toward sedimentation wells through gutters (28.8%) or to infiltration or vetiver wells (19%) or use both techniques.
- d) Measure 15. 77% of the producers were trained by the project in the last year in some of the issues related to wastewater management. 74.6% of the producers received training in honey water, 64.3% in organic waste management (coffee pulp), 61.9% in non-hazardous inorganic waste management (tuna, oil containers, etc.), and 59.5% were trained in hazardous inorganic waste management (agrochemical containers, etc.).

## WATER SOURCES CONSERVATION

Water sources conservation has two associated environmental measures; however, only measure 20 could be analyzed, which achieved 76% compliance. This result accounts for the farmers who declared having been trained by the project in any of the following topics: vegetation conservation at the headwaters of water sources such as rivers, streams, springs, ravines, wells or lagoons (73.4%); vegetation conservation in the areas on both sides of the water sources (ravines at 5 meters and rivers at 50 meters) reaching 54.8% compliance; and training on water courses contamination due to incorrect pesticide management (46.3 %). Previous experiences of felling trees to plant up to the banks have caused them to verify that the rivers dry up. Because of this they recognize the value of water and the relationship of this activity with forest conservation.

On the qualitative side, two testimonies reflect water conservation knowledge related to the conservation of trees:

*“In the past we used to fell trees and the water would dry up; now, I understood that trees should not be cut down; now we protect the headwaters of rivers”.* (Huánuco coffee producer).

*“...we conserve by not cutting down the trees; we have been given seedlings to plant on the banks”.* (San Martín coffee producer).

## NURSERIES

This item was assessed in the qualitative interviews. The farmers stated that they were trained to install nurseries on their plots to extend or repopulate their crops. Initially, the project considered implementing nurseries only in Associations or Cooperatives, but this situation did not benefit farmers who live far from these organizations because they had to face the cost of moving the seedlings to their

farms. For this reason, it was more appropriate to install nurseries in the farmers' fields, which allows them to choose the most productive and disease-free seeds.

*"Each one makes their own nursery, and it is more productive, resisting more diseases, and classifying the best seedlings"* (Huánuco coffee producer).

*"...the bagged plants to grow there and then move them to the field; it is the first thing that is done, the soil receives a treatment, for microbes"* (San Martín coffee producer).

## SOWING AND HARVESTING WATER

All the producers interviewed are unaware of the sowing and harvesting water topic. They stated that this topic has not been part of any training received, therefore they do not know the procedure. They even think that this topic is not necessary because water is abundant in the jungle as it rains heavily.

### Evaluation Question

2. *Which factors facilitate or hinder compliance with the mitigation measures in the EMMP?*

### Summary of Findings:

- *There are context, institutional, economic, and cultural factors that facilitate or affect compliance with environmental measures.*

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**FINDING 7:** The existence of various institutions working on environmental mitigation measures facilitates compliance with environmental measures. However, the high costs of organic fertilizers, certain beliefs, and the vague wording of the EMMP are factors that hinder compliance therewith.

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Different factors facilitating or hindering compliance with environmental mitigation measures were identified:

a) Context factors

In the field visit, it was found that coffee farmers are highly aware of environmental mitigation measures. This is because, besides Coffee Alliance, there are other institutions in the area that work on the environmental topic. For example, there are public institutions (National Commission for Development and Life without Drugs - DEVIDA, municipalities, Regional Government, Regional Environmental Authority - ARA), international cooperation organizations (United Nations Development Program - UNDP) and, especially, private companies. PERHUSA is the most recognized company for its commitment with Coffee Alliance and because they have technicians in the field assisting farmers both in the production process and in the knowledge and respect for environmental measures.

#### b) Economic factors

On the other hand, economic factors hinder compliance with environmental measures, such as the costs of materials and labor to carry out cultural tasks (fertilization and pest management) or the purchase of costly personal protection equipment. Farmers do not see the compensation in the price per coffee bean for such investments. The costs of inputs for organic fertilization versus the costs of conventional fertilization are considerable. For example, for the same area, 6 bags of island guano are valued at S/ 420 (S/ 70 per bag), while 1.5 bags of urea are valued at S/ 112.50 (S/ 75 per bag). On the other hand, Potassium Sulfate is valued at S/ 125 and Potassium Chloride fluctuates between S/ 60 and S/ 65.

It should be noted that the Coffee Alliance is working with farmers to compost coffee pulp and crop waste to minimize these costs. They are also engaged in the preparation of biol to apply in the farms and in this way contribute to the reduction of coffee production costs.

Wages for weed management have been overcome by using motorized brushcutters. This is the reason for its great acceptance: 51.2% of farmers use motorized brushcutters and 90.1% use machetes. This reality would have to be overcome at the time of the final product sale and since it is organic coffee, the price difference with conventional coffee would have to meet price expectations, but the difference is barely S/ 0.30 to S/ 0.40 cents per kilo.

#### c) Cultural factors

Other types of factors that affect compliance with environmental measures are cultural. Although the producers carry out cultural work, farmers still believe that pruning coffee trees makes them unproductive, which is an inaccurate idea. 32.9% of the producers apply crop association, 27.2% use live barriers, and 73.4% carry out pruning.

#### d) Institutional factors

The factors identified in this field are as follows:

EMMP formulation. One aspect that must be considered for compliance with environmental measures is the Environmental Monitoring and Mitigation Plan itself approved by Coffee Alliance. This document contains measures drafted in a general way, they were not operationalized, nor have indicators or goals been identified. This makes compliance planning, monitoring and analyzing difficult. For example, out of all environmental measures, 9 are written as “encourage”, which may involve training, communication or technical assistance actions. Likewise, the analysis has found repetitive environmental measures, such as the correct use of pesticides and fertilizers, and health care.

On the other hand, environmental measures do not consider that the areas have a special microclimate and that there are differences in Huánuco and San Martín in terms of climate, altitude and type of soil, which affects the cultivation of coffee differently. For example, in areas of high humidity, shade on crops are very thick and eventually generating fungi, which feed diseases. The use of pits is very important throughout the production process, including planting, to know which nutrients are missing, which are in excess, and to carry out the respective maintenance.

Human Resources. Coffee Alliance has an environmental specialist in the field training all staff on environmental topics. Environmental monitoring is carried out continuously, which favors compliance with the measures.

In the interviews with Coffee Alliance zonal teams, lack of awareness of internal and external ECRs, including the recommendations, was evident. Action planning to overcome the observations has not been carried out because they were not aware of the ECR.

Implemented strategies. Coffee Alliance has developed different strategies that favor the implementation and compliance of environmental measures, such as:

- Training for farmers by Coffee Alliance has contributed to a better understanding of compliance with mitigation measures.
- Coffee Alliance has chosen to promote a form of savings called ÚNICA that is widely recognized as beneficial to farmers, because it also promotes formalization by promoting the use of accounting books concerning share subscription and loans granted to its members. This organization that starts from the base is very important to disseminate the degree of responsibility when using common funds. In addition, a large participation of women was observed. This intervention is a form of awareness about savings and loans directly supporting the settlement of farmers, preventing them from migrating to other crops (including illicit ones) and possible deforestation.
- Coffee Alliance is validating new varieties of coffee that have cup quality and thus support the strengthening of this crop. It is known that coffee producers suffered a setback due to the Roya (coffee leaf rust) pest; many lost their plots, became highly indebted, and deeply concerned due to the State's inaction to counter the disease. Consequently, cultivation of the catimor variety became widespread, which is very resistant to diseases, but has no cup quality. Due to this, the producers are requesting support to change the genetic material to be in accordance with the demands of the international market.

#### **Evaluation Question**

3. *Which alternatives contribute to increasing the level of compliance with the mitigation measures in the EMMP?*

#### **Summary of Findings:**

- *Field training strategies and individualized technical assistance show better results for environmental measure compliance.*

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**FINDING 8:**            **Field training strategies and individualized technical assistance show better results for environmental measure compliance.**

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In the interviews carried out during the field visits, it was confirmed that training given by the technical team to the producers was gladly accepted. They commented that training was practical and not just theoretical. As it is known, Coffee Alliance is not a conventional project, it is appealing because it involves the private sector, such as PERHUSA, which is a purchasing company. The company appoints its field technicians to training farmers and has also been mentioned by producers who are contributing with mitigation measures compliance.

“Constant training on environmental practices, farmers become aware and are all well trained for inspection, they already know how to do it, other neighbors see such practices and emulate them; they no longer throw away bottles anywhere as they realize that with time their soil becomes unproductive.” (Huánuco coffee farmer).

#### Evaluation Question

4. To what extent can stakeholders contribute to a higher level of compliance with mitigation measures in the EMMP?

#### Summary of Findings:

- The mitigation measures in the EMMP are hardly known by government stakeholders.
- Women have a greater commitment than men concerning compliance with environmental measures because they relate it to family care.

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**FINDING 9:** The mitigation measures in the EMMP are hardly known by government stakeholders.

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DEVIDA interviewees have some knowledge of Coffee Alliance’s EMMP environmental mitigation measures. They positively value the project’s work, especially the sound learning they are obtaining regarding organic fertilizer production and the agroforestry issues that contributes to the efficiency of environmental measures. Another aspect valued by the people interviewed by DEVIDA about Coffee Alliance is the work on land use planning with conservation areas.

*“We have seen in Monzón how coffee is complemented with the production of biofertilizers; it is working very well, because the work was part of the activity”. (DEVIDA official)*

However, they consider the need to validate technological packages among the current stakeholders in the areas that have the same objective. Likewise, environmental mitigation measures should be disseminated and unified in the same way as technological packages.

*“That we speak the same language, more than anything; as institutions we need to define things as we have different ways of working. The EMMP should be disclosed to all the stakeholders in the areas to know the scope and its requirements so that they can contribute to their fulfillment”. (DEVIDA official)*

The Autonomous Regional Environmental Authority has advised that they are working on a climate change coordination board and that they expect that all projects financed by international cooperation will participate to unify criteria on mitigation measures and especially on how to carry out this process. They are not aware of the EMMP of the project.

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**FINDING 10:** Women have a greater commitment than men concerning compliance with environmental measures because they relate it to family care.

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Coffee Alliance works efficiently with women's organizations. In each area visited, the presence of gender technicians appointed to field work was verified and the result has been a high degree of women's organizations in relation to associations, cooperatives or committees. Women not only assume secretarial roles but also assume leadership roles, eventually presiding over the organizations. Peasant patrols exclusively composed of women were verified, who implemented cleaning measures into their community, collecting solid waste, and prohibiting littering in common spaces where people walk.



Women's organizations have allowed women empowerment, their participation in the entire coffee production process, and has not limited them to domestic issues. In addition, they are the best defenders of the environment because they associate it with family care. They reported participating in the training provided by Coffee Alliance and that they are managing their plots, showing their husbands what they can obtain by applying good agricultural and environmental practices. Great distress was verified in the event of a pest infestation; there is late reaction due to lack of coordination with state institutions to combat pests as their crops are the most damaged.

As mentioned, the CAFE Project has placed great emphasis on the gender issue in the intervention areas, achieving success and acceptance by the communities. The integration of women in the production process began with their participation in training activities, when replacing their husbands. Men felt that they no longer needed training. Women took advantage of this opportunity and today they understand and practice an information from the taught technological package.

# PERU CACAO ALLIANCE - PHASE II

## Evaluation Question

1. What is the level of compliance of mitigation measures presented in the EMMP?

## Summary of Findings

- Average compliance with environmental mitigation measures of Peru Cacao Alliance – Phase II concerning 8 EMMP topics achieved an implementation level above 50%. The measures with the greatest progress are associated with pesticide use and management (90%), while harvest, post-harvest and storage, and reforestation and erosion control had a relatively lower compliance.

**FINDING 11:** Average compliance with environmental mitigation measures achieved an implementation level above 50%. The measures with the greatest progress are associated with pesticide use and management (90%), while harvest, post-harvest and storage, and reforestation and erosion control had a relatively lower compliance.

The EMMP of Peru Cacao Alliance - Phase II contains 66 environmental mitigation measures. For this study, the measures have been grouped into eight topics according to the problems that may arise in the cacao production chain. The areas are as follows: i) harvest, post-harvest and storage, i) pesticide use and management, iii) plot expansion, iv) fertilization and manuring, v) reforestation and erosion control, vi) solid waste and effluents management, vii) water sources conservation, and viii) land prospecting and selection.

Out of 66 environmental mitigation measures, 38 could be evaluated, 16 were found entirely or partially repeated in others (see Table 10) and 13 could not be observed (Table 11). As explained below, this report analyzes the compliance results for each observed measure and the average compliance for each of the eight topics.

Table 10. Peru Cacao Alliance - Phase II. EMMP Environmental mitigation measures repeated in other measures.

NO.	MEASURE	EMMP GOALS	REPEATED MEASURE
41	Implementation of a collection system with gutters for mucilage evacuation transporting waste to containers for later use, to septic tanks or pretreatment ponds (effluent stabilization).	60%	2
65	Training in module operation and maintenance and cacao benefits to partners/farmers, complying with differentiated quality standards, as well as the current environmental regulations.	65%	6
45	Training in good cacao drying practices.	50%	43
16	Producers will be informed of the importance of PERSUAP, especially indicating that it is a guide for Integrated Pest Management (IPM), prioritizing the application of organic, biological and preventive approaches.	90%	15



NO.	MEASURE	EMMP GOALS	REPEATED MEASURE
18	Good practices training in safe use of pesticides.		15
28	Training in Integrated Pest Management (IPM) for partners/farmers, technical staff and extension agents.	80%	15
60	Train farmers/partners and technical personnel in the Safe Use of Pesticides, recommending the use of protective clothing and implements and cleaning of application implements.	60%	15
66	Train partners/farmers in fertigation systems operation and maintenance, complying with environmental and technical regulations required.	60%	8
58	Train partners/farmers and technical staff of the project in cover and green manures.	80%	25
53	Training in proper crop management with emphasis on the protection of covered soils and fertilization practices based on sources of major elements (nitrogen, potassium, sulfur, calcium, manganese and phosphorus) and minor elements (copper, zinc, molybdenum, boron, manganese, and iron) to reduce the pressure to change land use, increasing productivity.	60%	49
10	Recommend the implementation of artisanal septic tanks or a collection system to treat "honey water". Artisanal septic tanks can consist of a 1mt.x1mt.x1mt deep filter ditch or trickling well with 2" gravel material for the first 50 cm and with 1" gravel material the following 25 cm, and concrete the last 25 cm (surface).	NI	9
11	In properties that have high water table, another area will be located or an infiltration ditch, of less depth compensating for width, will be made, avoiding pools of standing "honey water", which will be applied in exceptional cases. Likewise, a system to collect the "honey water" in vats will be implemented, to later dispose them in composting systems.	NI	9
22	Septic tank implementation, to evacuate waste from "honey water", and "honey water" collection systems implementation will be promoted.	75%	9
32	Solid waste from PVC remains (tubes), hose remains, contaminating fertigation containers, oil and lubricant remains, fuel containers, flammable materials and others will be temporarily disposed of in strategically selected places (warehouses) for later final disposal.	80%	30
37	The program will not intervene in PNA, PPF, and forest concessions.	NI	36
38	Train partners/farmers and technical personnel in zoning of intervention areas.	NI	36

Note: NI = no information in the EMMP

Table 11. Peru Cacao Alliance - Phase II. EMMP Environmental mitigation measures not observed.

NO.	MEASURE	EMMP GOAL
6	Training in module operation and maintenance and cacao benefits for partners/farmers, complying with differentiated quality standards, as well as the current environmental regulations.	30%
12	Training in family benefit module operation and maintenance for members/farmers, complying with the required environmental and technical regulations.	30%
14	Train partners/farmers in cacao seedlings production in nurseries, complying with the environmental and technical regulations required.	NI

NO.	MEASURE	EMMP GOAL
21	Train partners/farmers and technical staff on issues inherent to rainwater sowing and harvesting.	NI
26	A participatory training program will be implemented using “Model Plots” where producers have correctly implemented good agricultural and environmental practices.	NI
33	Carry out thorough cleaning of the nursery (reed, strips, boards and biodegradable bags); waste will be located in a specific place on the side of the cacao plot for its subsequent decomposition. Likewise, it is recommended to collect environmental liabilities (wires, polyethylene bags, plastic containers, Rashell mesh, and others), which will be placed in sacks and transferred to a temporary warehouse for final disposal.	NI
55	Recommend planting forest trees around cacao plots, edges of ravines, and secondary forest being recovered, etc.	80%
56	Training on burning practices and climate change vulnerability.	NI
59	An occupational health plan will be implemented, which will contain training programs, a meeting program, “5-minute talks”, etc. for the duration of the project, under the responsibility of field technicians.	NI
61	Each Sub-donation operator must develop its own EMMP to identify environmental impacts, as well as include prevention, mitigation and control measures; according to the provisions of USAID and Peruvian environmental regulations.	NI
62	Prepare prior training and design a methodological guide for sub-donors according to the activities to be carried out.	NI
63	Delivery of prior information to sub-donors such as the zoning of the area to be intervened, locating protected natural areas, permanent production forest, forest concessions, and others for accurate land prospecting and selection planning.	NI
54	Preparation of guides or tri-fold brochures that serve as tools to help producers with plot control.	NI

Note: NI = no information in the EMMP

The results of the EMMP evaluation of Peru Cacao Alliance - Phase II, based on the 38 measures observed, show different levels of compliance. Meanwhile, as shown in the following summary graph and Table 12, each of the 8 work areas achieved average compliance above 50%. The measures related to pesticide use and management (90.3%), land prospecting and selection, and water sources conservation areas that reached 88.2% levels of compliance were those that showed the highest level of implementation. On the other hand, the harvest, post-harvest and storage, and reforestation and erosion control areas were those that showed relatively less progress.

Graph 9. Peru Cacao Alliance - Phase II. Compliance with environmental mitigation measures according to topics.

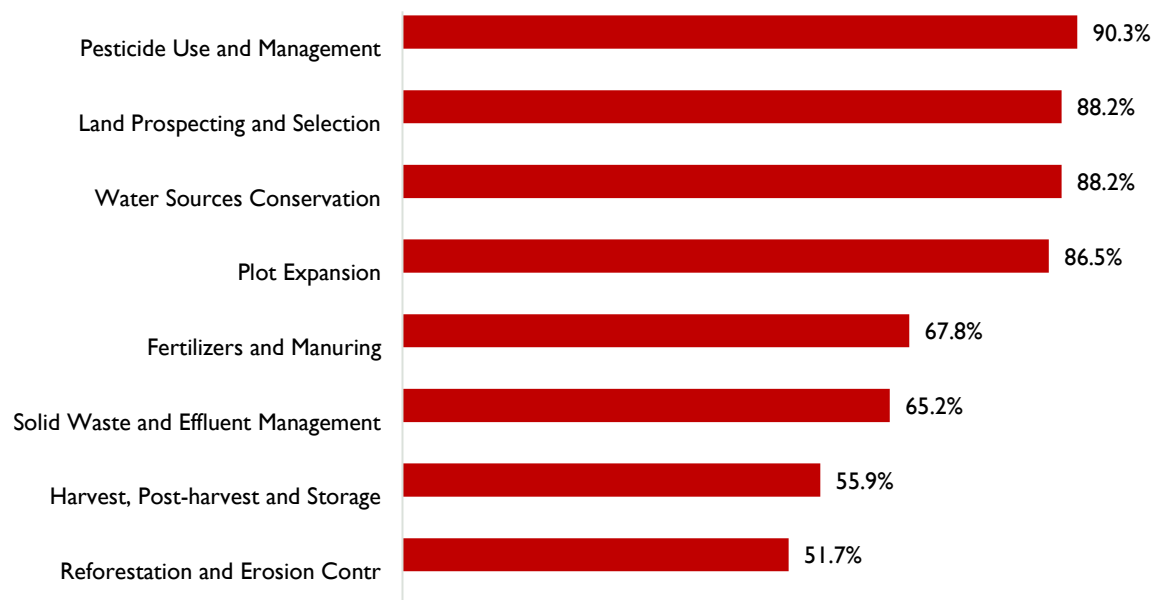


Table 12. Peru Cacao Alliance - Phase II. Compliance with EMMP environmental mitigation measures.

NO.	MEASURE	EMMP GOALS	COMPLIANCE (%)
<b>Harvest, Post-Harvest and Storage</b>			<b>55.9%</b>
<b>Centralized Benefit Module</b>			
1	The cacao centralized benefit module should be located at least 50 m from any water course, in a non-floodable area with high groundwater table.	80%	62.5%
2	Avoid placing fermentation boxes, either rectangular or stacked, directly on the ground. Hence, the deployment of a collection system with gutters for mucilage removal will be encouraged in order to facilitate waste transport into containers for later use, septic tanks or pre-treatment ponds (effluent stabilization).	NI	9.7%
3	Roofs will preferably be made of wood and covered with transparent corrugated plastic, palm thatch or zinc roofing sheets.	NI	92.3%
4	Install at least one solid waste container.	NI	66.7%
5	Deploy signposting.	NI	53.9%
No number	Basic toilet facilities or a latrine should be operating, improved or built.	NI	84.6%
<b>Family Benefit Module</b>			
42	Benefit modules should be located away from housing and areas with offensive odors, such as fertilizer deposit, chicken coops and fuel depot. Additionally, fermentation boxes should be placed inside a roofed construction that prevents strong air drafts.	60%	70.0%

NO.	MEASURE	EMMP GOALS	COMPLIANCE (%)
13	Encourage biodegradable plastic bag usage (natural polymer derivatives) in cacao seedling production.	30%	40.4%
43	Train partners/farmers and project technical personnel in cacao post-harvest management.	NI	56.2%
44	For the drying process, polyethylene sacks will be deployed to avoid cacao beans contamination due to contact with the ground and/or the concrete slab.	50%	70.6%
46	Establish adequate management mechanisms in collection center warehouses such as convenient location, adequate ventilation and protection against rainfall, use of containers that favor aeration and drying and use of pallets for stacking bags so that they do not enter into direct contact with the ground. Control and check for rodents.	50%	8.5%
<b>Pesticide Use and Management</b>			<b>90.3%</b>
15	Train partners/farmers and Project technical personnel in IPM and PERSUAP.	90%	71.0%
17	Recommend the use of personal protection equipment (masks, glasses, impervious clothing, etc.).	60%	100.0%
19	Pesticide storage should be done safely, in cool and dry environments; avoiding exposure to humid areas. They must be in closed environments to avoid the presence of pests and domestic animals or within reach of children.	50%	96.7%
20	Encourage the location of safe areas for pesticide preparation and equipment and material washing, away from water sources, performing fumigation equipment "triple washing" and reusing the washing water in the fumigated crop.	75%	93.5%
<b>Plot Expansion</b>			<b>86.5%</b>
23	Use pest-free and disease-free genetic material from identified and guaranteed plots.	80%	77.0%
29	Promote regular equipment maintenance to avoid leaks and unnecessary fuel and lubricant consumption, including plastic canvas on the floor of fuel and lubricant tanks.	80%	96.0%
<b>Fertilizers and Manuring</b>			<b>67.8%</b>
7	Encourage reforestation with species growing in the same zone around the fertigation water system intake area, thus helping control landslides as a result of slope gradient.	70%	3.7%
8	Train partners/farmers in fertigation system operation and maintenance, in compliance with required environmental and technical standards.	NI	100.0%
24	Encourage strict use of the Comprehensive Nutrition and Timely Pruning (NIPO) technique.	80%	100.0%
25	Encourage composting piling up approximately 100 pods into a small "heap"; then, cover them with transparent or black plastic.	60%	78.2%
27	Suggest weed control based on cultural management (use of mulch, shade, cover, etc.) with minimum use of herbicides.	90%	98.8%
50	Implement a manuring plan.	80%	50.0%

NO.	MEASURE	EMMP GOALS	COMPLIANCE (%)
54	Introduce localized irrigation techniques; keep living and dead vegetal cover for cacao micro-pollinators; keep fallen leaves and soil organic matter; carry out proper thinning.	NI	66.7%
58	Train partners/farmers and the project's technical staff in covers and green manuring.	80%	44.9%
<b>Reforestation and Erosion Control</b>			<b>51.7%</b>
47	Encourage deployment of living barriers using species such as Vetiveria zizanioides, Erythrina sp., Inga edulis, Pinto peanut (Arachis pinto), Bolaina, Capirona, Glandular Nakedwood, Pencilwood.	60%	98.1%
57	Encourage deployment of leguminous soil living mulch, such as Canavalia, Calisia, etc., as well as dead cover using weed waste, branch residues after pruning, decaying logs, banana pseudostems, and other plant residues found in the plot surroundings.	30%	23.5%
48	Deployment of 50 x 40 cm (W x D) infiltration ditches, which will allow for soil stability in slopes greater than 20%.	60%	25.6%
49	Train partners/farmers and project technical personnel in soil conservation and management practices.	90%	100.0%
51	Carry out 0.80 to 1.0 m deep excavations (test pits) to determine soil compaction level (soils characterized by a low oxygen, water and nutrient uptake) and groundwater table (distance of water from ground surface).	30%	35.0%
52	In case of identifying plots with shallow soils due to the presence of water (high water table) and floodable soils, drains should be opened for excessive water egress from the plots.	40%	27.8%
<b>Solid Waste and Effluent Management</b>			<b>65.2%</b>
31	Encourage a safe stockpiling of waste (pesticide containers) in sacks. This waste material will be transported to a main collection point built in the hamlet. Their final disposal will be ordered following coordination with SENASA and certified solid waste management companies.	80%	95.7%
9	Family benefit modules should be located away from housing and convey "honey water" to septic tanks or handcrafted collection systems.	30%	8.1%
30	Promote safe collection of inorganic solid waste for agricultural use (plastics, cans, bags, etc.) for their subsequent disposal in temporary places.	NI	91.7%
<b>Water Sources Conservation</b>			<b>88.2%</b>
39	The margin strip land area will be determined based on the dimensions of the waterway or riverbed and may have a variable width, from a minimum of four (4) meters to the width necessary to carry out protection and conservation activities of the natural water source, allow primary use, free passage, providing surveillance roads or other services. Likewise, dimensions may vary according to the established uses and customs, as long as they do not pose a human health and life risk. (Regulations of Water Resources Act 29338).	80%	76.3%

NO.	MEASURE	EMMP GOALS	COMPLIANCE (%)
40	Promote the use of live vegetation containment barriers (Erithrina edulis, Bambusa sp and/or forest tree planting) to avoid marginal strip undermining	80%	100.0%
<b>Land Prospecting and Selection</b>			<b>88.2%</b>
34	Slash and burn of primary forests or secondary forests, older than 5 years, will not be promoted; especially during land installation and nursery preparation of the cacao crop.	70%	75.3%
35	Train project partners/farmers and the project's technical personnel in biodiversity conservation.	NI	100.0%
36	Use zoning maps for areas to intervene, identifying whether the areas are located near Protected Natural Areas (PNA), Permanent Production Forest (PPF) or in Buffer Zones.	100%	89.3%

Note: NI = no information in the EMMP

Source: Environmental Compliance Review Survey (ECR) 2019

## HARVEST, POST-HARVEST AND STORAGE

This area included 11 observed environmental mitigation measures; 6 of them related to the centralized benefit modules, measures 1, 2, 3, 4, 5; and an additional measure identified without a number, and 5 measures related to the family benefit modules, measures 42, 13, 43, 44, 46. The average level of compliance in this topic, considering the total number of measures, is 56%. Meanwhile, levels of compliance vary significantly between measures.

As can be seen in the following graph, among the measures related to the centralized benefit module, Measure 3 that refers to roof construction of the modules reached the highest level of compliance with 92.3% among the surveyed producers who declared that they belonged to an association that had a centralized module. The next most widely implemented measure was the so-called unnumbered measure, which is to maintain operational or improve basic toilet facilities. 84.6% of producers declared that the centralized processing benefit modules have basic toilet facilities or latrines.

On the other hand, Measure 2, related to fermenting boxes management, had the least progress among those related to the centralized module, reaching 9.7% of implementation. According to the interviews conducted and the testimonies collected, there are economic barriers to investing in gutters, storage conditioning and biodegradable bags; as a result of this, producers declare having a low level of compliance concerning these environmental measures.

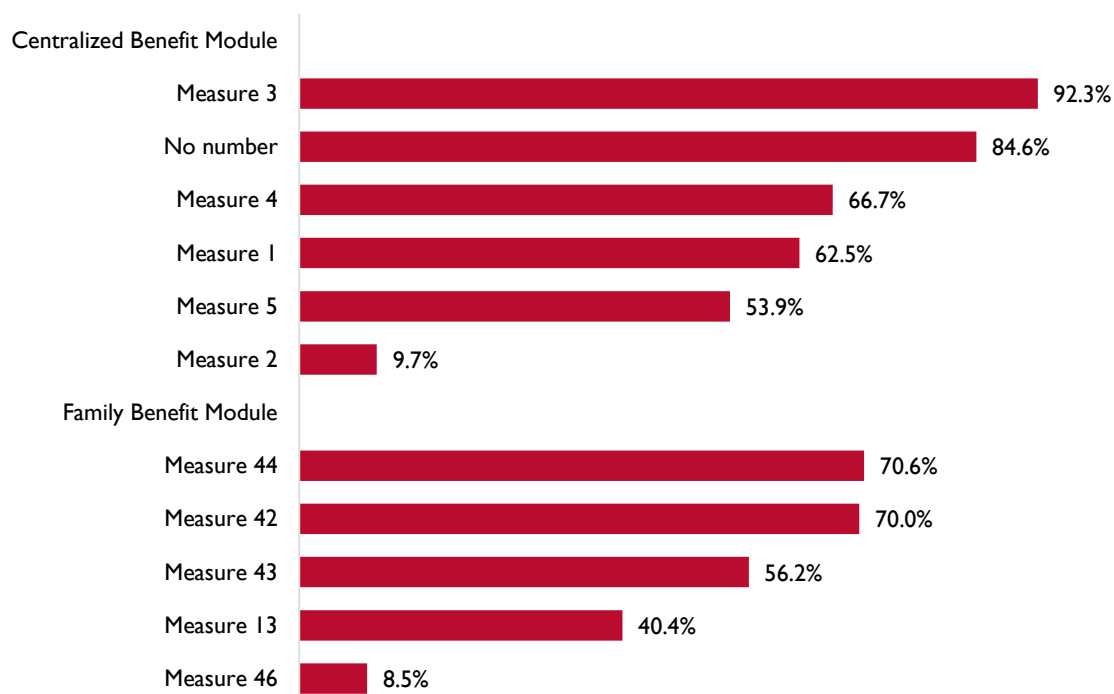
*“In terms of fermentation, there are drain pipes that go to some digesters, where the water is treated”.*  
(Cacao producer from Ucayali)

*“We do carry out post-harvest work, they teach us how to, but we don't have the boxes to do it, they only teach us how to; we ferment in sacks, we put it on a table and cover it with plastic, for three to four days, and we dry it on blankets under the sun”.* (Cacao producer from Ucayali)

In the case of measures related to the family benefit modules, Measures 44 and 42 achieved the greatest progress with implementation levels of 70.6% and 70%, respectively. However, it should be noted that these results are based on the subsample of families that have said modules, which represent 7.3% of the producer families according to the survey carried out.

The results for each of the measures are explained below.

Graph 10. Peru Cacao Alliance - Phase II. Harvest, Post-harvest and storage. Compliance with measures.



*About the centralized benefit module:*

In principle, it should be mentioned that the questions on the centralized benefit module were applied to the subgroup of interviewed producers who declared belonging to an association which has a centralized module. In this regard, it was found that only 38.7% of producers responded that they participate in some type of association, of which 63.5% declared that their associations have centralized benefit modules.

- a) Measure 1. The observed level of compliance was 62.5%, which represents the percentage of farmers from associations whose centralized benefit module is located more than 50 meters from the nearest watercourse, a distance determined in the Cacao Alliance EMMP. Meanwhile, the goal for this measure was 80%, being the only measure on the centralized benefit module for which a goal was identified in the EMMP.
- b) Measure 2. The project achieved a 9.7% level of compliance which represents the percentage of producers who declared, on the centralized module of their association, that the fermenting boxes are placed on a piece of furniture, as suggested by the measure for handling fermenting boxes. However, the main reason for the limited progress in this goal is reflected in the fact that 77% of producers in associations with a centralized module have no fermenting boxes.
- c) Measure 3. This was the measure with the highest compliance. The harvest, post-harvest and storage area, reached 92.3% compliance, which corresponds to a percentage of producers who declared that the centralized cacao benefit module of their association has a wooden roof,

transparent corrugated plastic, palm thatch or zinc roofing sheets, which are the recommended materials in the measure.

- d) Measure 4. It achieved 66.7% implementation, which is the percentage of farmers who declared that the centralized cacao module of their association has at least one solid waste container; 30.7% declared not being aware.
- e) Measure 5. It reached 53.9% progress, which is a percentage of farmers who declared that the centralized cacao module had signposting deployed. On the other hand, 30.7% declared not being aware.
- f) Measure without a number. During the EMMP review, a measure was identified stating that basic toilet facilities or a latrine should be maintained operational, improved or built in reference to the centralized benefit module, which did not have a number. In this regard, 84.6% of the producers in associations with a centralized cacao module indicated that they have toilet facilities or latrines. 48.7% have toilet facilities and 35.9% have latrines.

*About the family benefit module:*

Compliance with the following measures was estimated based on farmers who declared having a family benefit module. Only 7.4% of the respondents had this module, 12 families out of 165 respondents.

- a) Measure 42. 70% of the farmers who have a family benefit module comply with any of the aspects recommended in this measure, while the goal for this indicator is 60%. 67% indicate that the family module is within a structure with a roof, 58% indicate that it is more than 50m from their home, 50% indicate that this module is more than 50m from animals and children, 42% affirm that the family module is 50m from the fuel warehouse, and 33% indicate that the fertilizer warehouse is also located at a distance greater than 50m.
- b) Measure 13. It achieved a 40.4% level of compliance above the target value of 30% established in the EMMP. This percentage represents farmers who have a family benefit module and who affirmed that they use biodegradable bags (27.3%) or local materials and inputs that are easily decomposed (24.8%), such as palm leaves or rounded logs in the production of cacao seedlings.
- c) Measure 43. This measure achieved 56.2%, compliance, representing a percentage of farmers who claimed to have received training between October and September 2019 on cacao post-harvest management. No target was identified in the EMMP for this measure.
- d) Measure 44. The implementation level achieved was 70.6%, the highest compliance among the measures related to the family benefit module, above the 50% target value proposed in the EMMP. The compliance measure refers to the use of black polyethylene blankets (68.7%) or pallets (3.7%) during cacao drying.
- e) Measure 46. The progress achieved was 8.5% which represents the percentage of farmers who declare using the following 3 measures to ensure good storage in the family benefit module: i) warehouse with ventilation (44.2%), warehouse with protection against rainfall (40.3%), and pallets to stack bags (25.6%). It should be noted that the goal set in the EMMP for this measure was 50%.



## PESTICIDE USE AND MANAGEMENT

In this topic, the 4 environmental mitigation measures in the EMMP that could be observed are analyzed, verifying that on average they reach a 90% level of compliance. They show the highest compliance among the eight topics that the EMMP measures address.

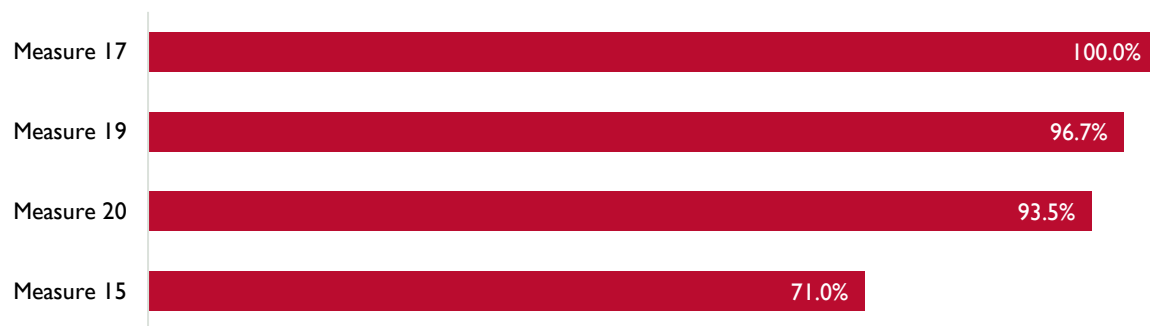
It should be noted that part of the farmers belongs to associations that have an organic seal; therefore, within the requirements is the application of organic management. In the focus groups that were carried out with leaders of organizations, the participants stated that some producers, in order to increase their income, market non-organic cacao as an organic product. The following testimony accounts for the aforementioned:



*“All associations are always guided by the issue of organic certification, but there is a limitation. The negative aspect is that we do not have other options at hand, we hear about the availability of bio, biocides, but its effectiveness in the field is low. Then, in their desperation, even though they are organic, farmers apply insecticides. Ultimately, they say it is their plot and we cannot be there all the time supervising; that is our limitation”.* (Cacao producer from San Martín).

Among the 4 environmental mitigation measures, as can be seen in the following graph, measures 17, 19 and 20 achieved compliance above 90%, which are results that surpassed by far the goals set in the EMMP. On the other hand, although Measure 15 achieved 71% compliance, it did not reach the 90% goal established.

Graph 11. Peru Cacao Alliance Phase II. Pesticide use and management. Compliance with measures.



- a) Measure 15. 71% of the farmers declared that they had received training from the project in any of the following topics: alternative methods for pest control (73.2%), pesticide use (47.9%), personal protection equipment use (36.6%), equipment and materials washing (31%), health and environmental risks due to pesticides use (32.4%), pesticide preparation (29.6%), evaluation of pest characteristics prior to pesticide application (26.8%), pesticide storage (22.5%), and proper disposal of containers with pesticide waste (17.1%).

- b) Measure 17. 100% compliance was found, which reflects the percentage of farmers who claimed to use any of the following personal protection equipment when handling chemical products: rubber boots (91%), clean cloth or mouth and nose mask (52.2%), safety glasses (37.3%), plastic, not fabric-made gloves (31.3%), and plastic to cover their back to prevent direct contact with backpack (22.4%)
- c) Measure 19. This measure reached 96.5% compliance, which corresponds to the percentage of farmers who declared any of the following three safety measures to prevent children and pets from entering the space where pesticides are stored: the space where pesticides are kept is located outside the home in a specific area for said activity (76.7%), the space has a door and a padlock or latch, chains or wires (46.7%), the space is fenced with mesh (6.7%).
- d) Measure 20. This measure achieved 93.5% compliance, which accounts for the percentage of farmers who indicated that they prepare pesticides in one of the following places: outside their home (49.1%), away from a water source/at least 20 meters far (47.4% ), in a place without access for children and animals (24.6%) or in an environment with ventilation (21.1%), and that also declared that they washed equipment and fumigation materials away from water sources (71.4%) or equipment was washed at least 3 times (55.4%).

## PLOT EXPANSION

The issue of plot expansion has been assessed based on the compliance of Measures 23 and 29, and it can be concluded that the project achieved an average compliance of 86.5%. Measure 23 achieved 77% compliance, which is slightly below the EMMP target of 80%. Measure 29, on the other hand, achieved 96% compliance; a percentage that is significantly above the target value of 80%.

Among the producers surveyed, there was a preference for cultivation of the CCN51 variety (84.6%), while fine and aromatic clones reached 37%. The opinions collected in the field on cacao varieties expressed discomfort in some areas, where they mentioned the low productivity of fine and aromatic clones and for the clones being susceptible to diseases. The farmers recognize their quality; however, they argue that buying companies do not reward the quality of the cacao; the CCN51 clones offer greater resistance to disease and higher productivity. However, their quality is not as good as the quality of a fine and aromatic clone, and therefore, the price is also lower.

*“The reason is probably that there are too many plagues, and they are difficult to control. We have to be there all the time”.* (Leaders of Cacao Farmers in Huánuco).

The following quote illustrates what farmers have said about not getting the productivity they were told they would get, and that pests and diseases were a constant problem in this fine and aromatic variety.

*“I think the Cacao Alliance project wanted to do something different, trying to enter into the specialization of fine and aromatic cacao, which is good. The good thing is that it has been identified that they are indeed good; what must have failed, however, is the strategy and the lack of a demand approach. Besides, people have put many obstacles in its way. For me, the proposed aromatic cacao was good, but people did not trust the proposal; complaints about the buds, that is the main issue being discussed, that the buds are productive, but that they are susceptible to disease, that they do not produce, and that the price does not justify it. There are several*

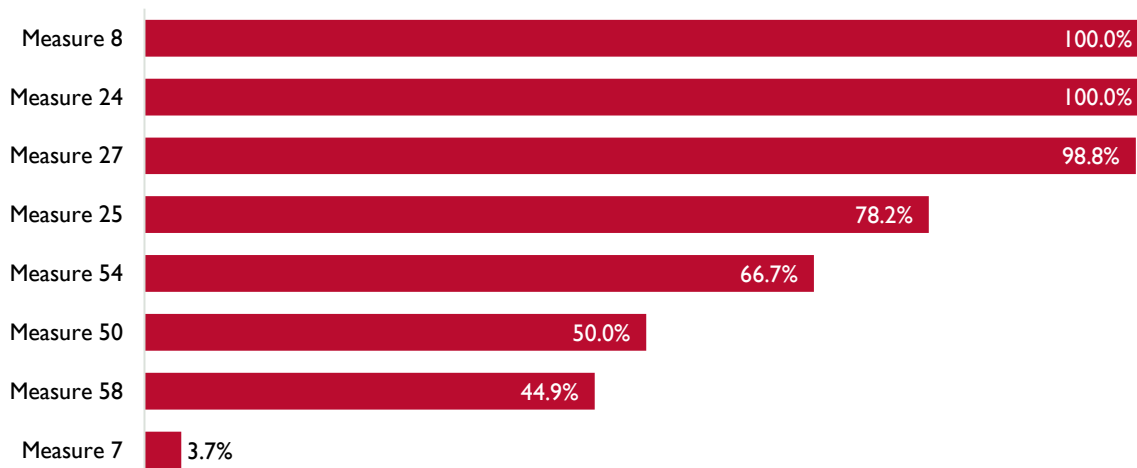
arguments, but for me they are weak. The cause needs to be determined; it could be related to the soil, it could be management, or it could simply be the farmer's opinion or perception. And one of the causes that could be true is that as large areas were covered, low-quality materials were purchased" (Leader of Cacao Farmers in Ucayali).

- a) Measure 23. This measure refers to the characteristics of the cacao that has been and can be used in crops; 76.7% stated that it must be free of pests or diseases (54.3%) or that it must come from identified and guaranteed plots (34.1%)
- b) Measure 29. A total of 96% of the farmers reported they had received training over the past year, in one of the following three subjects: Maintenance Costs (56.3%), Maintenance Instructions required by type of equipment (40.6%), Frequency of required checks on equipment (34.4%)

## FERTILIZERS & MANURING

In this area, the level of compliance with the environmental mitigation measures subscribed to in the EMMP reached 67.9%, which is the average of the progress in the 8 measures that comprise this area. On the one hand, Measure 8 related to training on fertigation systems, and Measure 24 related to the promotion of the use of integral nutrition and timely pruning techniques (NIPO), which were the ones that reached full compliance (100%), while Measure 7 achieved a 3.7% implementation. Six of the eight measures in this area have a target established in the EMMP. Specific details of this comparison between target and compliance are presented below, within the results for each measure.

Graph 12. Peru Cacao Alliance - Phase II. Fertilizers and manuring. EMMP Compliance.



- a) Measure 7. 3.7% of farmers mentioned that they have a fertigation system installed on their plot, while the target set for this indicator in the EMMP was 70%. In the interviews, the farmers mentioned that the training should have been differentiated on the topic of organic cacao cultivation and on conventional cultivation, as these are two different practices. The fact that they are not differentiated creates confusion for farmers when it comes to implementation.

- b) Measure 8. 100% of the farmers surveyed stated that they had received training in the past year in one of the following topics: Cleaning of the fertigation system (72.2%), Recording periodic maintenance of the system (33.3%), Reforestation in areas where water is collected for the fertigation system (33.3%), Installation of wells and their respective covers, avoiding being a source of infection (27.8%), and on Continuous maintenance of motor pumps (16.7%). It should be noted that for this measure, there was no goal set in the EMMP.
- c) Measure 24. This measure also achieved 100% compliance, which is above the EMMP target of 80%. This result represents the percentage of producers that declared to perform some of the following practices of integral nutrition and timely pruning - NIPO: Pruning of the crop considering the age of the plant (92.9%), Application of organic matter to the soil (39.0%) and Soil management and conservation (30.3%).
- d) Measure 25. 78.2% of the farmers surveyed said that over the past year, they had received training from the project in the preparation and use of organic fertilizers (61.5%) or manuring (39.6%).

In addition, the following testimony provides guidelines for the work of the Cacao Alliance on the subject of manuring in order to increase its effectiveness: What the farmers ask for is that when the training is given, it should be explicitly stated whether it is for organic agriculture or for conventional agriculture and that they should not be called for a training without that distinction.

*“The Alliance has promoted mostly conventional fertilizers, but not so many organic fertilizers. I sell both, so the conventional one will always work. However, they always provide training in both conventional and organic fertilizers, which is a bit confusing, so the farmers choose to use the conventional fertilizer, as it ends up to be easier”* (Cacao Producer from San Martín).

Finally, it is worth mentioning that the percentage of composting carried out by farmers is 28.2%. In short, the farmers have the knowledge; however, they compost because they do not consider it necessary (40.2%), because they do not have time (29.1%), because they do not have the money to do it (15.7%), and 15% for other reasons, the most frequent being lack of knowledge.

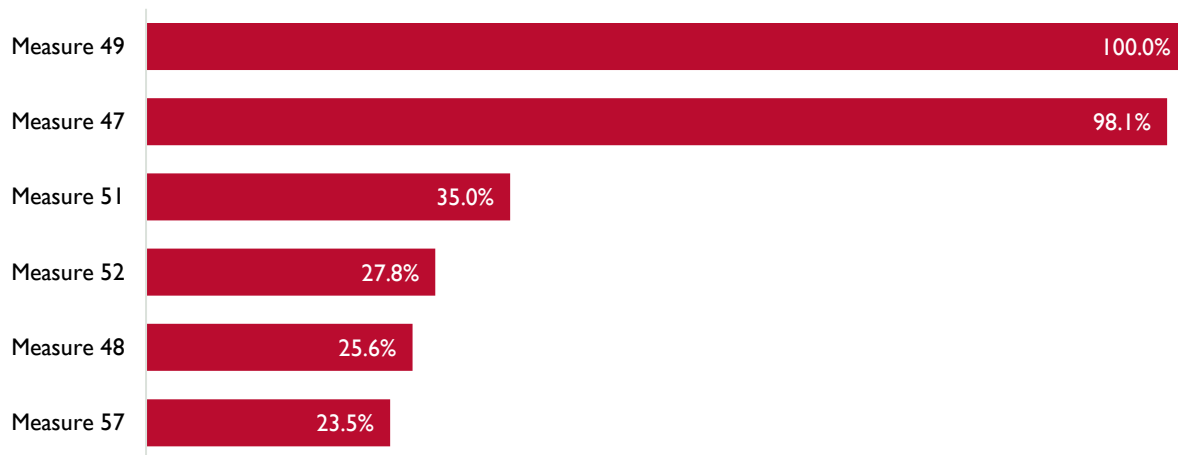
- e) Measure 27. 98.8% of the people mention some of the following methods as being used for weed control: Mechanical control/motorized brush cutter (73.6%), manual control/live cover or machete (71.8%), cultural control (mulch, shade, cover), 4.3%. The compliance result for this measure exceeds the 90% target established in the EMMP for this measure.
- f) Measure 50. 50% of the farmers surveyed state that they have a fertilization plan. However, the target for this measure was 80%.
- g) Measure 54. The measure on localized irrigation techniques revealed a progress of 66.7%, which represents the percentage of farmers who adopted one of the following localized irrigation techniques: drip irrigation (44.4%), micro-hose (22.2%) or micro-sprinkler (5.5%). It should be noted that no target was identified for the EMMP associated with this measure.

- h) Measure 58. 44.9% of farmers stated that they had received training over the past year on planting legumes, a topic that involves coverage and green fertilizers. The target for this measure was 80%.

## REFORESTATION & EROSION CONTROL

In this area, the EMMP includes 6 environmental mitigation measures which achieved an average compliance of 51.7%. As can be seen in the graph below, Measure 49, related to training linked to soil management and conservation, achieved the highest level of compliance (100%), which exceeded the target set in the EMMP of 90%. Measure 47, related to the promotion of living barriers, was the second highest (98.1%), while the EMMP goal was 60%. On the other hand, Measure 57 on promoting the installation of live or dead coverage showed the lowest percentage of compliance with 23.5%, while the objective set was to reach 30%.

Graph 13. Peru Cacao Alliance - Phase II. Reforestation and erosion Control. EMMP compliance.



- a) Measure 47. 98.1% of farmers surveyed stated that they had installed live barriers such as common grass or vetiver grass, *eritrina*, coral bean (*palo vivo*), life fences, *amasisa*, guava, pacay, *Inga edulis* (*shimbillo*) (87.7%) or dead barriers such as weed waste, remains of branches from pruning, decomposition trunks, pseudostems of bananas and other remains (26.4%).
- b) Measure 57. 23.5% of the cacao producers surveyed declared they have installed at least one of the following species in their plot: Kudzu (17.3%), Canavalia (5.6%) or *Centrosema* (1.9%). This was the lowest compliance measure achieved in the reforestation and erosion control area. This result is below the target of 30% set in the EMMP.

As for the use of reforestation species, it was found that their use is limited, being the sowing of guava the most implemented in the areas, reaching 49.7%. The reason why farmers do not use it more often, is because they do not believe it is necessary.

*“Not all of them, in one way or another, because of the problem of climate change, and because cacao, as it is humid, it does not want shade. It used to be handled with shade. Normally they use*

*guava, but only until the cacao begins to produce. Four or five years later they cut it, leaving only a few of them”.*

- c) Measure 48. 25.6% of farmers declared that their plot had infiltration ditches, while the target for this measure established in the EMMP was 60%.
- d) Measure 49. 100% of those surveyed stated that they had received training during the past year from the project, which was above the 90% target, in one of the following areas: live or dead retaining barriers (59.8%), management of shade trees (59.8%), planting of shrubs on the banks of streams (33.3%), drains (29.3%), infiltration ditches (24.4%), crops on contour lines 23.2%.
- e) Measure 51. 35% of farmers declared that they carry out deep excavations (*calicatas*) to take soil samples. This result achieved is greater than the EMMP goal for this measure, which was of 30%.
- f) Measure 52. 25.8% of cacao producers who declared that the soil of their plot is deep, stated that it has drains to evacuate excess water. However, the goal set for this measure was 40%.

## SOLID WASTE & EFFLUENT MANAGEMENT

In terms of Solid Waste Management, the average compliance within the three environmental mitigation measures that comprise it was 65.2%. Measure 31 focused on promoting the safe collection of waste (pesticide containers) registered the highest level of implementation with 95.7% above the target value of 80%. However, measure 9, related to the conduction of "honey water" to septic tanks or artisanal collection systems obtained the lowest level of compliance with a result of 8.1%, while the goal for this measure was 30%. It was found that the main reason for this result is that producers do not consider it a risk (55.4%).

For example, farmers show that they do have knowledge of the use of infiltration wells, however, they do not consider it necessary because it is an established custom.

*“The limiting factor is that farmers in this area are not yet living of the cacao activity for 100%; most producers sow cacao, rice, corn, plantain and cassava, and cacao is just an additional activity that accounts for 40% of their time” (Cacao producer in San Martin).*

*“...some people leave their waste get wet because they are not in the habit of collecting their waste, or because they lack orientation, or because they do not have time”. (Cacao producer in San Martin).*

- a) Measure 31. As mentioned above, this measure achieved a compliance level of 95.7% which refers to farmers who declared that they disposed of containers (bottles, bags, cans) containing agrochemical waste in specific containers or sacks for use (38.8%) or that they delivered them to the company called Campo Limpio (6.3%). This result exceeded the EMMP target of 80%.
- b) Measure 9. Only 8.1% of the farmers stated that they channel the honey water to sedimentation wells (5.8%) or to infiltration wells (2.3%), while the target for this measure in the EMMP was of 30%.

- c) Measure 30. This measure, which promotes the safe collection of inorganic solid waste for agricultural use (plastics, cans, bags, etc.) was implemented by 91.7%, which represents the percentage of farmers who declared that they disposed of containers (bottles, bags, cans) containing agrochemical waste in: containers or sacks specifically for their use (38.8%), delivered to Campo Limpio (6.3%), recycling containers (6.3%) or in any other container (5.6%). For this measure, no target had been identified in the EMMP.

## CONSERVATION OF WATER SOURCES

This area included two mitigation measures: Measures 39 and 40, which average 88.2%, making this topic one of the two areas with the greatest compliance among the 8 work areas covered by the EMMP.

- a) Measure 39. 76.3% of farmers surveyed stated that they keep an area free of any crops for at least 5 meters (or 50 meters in the case of rivers) on both sides of all-natural water sources (rivers, streams, springs, ravines, lagoons, among others). This result is slightly below the EMMP target of 80%.
- b) Measure 40. This measure promotes the use of live plant barriers for containment and reached a compliance of 100%, a result above the 80% goal established. This percentage of compliance considers that farmers have received training in one of the following measures: conservation of vegetation at the headwaters of water sources such as rivers, streams, springs, ravines, wells, and lagoons, among others (87.1%), conservation of vegetation in areas on both sides of water sources, streams at 5 meters and rivers at 50 meters (51.6%), or over pollution of water courses due to incorrect management of pesticides (45.2%).

In addition, the following testimonies give an idea of the knowledge the farmers have in terms of water conservation:

*“The availability of a conservation area for the water issue, that is, not to get too close to the river headwaters, not to set up too much farmland, to have a conserved area. In 2016, we reforested the headwaters of the water source with AGRORURAL, and we even reforested the ravines with wood”. (Cacao producer in San Martin)*

*“If we have a river nearby, the issues we remembered were not to cut down the trees, because if the river does not dry up, the training does not help a lot, because otherwise it dries up in the summer”. (Cacao producer in San Martin).*

## LAND PROSPECTING & SELECTION

The average level of compliance with the mitigation measures set forth in the EMMP on protection and land selection is 71.3%, which is the average percentage of compliance with the 3 environmental mitigation measures observed, Measure 34, 35, and 36.

- a) Measure 34. The corresponding goal assigned in the EMMP was 70%. The level of compliance reached of 75.3% refers to the percentage of farmers who said that the land and installation of the cacao nursery has not required felling and burning of (both primary and secondary) forests for more than 5 years.

- b) Measure 35. 100% of the farmers surveyed stated that they had received training from the project during the past year on one of the following topics: installation of cacao cultivation on land that has already been intervened (78.2%), intervention in secondary forests (purmas) older than 5 years (45.5%), on not intervening in primary forests (30.9%) or on not intervening in secondary forests older than 5 years (30.9%). This measure has no associated goal in the EMMP.
- c) Measure 36. This measure recorded a compliance level of 89.3%, which represents the percentage of producers who declare that when they plant their cacao crops they take into account the zoning of the area (85.0%) or that the area is not located in a protected area, in buffer zones and forest concessions, or corresponds to a permanent production forest (13.7%). The goal for this measure was 100%.

#### Evaluation Question

2. *Which factors facilitate or hinder compliance with the mitigation measures in the EMMP?*

#### Summary of Findings:

- *There are various institutions that address environmental care in the area of intervention that favors compliance with the EMMP, but there are also elements that hinder compliance such as the high cost of organic fertilizers and pesticides, beliefs and the complexity of the EMMP.*

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**FINDING 12:** There are various institutions that address environmental care in the area of intervention that favors compliance with the EMMP, but there are also elements that hinder compliance such as the high cost of organic fertilizers and pesticides, beliefs and the complexity of the EMMP.

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Several factors have been identified that facilitate or hinder compliance with environmental mitigation measures, which are presented below:

#### a) Context Factors

The environmental mitigation measures are addressed by several institutions that coexist in the same area and that aim to care for the environment. Among the institutions are DEVIDA (which is mentioned frequently by the farmers in the interviews), as well as government institutions such as the Regional Governments through the Regional Environmental Authority, the municipalities, and an NGO called Soluciones Prácticas. All these institutions help increase the knowledge among producers. For example, there are posters in the areas indicating the care of the trees and of the rivers and springs. It is therefore important to standardize messages so as not to confuse the farmers.



## b) Economic Factors

The costs of materials and labor for cultural work (fertilization and pest management), purchase of protective equipment is onerous, and farmers do not see a return on the investment in the price per cacao bean.

The costs of the inputs for organic versus conventional fertilization are considerable. Like what is the case in coffee cultivation, the cost of 6 bags of island guano is S/ 420 (S/ 70 per bag), but if 1.5 bags of urea are used, the cost rises to S/ 112.50. Potassium sulfate costs S/ 125, while the price of potassium chloride is S/60 to S/. 65. Therefore, there is a high acceptance with 73.6%, as well as the use of a machete, with 71.8%. This reality should be overcome at the time of sale of the final product, and because it is organic, the price differentiation with a conventional one should meet price expectations, but in reality the difference is from S/ 0.40 to S/ 0.50 cents per kilo.

## c) Cultural Factors

There are prevailing beliefs within the community, such as: the idea that the flow of honey water can stay in the field because it serves as fertilizer without any prior treatment and that it is not risky. Although 92.9% of cacao producers prune the plants, during field visits some beliefs held by the farmers were collected that continuous pruning reduces the productivity of the plantation.

## d) Institutional Factors

EMMP formulation. The Environmental Monitoring and Mitigation Plan as written, has several unnecessarily dispersed environmental mitigation measures and in many cases, they are repeated at different times. In the analysis conducted, 16 environmental mitigation measures were identified as being repeated in whole or in part (as presented in Table 9). This situation makes planning, monitoring, and analyzing the compliance, difficult. Also, certain measures are formulated as strategies and are not environmental measures per se (e.g., partner work strategies and training strategies).

On the other hand, the formulation is confusing. This study considered the 66 environmental mitigation measures mentioned in the EMMP and listed in Appendix 2 of such document. However, the technical team of the Cacao Alliance considers that there are only 50 measures because some are "statements and other activities" (an explanation that is not found in any paragraph of the EMMP and contradicts the first comments made to the preliminary report of this study where they indicate that there are 66 measures). Similarly, about the established indicators, there is confusion as well as to which measures have or do not have indicators, or whether one indicator serves to measure several measures. This situation complicates the monitoring and evaluation because it is left to the free interpretation of the person who analyzes the EMMP.

*“The numbering of lines and paragraphs in the narrative part of the description of the mitigation measures carried out by MELS, effectively results in 66 statements, 50 of which are mitigation measures aimed at preventing possible environmental impacts in the cacao production chain, while all of which have their respective indicator of effectiveness. Of the 50 measures, 8 activities respond to the same indicator of the indicated measure and in 3 cases 10 activities are considered to be integrated as mitigation measures and have only one indicator of effectiveness (see table 3)”. E-mail from ACP dated May 28, 2020 in response to the acquittal of the evaluation team.*

Some mitigation measures under the EMMP have been found not to be in line with reality. For example, the use of biodegradable bags. This material does not exist on the market and is little known by farmers, not only in name but also in use. Secondly, the application of targeted irrigation to the cacao population in places where water is abundant is not an extensive measure for the entire area of intervention. Furthermore, the cost of localized irrigation exceeds the resources of producers and promoting its use as an environmental measure is in line with reality.

Human resources. The Cacao Alliance does not have a specific area of environmental issues, and the responsibility for these issues corresponds to Agribusiness Management. This area, together with the Monitoring and Evaluation area, carries out the annual Environmental Monitoring, as well as other issues, which is positive.

In the interviews with the area teams of the Cacao Alliance, it became clear that there is a lack of knowledge about the internal and external ECRs carried out previously, as well as their recommendations. The team in Lima knows that an external ECR was conducted in 2015, but they do not know the content.

Strategies implemented: Some strategies implemented by the Cacao Alliance favor compliance with the environmental measures and others to the contrary, such as the following:

- The associations, committees and cooperatives are betting on carrying out organic certification because it is a requirement of some buyers, and to enter a specific niche such as the organic market. Therefore, the unrestricted implementation of environmental mitigation measures for the observation of their organic certification is paramount. The commitment of these organizations is assumed with great responsibility because they not only take into consideration respect for environmental measures, but they also do not want to lose the market niche obtained by organic certification.
- The scope of intervention and the number of families assigned to the field technicians are beyond the working capacity that the technician should have towards the producer. It may therefore represent an obstacle in learning about the environmental mitigation measures.

Currently, a technician of the Cacao Alliance is responsible for providing technical assistance to 300 families, which leads to the conclusion that the time dedicated to each family is of only one day per year. Farmers perceive that the technicians of the Cacao Alliance do not provide them with technical assistance as often as they need. While one of the strategies is for buyers involved with the Cacao Alliance to take the lead in providing technical assistance to the farmers, this process is still very slow.

- In the interviews performed, producers say that the low productivity of the crop in its first stage means that they turn to other crops, including illicit ones, and look for new areas, including areas where they should not intervene, causing them to cut down the forest.

**Evaluation Question**

3. *Which alternatives contribute to increasing the level of compliance with the mitigation measures in the EMMP?*

**Summary of Findings:**

- *Training for farmers helps increase the knowledge in terms of environmental measures and their compliance, but they require a practical and in-field planning, as well as community engagement.*

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**FINDING 13:** Training for farmers helps increase the knowledge in terms of environmental measures and their compliance, but they require a practical and in-field planning, as well as community engagement.

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In the qualitative interviews, farmers refer to the need for field training, but in a practical way. They mention that they learn more if they observe the technician or engineer performing the tasks so that they can imitate them. They also feel that demonstration plots should be selected at random, because the same plots are selected all the time. The plots that are not well managed should be included in this selection, so that the effect on those plots can be seen.

Another aspect pointed out in the interviews with farmers is the need for the Cacao Alliance to adequately separate the issues aimed at both the organic and the conventional farmers, to prevent producers from getting confused because of the contents.

*“I believe that there are courses or workshops that are given to different institutions, which should not be given in a classroom but in the field. Visits to impacted sites should be included to see the reality, and little by little, pilot projects should be carried out to see how they work. Often, the courses are given in a classroom, while they should be given in the field”. (Cacao Producer from Ucayali).*

**Evaluation Question**

4. *To what extent can stakeholders contribute to a higher level of compliance with the mitigation measures in the EMMP?*

**Summary of Findings:**

- *There are different perceptions among the stakeholders regarding the progress made in the implementation of the environmental mitigation measures of the Cacao Alliance.*
- *Women have a greater commitment to environmental compliance than men, as they relate it to family care. In addition, they participate in the entire production process.*

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**FINDING 14:** There are different perceptions among the stakeholders regarding the progress made in the implementation of the environmental mitigation measures of the Cacao Alliance.

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The DEVIDA officials that were interviewed, and that belong to the area of intervention of the Project, perceive that the Cacao Alliance orients the technical assistance to the productive component and leaves aside the environmental issue. They mention that they have had problems in the development of cacao plantations due to the clone issue. As the clones have not been validated in the field, productivity has not covered the expectations the farmers had. Therefore, DEVIDA intervened by carrying out the repopulation in some plots with identification of productive and fine aroma clones that was proposed to the farmers who opted for the fine and aromatic crops.

*“This failure has been due, as I have said before, to the clonal arrangement; to the combination of the genetic arrangement. It has not made an adequate combination and there has been a self-incompatibility in the setting process” (DEVIDA official).*

*“... We work with the common criollo species, so making that genetic, fine aroma cacao, has not been successful at all. In the area of direct cacao execution it has not been produced, so in the long run it has generated inconvenience, and people are not happy.” (DEVIDA official).*

They also consider that the problem in the families is that they do not know the cacao and working with the fine aroma cacao means learning another technology, another production system, and a greater specialization. In addition, the farmers need more investment, learning and investing in fertilization, a larger number of daily wages, pruning, etc. This whole process had a negative impact on the farmers because it was very fast.

DEVIDA mentions the need to validate technology packages among current actors in the area who have the same objective and, just as productive technology packages have been socialized and unified, the same should be done with environmental mitigation measures. The EMMP should be disseminated to all the actors of the zones to know the scope and the demands and to contribute to their compliance.

*“More than anything else, we should speak the same language. We as institutions do not have things well defined; we use different ways of working”. (DEVIDA official).*

DEVIDA points out that the farmers coming from the coca stage, have had difficulty adapting to legal crops. The projects have reinforced the issue of sowing and harvesting, but they consider that the post-harvest stage, where the quality of the grain is defined, is not being properly executed. Therefore, by carrying out the cultivation correctly and failing in the last stage, it is preventing the quality of the grain from continuing until the end of the production process.

The Regional Environmental Autonomous Authorities of Ucayali and San Martin mentioned that they are working on a coordination table for climate change and that they hope that all projects financed by international cooperation will concur to unify criteria on the Mitigation Measures and above all how to carry out this process.

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**FINDING 15:** **Women are more committed to environmental compliance than men because they relate it to family care. In addition, they participate in the entire production process.**

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The participation of women in the entire cacao production process is evident and, at present, a change of mentality is observed with respect to their contribution to the cacao production

process. Currently it is not considered that women only bring the food to the field, but that they actively participate from the sowing to the harvesting of the cacao. In some cases, they participate in marketing because they are community leaders or presidents of associations and/or cooperatives. This reality is positive insofar as women are valued in an environment that had been denied to them for many years. Therefore, women show greater respect for and compliance with environmental measures, they are stricter in compliance because they associate it with the care and welfare of their family and especially their children. They participate in the trainings with the names of their husbands, but the desire to learn is paying off since they themselves are managing a part of the plots, allowing for them to compete in efficiency with their partners, showing them that technical knowledge is useful when it is well applied.

*“I see that women can very well, or even better than men, adopt environmental measures. They are more careful, and they are more concerned about their health; they are more concerned about their environment. I tell you this because women here now make up 50%, and up to last year the president of the cooperative was a woman” (Leader of cacao producers in Ucayali).*

# CONCLUSIONS

## ALLIANCE FOR DIGITAL & FINANCIAL SERVICES (ALLIANCE CR3CE)

<p><b>Conclusion 1</b></p> <p>In the level of compliance with the environmental mitigation measures established in the Environmental Monitoring and Mitigation Plan of the CR3CE project, some differences can be found, between the telecenters, lifting towers, and relay masts. These differences are due to the fact that the administration of the telecenters and lifting towers are not the responsibility of the CR3CE Project. Instead, the municipalities and Yachay administer the telecenters and there is no control over the lifting towers.</p>	<p><b>Associated findings</b></p> <ul style="list-style-type: none"> <li>• Finding 1</li> <li>• Finding 2</li> </ul>
<p><b>Conclusion 2</b></p> <p>The greatest obstacles for compliance with the environmental measures of the CR3CE Alliance are of an institutional nature, as CEDRO is not responsible for the administration and maintenance of the telecenters, the lifting towers, and the relay masts. CEDRO does not have the mandate to sanction non-compliance with the environmental mitigation measures. The Environmental Monitoring and Mitigation Plan does not reflect the degree of responsibility CEDRO has for the noncompliance of the environmental measures subscribed; CEDRO has played a role in raising awareness within the municipalities and Yachay.</p>	<p><b>Associated findings</b></p> <ul style="list-style-type: none"> <li>• Finding 3</li> <li>• Finding 4</li> <li>• Finding 5</li> </ul>
<p><b>Conclusion 3</b></p> <p>The content of the EMMP is not a document that facilitates compliance with the environmental mitigation measures. The 20 measures are written in a general manner, without identifying any specific indicators, goals, or parties responsible. In addition, some are not relevant for the area.</p>	<p><b>Associated findings</b></p> <ul style="list-style-type: none"> <li>• Finding 3</li> </ul>

## COFFEE ALLIANCE FOR EXCELLENCE (CAFE)

<p><b>Conclusion 4</b></p> <p>The level of compliance with the environmental mitigation measures of the EMMP of the Coffee Alliance project is, on average, above 60%, due to the fact that there are factors that contribute to compliance of the measures. These factors include the presence of governmental organizations and private companies that converge in actions to mitigate the environmental impact, as well as further the development of strategies that support greater knowledge and adequate practices for environmental mitigation (training, women’s participation, the UNICA savings system, and the validation of coffee varieties). The factors that hinder compliance with the measures are mostly economic, due to the high cost of the inputs of organic fertilization and to a lesser extent, the presence of</p>	<p><b>Associated findings</b></p> <ul style="list-style-type: none"> <li>• Finding 6</li> <li>• Finding 7</li> <li>• Finding 8</li> <li>• Finding 10</li> </ul>
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<p>some beliefs. One example is related to pruning being detrimental to overall productivity.</p>	
<p><b>Conclusion 5</b></p> <p>One of the obstacles to compliance of the measures is the Environmental Monitoring and Mitigation Plan itself, which is written in a general manner, making it difficult to assess and measure compliance with the environmental mitigation measures, as well as to implement them. It was found that some measures were repeated, while others do not fit the reality of the microclimates or their agronomic consequences in each of the areas of intervention of the project; consequently, they cannot be applied to all areas in the same way.</p>	<p><b>Associated findings</b></p> <ul style="list-style-type: none"> <li>• Finding 7</li> </ul>
<p><b>Conclusion 6</b></p> <p>The stakeholders are involved in different ways in compliance of the measures, but the regional governmental institutions do not know the Coffee Alliance EMMP.</p>	<p><b>Associated findings</b></p> <ul style="list-style-type: none"> <li>• Finding 9</li> </ul>

## PERU CACAO ALLIANCE – PHASE II

<p><b>Conclusion 7</b></p> <p>Compliance with the EMMP environmental mitigation measures of the Peru Cacao Alliance - Phase II project achieved an implementation level of over 50%. The factors contributing to compliance with environmental measures are the confluence of public institutions that contribute to the application of the environmental mitigation measures, making it necessary to reach consensus in terms of the messages, as well as the organic certification strategies of producer associations and the training. Obstacles to compliance with the environmental measures have been identified, such as the costs of inputs for organic fertilization, certain beliefs about pruning, the low productivity of one type of cacao that can lead producers to seek other crops, including the illicit ones, and deforestation.</p>	<p><b>Associated findings</b></p> <ul style="list-style-type: none"> <li>• Finding 11</li> <li>• Finding 12</li> <li>• Finding 13</li> </ul>
<p><b>Conclusion 8</b></p> <p>The Environmental Monitoring and Mitigation Plan is written in a very confusing manner, making its implementation hard to plan, monitor, and assess. The plan includes 16 repeated measures, as well as several measures that are not relevant to the area.</p>	<p><b>Associated findings</b></p> <ul style="list-style-type: none"> <li>• Finding 12</li> </ul>
<p><b>Conclusion 9</b></p> <p>It has been noted that the different stakeholders perceive that the project emphasizes the production rather than the environmental aspect, as they are not aware of the existence of the EMMP of the project.</p>	<p><b>Associated findings</b></p> <ul style="list-style-type: none"> <li>• Finding 14</li> </ul>

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**Conclusion 10**

Participation of women has been evident throughout the production process; in terms of leadership in assuming positions such as president of their organizations. They are also the strictest in respecting the fulfillment of environmental measures, as they relate it to caring for their families and children. Involving women in training has given them the technical knowledge they lacked and they now feel they can compete on an equal level with their husbands in how to manage their plots, while demonstrating that there are some technical aspects which, if implemented, will improve their productivity.

**Associated findings**

- *Finding 15*



# RECOMMENDATIONS

## ALLIANCE FOR DIGITAL & FINANCIAL SERVICES (CR3CE ALLIANCE)

On April 15, 2020, a Recommendation Co-Creation Workshop was held together with the CEDRO and USAID technical teams to present and validate the ECR findings and conclusions, and to collaboratively develop ways to address them. The inputs allowed for the development of the recommendations listed below.

### FOR CEDRO

1. Preparation of an Environmental Monitoring and Mitigation Plan with an analysis of the relevance of each measure for both the areas of intervention, which is in line with the annual activities that the CR3CE Alliance carries out with both the local governments and Yachay.
2. Articulate the Environmental Monitoring and Mitigation Plan with the EMMPs of the partners/allies, so that they complement each other and to achieve greater efficiency and effectiveness.
3. The Environmental Monitoring and Mitigation Plan should be written in a more precise way, including goals, indicators, and deadlines for their fulfillment, and should specify the responsible party for their implementation.
4. The EMMP activities should be included in the annual activity plans of the project, as well as the corresponding monitoring and reporting.
5. We recommend including new communication strategies (or complement the existing ones) for: i) diffusion of the EMMP to the regional and local authorities, as well as with the communities to generate awareness and commitment to the environmental issues; ii) carrying out advocacy actions, strengthening capacities/technical assistance with municipalities on environmental aspects for the inclusion of mechanisms and/or budgets for compliance and incentives for the management of solid and organic waste, iii) awareness of best environmental practices for the population, using the telecentres for dissemination.

### FOR USAID

6. The guidelines for formulation of the EMMP should be reviewed, so that the environmental mitigation measures are realistic and accurate to facilitate planning, monitoring and evaluation.
7. Approve inclusion in the budget of the hiring of an environmental specialist for preparation of the EMMP and subsequent follow-up of its implementation.
8. Promote coordination between the IDF project and DEVIDA, to articulate interventions with municipalities to generate solid waste management plans.

## FOR GOVERNMENT

9. Local governments must carry out their solid waste management function in accordance with the Organic Law of Municipalities (Law 27972) and Legislative Decree 1278 - Law of Integrated Solid Waste Management.
10. Local governments must generate energy efficiency programs for the public in accordance with the current regulations that include educational programs on electricity and water saving.

## OTHER RECOMMENDATIONS

11. Conduct a study to find out how many municipalities have a recycling system and that also make sure that the final recycling stream destination has been segregated from the beginning.

## COFFEE ALLIANCE FOR EXCELLENCE (CAFE)

The Recommendation Co-Creation Workshop was held on April 21, 2020 with participation of the technical teams of TNS and USAID. During this meeting, the findings and conclusions of the study were presented and validated. Recommendations were also developed collaboratively, which served to formulate the following recommendations:

## FOR TECHNOSERVE

12. Review and update the Environmental Monitoring and Mitigation Plan, based on the findings of the study, while making any necessary adjustments, establishing the operationalization of the measures and setting goals and indicators to be monitored.
13. Disseminate the EMMP with the stakeholders involved in the promotion of the coffee production chain, attending technical meetings such as the Regional Technical Tables with the participation of the Regional Environmental Authority (ARA), the National Commission for Development and Life without Drugs (DEVIDA), the National Institute for Agricultural Innovation (INIA), the United Nations Development Programme (UNDP), or with the National Agricultural Health Service (SENASA) and local governments, the Ministry of Agriculture (MINAGRI), the Ministry of the Environment (MINAM), the National Coffee Board and USAID, in order to unify criteria and bring one single message to the producers.
14. Disseminate and analyze the ECR results with technical teams from the different areas, in order to plan the interventions in a realistic way.
15. Establish strategies to strengthen and expand the role of women in the implementation and enforcement of the environmental measures.
16. Systematize intervention (the production chain), in order to share it with other stakeholders for replication and sustainability.

17. Implement a Knowledge Management Platform on the management of coffee and the implementation of environmental measures in alternative development zones and the experience of the Coffee Alliance project, for its transfer to the stakeholders involved.
18. With regard to the environmental mitigation measures:
  - a. Continue the work of the Coffee Alliance with the NGO Campo Limpio to improve the storage of solid waste (e.g. pesticide containers), through training activities in recycling.
  - b. Systematize and disseminate the use of vetiver grass in the infiltrations wells for coffee honey water as a good practice.
  - c. Continue to strengthen the capacity of farmers to pay for fertilizers through demonstration plots using low-cost inputs available to the farmer.
  - d. Continue erosion control at the demonstration plot level using either live or dead barriers.
  - e. Prepare fermented liquid fertilizers (boils), in order to help lower production costs.
  - f. Perform communication campaigns with concrete alternatives for the rural areas, carrying out a protocol to help the producer take care of both rust and the current COVID-19 pandemic in order to take care of the coffee production.

## FOR USAID

19. Promote collaboration with the government (MINAM, MINAGRI, DEVIDA) to identify mitigation measures that unify criteria that respond to both USAID regulations and Peruvian law.
20. Strengthen the capacities of the Alternative Development partners on the regulations of Standard 216 as an important input for preparing the Environmental Monitoring and Mitigation Plan, as well as identifying indicators and goals that are practical, realistic and inexpensive.
21. USAID should ensure that the implementing partners incorporate the environmental mitigation activities into the annual work plans and that their indicators are included in their monitoring and evaluation plans.

## FOR GOVERNMENT

22. DEVIDA should promote the constitution and strengthening of a national instance and of the Regional Technical Tables with the participation of different actors such as ARA, INIA, SENASA, MINAGRI, MINAM, local governments, the National Coffee Board and UNDP, to unify criteria of the environmental measures and bring one single message to the producers.

23. Validate the genetic coffee material (in productivity as well as agronomic management) according to the microclimates of the alternative development zone and according to the demand of the international market, in order to improve the quality of the coffee.
24. DEVIDA, MINAGRI, SENASA, and INIA must react immediately each time plagues are detected in coffee crops to avoid propagation as well as address the dissatisfaction faced by producers that cause the change to a different crop.

## PERU CACAO ALLIANCE - PHASE II

On April 17, 2020, the Recommendation Co-Creation Workshop was held, with participation of the technical team of Palladium and USAID. On this occasion, the findings and conclusions of the ECR were presented and validated and recommendations were developed collaboratively. The recommendations that emerged are presented below.

### FOR PALLADIUM

25. Review and improve the formulation of the Environmental Monitoring and Mitigation Plan, including indicators, targets and corresponding responsible parties. Additional inclusions are the consideration of regional differences, climate, productivity, the parameters of the Ministry of Environment in the environmental mitigation measures, as well as the agroforestry systems.
26. Include the EMMP indicators into the Monitoring and Evaluation Plan of the Cacao Alliance, so that the progress in their implementation is reported jointly.
27. Monitor the differentiated state of progress of the implementation of environmental measures by the actors: both small and medium producers, and associations.
28. Disseminate and analyze the ECR results with the zonal teams of the Cacao Alliance.
29. Prepare a communication plan for the Environmental Monitoring and Mitigation Plan at all levels, for regional and local authorities, partners and farmers.
30. Prepare work strategies to strengthen and expand the role of women in implementing and monitoring compliance with the environmental measures.
31. Regarding the environmental mitigation measures:
  - a. The mitigation measure on organic and inorganic solid waste and the corresponding final disposal should focus on mitigation and the corresponding compliance, instead of pursuit of other options (compost, micro-fillers, biodegradable bags).
  - b. The mitigation measure on plastic contamination of water bodies should include all possible measures to prevent plastic contamination and not only focus on one single measure (biodegradable bags).
  - c. Coordinate with SENASA in terms of how to perform pest control on new cacao varieties.

- d. Develop unified technological packages - NIPO, IPM, GAP, coordinating with the different regional and local actors to bring unified messages to the producers.
- e. We suggest identifying some forest species that are targeted to the area and including them in the EMMP

## FOR USAID

- 32. Promote coordinated work with government institutions (MINAM, MINAGRI, DEVIDA) to identify mitigation measures that unify criteria and respond to both the USAID regulations and Peruvian law.
- 33. Strengthen the capacities of the Alternative Development partners on the regulations of Standard 216 as an important input for the elaboration of the Environmental Monitoring and Mitigation Plan, while identifying indicators and goals.

## FOR DEVIDA

- 34. Promote spaces for national and regional consensus with the participation of public institutions (MINAGRI, MINAM, SENASA, INIA, DEVIDA, regional governments), the private sector, USAID partners, as well as other relevant actors (UNDP) to unify criteria and identify environmental mitigation measures.
- 35. Develop an environmental monitoring system that allows for following up on the fulfillment of environmental mitigation measures agreed upon by consensus.
- 36. Update the PERSUAP and disseminate it to the stakeholders involved in each region.

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# ANNEXES

## ANNEX A: RESUMEN EJECUTIVO

El Programa de Desarrollo Alternativo de USAID se implementa en las regiones de Huánuco, Ucayali y San Martín e incluye los proyectos de la Alianza Cacao Perú (implementado por Palladium), Alianza CAFE (implementado por TechnoServe), Alianza para los Servicios Digitales y Financieros - CR3CE (implementado por CEDRO) y el Acuerdo Gobierno a Gobierno “Plan Operativo de Reforzamiento Institucional” (PORI) con DEVIDA. Estos socios implementadores llevan a cabo acciones de mitigación ambiental a través de los Planes de Monitoreo y Mitigación Ambiental (PMMA) anuales y estudios internos anuales de Revisión de Cumplimiento Ambiental (ECR por sus siglas en inglés) según el Reglamento 216 de USAID y los requisitos de la legislación ambiental peruana. Adicionalmente, USAID lleva a cabo ECR externos.

El presente estudio incluye a los proyectos Alianza Perú Cacao – Fase II, Alianza para la Excelencia en Café (CAFE) y Alianza para Servicios Digitales y Financieros (Alianza CR3CE) y sus Planes de Medidas de Mitigación Ambiental que corresponden al periodo de octubre 2018 a setiembre 2019.

El PMMA de la Alianza CR3CE propone acciones orientadas a mitigar los posibles impactos al medio ambiente en las fases de ejecución y operación de la empresa Yachay como son las actividades de instalación, reforzamiento y mantenimiento de torres de elevación, instalación y mantenimiento de pozos a tierra y el recambio de parte o de la totalidad de equipos electrónicos.

El PMMA de la Alianza CAFÉ plantea acciones de mitigación para prevenir posibles impactos ambientales derivados del cultivo del café como: uso de agroquímicos, contaminación del agua por el procesamiento del café, y erosión del suelo. Promueve los sistemas de agroforestería como un mecanismo de evitar la deforestación.

La Alianza Perú Cacao plantea en el PMMA acciones para mitigar los posibles impactos ambientales de las diferentes actividades del cultivo de cacao como la selección del terreno de cultivo, la preparación del terreno, la instalación de viveros, la instalación campo definitivo, el manejo y conservación de suelos, el manejo del cultivo, la cosecha y postcosecha.

## PROPÓSITO Y PREGUNTAS DE EVALUACIÓN

El propósito de la revisión de cumplimiento ambiental del programa de desarrollo alternativo (DA) es analizar el nivel de cumplimiento y recomendaciones de mejora de los PMMA de las actividades de desarrollo alternativo implementadas por los siguientes socios: Alianza Cacao Perú/ Palladium, Alianza para la Excelencia en Café (CAFE)/ Technoserve y Alianza CR3CE/ Cedro. El estudio se enfocará además en opciones y sugerencias para incrementar el cumplimiento exitoso de las medidas ambientales.

Las preguntas del estudio fueron las siguientes:

1. ¿Cuál es el nivel de cumplimiento de las medidas de mitigación presentadas en el PMMA?
2. ¿Cuáles son los factores que facilitan o impiden el cumplimiento de las medidas de mitigación del PMMA?



3. ¿Cuáles son las alternativas que contribuyen a incrementar el nivel de cumplimiento de las medidas de mitigación del PMMA?
4. ¿En qué medida los actores involucrados pueden contribuir con un mayor nivel de cumplimiento de las medidas de mitigación del PMMA?

## METODOLOGÍA

El estudio aplicó una metodología mixta en la cual se combina métodos cuantitativos y cualitativos. Utilizó la técnica de la encuesta la cual fue aplicada a una muestra de productores de café y una muestra de productores de cacao de las zonas de Ucayali, Huánuco y San Martín. El cuestionario fue estructurado y se incluyeron preguntas que permitieron recabar datos acerca del conocimiento y prácticas relacionadas a las medidas ambientales.

Las técnicas cualitativas que se emplearon fueron a) revisión documental, b) entrevistas en profundidad líderes comunitarios de cada una de las regiones del ámbito del proyecto y el equipo técnico responsable de la ejecución del proyecto de Lima y de las zonas de intervención, c) Grupos focales con productores de cada cultivo del ámbito de intervención, d) observación no participante de los telecentros y torres de elevación, y e) entrevistas a gobiernos locales y municipales.

Para cada técnica se elaboraron instrumentos de recopilación de datos que fueron revisados y validados con las instituciones implementadoras.

## HALLAZGOS

### ALIANZA PARA SERVICIOS DIGITALES Y FINANCIEROS (ALIANZA CR3CE)

1. El cumplimiento de las medidas de mitigación ambiental del Plan de Monitoreo y Mitigación Ambiental para torres de elevación y antenas repetidoras tiene diferentes niveles: la ubicación alcanza un nivel de cumplimiento del 100%, la reforestación tiene un nivel de cumplimiento de 85.1%, señalización con 80.7%, mantenimiento alcanza un 77.9% de cumplimiento, residuos sólidos tiene un 75.3% de cumplimiento y pozo a tierra llega a 53.2%.
2. El mayor nivel de cumplimiento de las medidas de mitigación ambiental del PMMA en los telecentros se encuentra en el cumplimiento de eficiencia energética y en el uso del agua alcanzando un 73.8%, seguida de manejo de residuos sólidos que llega a un nivel de cumplimiento del 64.7%. El menor cumplimiento se observa en lo referente a pozo a tierra que alcanzó un 51.5% de nivel de cumplimiento.
3. Existen factores institucionales que limitan el cumplimiento de las medidas de mitigación ambiental.
4. Las instituciones responsables del cumplimiento de las medidas de mitigación ambiental son las municipalidades y la empresa Yachay por ser las responsables directas de los telecentros y las Torres de elevación y antenas repetidoras.
5. Existen diferencias en el nivel de involucramiento de los actores para el cumplimiento de las medidas ambientales.

## ALIANZA PARA LA EXCELENCIA EN CAFÉ (CAFE)

6. El cumplimiento promedio de las medidas de mitigación ambiental del PMMA del proyecto Alianza Café en cada una de sus cinco temáticas se encuentran por encima del 60%. Las medidas asociadas a conservación de fuentes de agua y las de reforestación y las medidas de control de erosión son las de mayor nivel de cumplimiento con 76% y 70%, respectivamente.
7. La existencia de diferentes instituciones que trabajan las medidas de mitigación ambiental facilita el cumplimiento de las medidas ambientales. En cambio, los altos costos de fertilizantes orgánicos, algunas creencias, la generalidad de la redacción del PMMA constituyen factores que obstaculizan su cumplimiento.
8. Las estrategias de capacitación en campo y la asistencia técnica individualizada tienen mejores resultados para el cumplimiento de las medidas ambientales.
9. Las medidas de mitigación en el PMMA son apenas conocidas por los actores gubernamentales.
10. Las mujeres tienen un mayor compromiso en el cumplimiento de las medidas ambientales que los hombres porque lo relacionan al cuidado de la familia.

## ALIANZA PERÚ CACAO – FASE II

11. El cumplimiento promedio de las medidas de mitigación ambiental logró un nivel de implementación por encima del 50%. Las medidas con mayores avances están asociadas al uso y manejo de pesticidas (con 90%), mientras que los temas de cosecha, post cosecha y almacenaje y reforestación y control de erosión tuvieron un relativo menor cumplimiento.
12. Existen diversas instituciones que abordan el cuidado del medio ambiente en el ámbito de intervención que favorece el cumplimiento del PMMA, pero también existen elementos que obstaculizan su cumplimiento como el alto costo de fertilizantes y plaguicidas orgánicos, las creencias y la complejidad del PMMA.
13. La capacitación a los agricultores contribuye al conocimiento de las medidas ambientales y su cumplimiento, pero requieren una planificación práctica y en el campo, así como involucramiento a la comunidad.
14. Existen diferentes percepciones de los actores referente al avance en la implementación de las medidas de mitigación ambiental de la Alianza Cacao.
15. Las mujeres tienen un mayor compromiso en el cumplimiento de las medidas ambientales que los hombres porque lo relacionan al cuidado de la familia. Además, participan en todo el proceso productivo.

## CONCLUSIONES

### ALIANZA PARA SERVICIOS DIGITALES Y FINANCIEROS (ALIANZA CR3CE)

1. El nivel de cumplimiento de las medidas de mitigación ambiental establecidas en el Plan de Monitoreo y Mitigación Ambiental del proyecto CR3CE tiene diferencias así se trate de

telecentros o torres de elevación y antenas repetidoras. Esto se debe a que la administración y el mantenimiento de los Telecentros y las Torres de Elevación no están a cargo del proyecto CR3CE sino es de total responsabilidad de las municipalidades en el caso de telecentros y de la empresa Yachay en el caso de las torres y no hay ningún tipo de control sobre las mismas.

2. Los mayores impedimentos para el cumplimiento de las medidas ambientales de la Alianza CR3CE son de índole institucional debido a que CEDRO no es responsable de la administración y mantenimiento de los telecentros y de las torres de elevación y antenas repetidoras. Carece de mandato para sancionar el incumplimiento de las medidas de mitigación ambiental. El Plan de Monitoreo y Mitigación Ambiental, no refleja el grado de responsabilidad de CEDRO por el no cumplimiento de las medidas ambientales suscritas, cumpliendo un rol de sensibilización hacia las municipalidades y hacia la empresa Yachay.
3. El contenido del PMMA no es un documento que facilite el cumplimiento de las medidas de mitigación ambiental. Las 20 medidas están redactadas de manera general, sin identificación de indicadores, metas y responsables. Asimismo, algunas no son pertinentes para la zona.

## ALIANZA PARA LA EXCELENCIA EN CAFÉ (CAFE)

4. El nivel de cumplimiento de las medidas de mitigación ambiental del PMMA del proyecto Alianza Café en promedio se encuentra por encima del 60% debido a que existen factores que contribuyen al cumplimiento de las medidas como la presencia de organizaciones gubernamentales y la empresa privada que confluyen en acciones para mitigar el impacto ambiental, así como el desarrollo de estrategias que apoyan al mayor conocimiento y las prácticas adecuadas para la mitigación ambiental (capacitación, involucramiento de las mujeres, sistema de ahorro UNICA, validación de variedades de café). Los factores que obstaculizan el cumplimiento de las medidas son de corte económico por el alto costo de los insumos de fertilización orgánica y, en menor medida, la permanencia de algunas creencias como la poda es perjudicial para la productividad.
5. Un obstáculo para el cumplimiento de las medidas es el propio Plan de Monitoreo y Mitigación Ambiental que está redactado de forma general, lo cual dificulta al momento de la evaluación y la medición del cumplimiento de las medidas de mitigación ambiental, como también para su implementación. Se encontraron medidas que se repiten o que no se ajustan a la realidad de microclimas que posee cada una de las zonas de intervención del proyecto y sus implicancias agronómicas, por ello no se pueden aplicar a todas las zonas de manera similar.
6. Los actores se involucran de diferente manera en el cumplimiento de las medidas, pero las instituciones gubernamentales regionales no conocen el PMMA de la Alianza Café.

## ALIANZA PERÚ CACAO – FASE II

7. El cumplimiento de las medidas de mitigación ambiental del PMMA del proyecto Alianza Perú Cacao- Fase II lograron un nivel de implementación por encima del 50%. Los factores que contribuyen al cumplimiento de las medidas ambientales son la confluencia de instituciones públicas que contribuyen en la aplicación de las medidas de mitigación ambiental, haciéndose necesario llegar a consensos en materia de mensajes, así como las

estrategias de certificación orgánica de las asociaciones de productores y la capacitación. Se han identificado obstáculos para el cumplimiento de las medidas ambientales como los costos de los insumos para una fertilización orgánica, algunas creencias sobre la poda, la baja productividad de un tipo de cacao que puede llevar a los productores a buscar otros cultivos, incluyendo los ilícitos, y la deforestación.

8. El Plan de Monitoreo y Mitigación Ambiental está redactado de manera muy confusa lo cual dificulta la planificación, el monitoreo y la evaluación. Existen 16 medidas repetidas e incluye algunas medidas que no son pertinentes para la zona.
9. Se ha constatado que los diferentes actores perciben que el proyecto enfatiza más lo productivo que lo ambiental, porque desconocen la existencia del PMMA del proyecto.
10. La participación de la mujer se ha hecho evidente en todo el proceso productivo, hay liderazgo asumiendo cargos de presidente de sus organizaciones y son las más estrictas en el respeto del cumplimiento de las medidas ambientales, porque lo relacionan al cuidado de la familia y de los niños. Su involucramiento en las capacitaciones le han permitido el conocimiento técnico que no tenían y que ahora sienten que pueden competir de igual a igual con sus esposos en cómo llevar sus parcelas y demostrar que hay algunos aspectos técnicos que si se implementan mejora su productividad.

## RECOMENDACIONES

### ALIANZA PARA SERVICIOS DIGITALES Y FINANCIEROS (ALIANZA CR3CE)

El 15 de abril de 2020 se llevó a cabo un Taller de Co-creación de Recomendaciones con el equipo técnico de CEDRO y USAID para presentar y validar los hallazgos y conclusiones del ECR y elaborar de manera colaborativa la forma de cómo abordarlos. Los aportes permitieron el desarrollo de las recomendaciones que se enumeran a continuación.

#### PARA CEDRO

1. Elaboración de un Plan de Monitoreo y Mitigación Ambiental con un análisis de la pertinencia de cada medida tanto para las zonas de intervención, que se ajuste a las actividades anuales que la Alianza CR3CE realiza con los gobiernos locales y la empresa Yachay.
2. Articular el Plan de Monitoreo y Mitigación Ambiental con los PMMA de los socios/aliados a fin de que se complementen y logren eficiencia y eficacia.
3. El Plan de Monitoreo y Mitigación Ambiental debe ser redactado de manera más precisa incluyendo metas, indicadores y plazos para el cumplimiento de estas, así como especificar el responsable de la implementación.
4. Las actividades del PMMA deben ser incluidas en los planes anuales de actividades del proyecto, así como el monitoreo y reporte.
5. Se recomienda incluir nuevas estrategias (o complementar las existentes) de comunicación para: i) difusión del PMMA a las autoridades regionales y locales, así como con las comunidades para generar conciencia y compromiso con los temas ambientales; ii)

realización de acciones de incidencia, fortalecimiento de capacidades/asistencia técnica con municipalidades en aspectos ambientales para la inclusión de mecanismos y/o presupuestos para el cumplimiento e incentivos para la gestión de residuos sólidos y orgánicos, iii) sensibilización de buenas prácticas ambientales para la población, utilizando los telecentros como centros de difusión.

## PARA USAID

6. Es pertinente la revisión de las guías para la formulación de los PMMA a fin de que las medidas de mitigación ambiental sean realistas y precisas para facilitar la planificación, el monitoreo y la evaluación.
7. Aprobar la inclusión en el presupuesto la contratación de un/a especialista ambiental para la elaboración del PMMA y su posterior seguimiento de la implementación.
8. Promover la coordinación entre el proyecto FID y DEVIDA para articular intervenciones con municipalidades para generar planes de gestión de residuos sólidos.

## PARA GOBIERNO

9. Los gobiernos locales deben ejercer su función de la gestión de residuos sólidos de acuerdo con la Ley Orgánica de Municipalidades (Ley 27972) y el Decreto Legislativo N° 1278 – Ley de Gestión Integral de Residuos Sólidos.
10. Los gobiernos locales deben generar programas de eficiencia energética de acuerdo con la normatividad vigente, que incluya programas educativos a la población sobre ahorro de electricidad y agua.

## OTRAS RECOMENDACIONES

11. Realizar un estudio para conocer cuántas municipalidades cuentan con un sistema de reciclaje y que éste tenga el destino final segregado desde sus inicios.

## ALIANZA PARA LA EXCELENCIA EN CAFÉ (CAFE)

El Taller de Co-creación de Recomendaciones se realizó el 21 de abril 2020 en el que participaron los equipos técnicos de TNS y USAID. En esta reunión se presentaron y validaron los hallazgos y conclusiones del estudio. También se elaboraron recomendaciones de manera colaborativa, las cuales sirvieron para formular las siguientes:

## PARA TECHNOERVE

12. Revisión y actualización del Plan de Monitoreo y Mitigación Ambiental, en base a los hallazgos del estudio, realizando los ajustes que sean necesarios, estableciendo la operacionalización de las medidas y estableciendo metas e indicadores para ser monitoreados.
13. Socializar el PMMA con los actores involucrados en la promoción de la cadena productiva de café, asistiendo a las reuniones técnicas como las Mesas Técnicas Regionales con la participación de la Autoridad Regional Ambiental (ARA), Comisión Nacional para el

Desarrollo y la Vida sin Drogas (DEVIDA), Instituto Nacional de Innovación Agraria (INIA), Programa de las Naciones Unidas para el Desarrollo (PNUD), o Nacional de Sanidad Agraria (SENASA) y Gobiernos locales, Ministerio de Agricultura (MINAGRI), Ministerio del Ambiente (MINAM), Junta Nacional del Café y USAID, para unificar criterios y llevar un solo mensaje a los productores.

14. Socializar y analizar los resultados del ECR con los equipos técnicos zonales para planificar las intervenciones de manera realista.
15. Establecer estrategias para fortalecer y ampliar el rol de las mujeres en la implementación y vigilancia del cumplimiento de las medidas ambientales.
16. Sistematizar la intervención (cadena productiva) para compartirla con otros actores para su réplica y sostenibilidad.
17. Implementar una Plataforma de Gestión del Conocimiento sobre el manejo del café y la implementación de las medidas ambientales en las zonas de desarrollo alternativo y la experiencia del proyecto Alianza Café, para su transferencia a los actores involucrados.
18. Respecto a las medidas de mitigación ambiental:
  - a. Continuar el trabajo de la Alianza Café con la ONG Campo Limpio para mejorar el almacenamiento de residuos sólidos (envases de plaguicidas) con acciones de capacitación en reciclaje.
  - b. Sistematizar y difundir la utilización de vetiveria en los pozos de infiltración de aguas mieles de café como una buena práctica.
  - c. Continuar con el fortalecimiento de capacidades de agricultores sobre el abonamiento a través de las parcelas demostrativas utilizando insumos de bajo costo al alcance del agricultor.
  - d. Continuar el control de la erosión a nivel de parcelas demostrativas utilizando barreras vivas o muertas.
  - e. Concretar la elaboración de bioles para contribuir a bajar los costos de producción.
  - f. Realizar campañas comunicacionales con alternativas concretas para las zonas rurales, realizando un protocolo para ayudar al productor a cuidarse de la roya y la actual pandemia de la COVID-19 a fin de cuidar la producción de café.

## PARA USAID

19. Promover la realización de trabajo conjunto con gobierno (MINAM, MINAGRI, DEVIDA) para identificar medidas de mitigación que unifiquen criterios y que respondan a las regulaciones de USAID y la legislación peruana.
20. Fortalecer las capacidades de los socios de Desarrollo Alternativo sobre las regulaciones de la Norma 216 como insumo importante para la elaboración del Plan de Monitoreo y Mitigación Ambiental, identificando indicadores y metas que sean prácticos, realistas y de bajo costo.

21. USAID debe asegurar que los socios implementadores incorporen las actividades de mitigación ambiental en los planes de trabajo anual y que sus indicadores se encuentren en sus planes de monitoreo y evaluación.

## PARA GOBIERNO

22. DEVIDA debe promover la constitución y fortalecimiento de una instancia nacional y de las Mesas Técnicas Regionales con la participación de diferentes actores como el ARA, INIA, SENASA, MINAGRI, MINAM, gobiernos locales, Junta Nacional del Café y PNUD para unificar criterios de las medidas ambientales y llevar un solo mensaje a los productores.
23. Validar el material genético de café (en productividad y manejo agronómico) según los microclimas de la zona de desarrollo alternativo y de acuerdo con la exigencia del mercado internacional de tener una mayor calidad en café.
24. DEVIDA, MINAGRI, SENASA e INIA deben dar respuesta inmediata cuando hay plagas en los cultivos de café para evitar la propagación y la desazón del productor que migra hacia otro cultivo.

## ALIANZA PERÚ CACAO – FASE II

El Taller de Co-creación de Recomendaciones se realizó el 17 de abril 2020 y participaron el equipo técnico de Palladium y de USAID. En esta ocasión se presentaron y validaron los hallazgos y conclusiones del ECR y se elaboraron recomendaciones de manera colaborativa. A continuación, se presenta las recomendaciones que surgieron.

## PARA PALLADIUM

25. Revisar y mejorar la formulación del Plan de Monitoreo y Mitigación Ambiental, incluyendo indicadores, metas y responsables, teniendo en cuenta las diferencias regionales, el clima, la productividad, los parámetros del Ministerio del Ambiente en las medidas de mitigación ambiental y los sistemas agroforestales.
26. Incorporar los indicadores del PMMA al Plan de Monitoreo y Evaluación de la Alianza Cacao, de tal manera que se reporte de manera conjunta el avance de la implementación.
27. Monitorear el estado de avance diferenciado de implementación de las medidas ambientales por los actores: pequeño, mediano productor y asociaciones.
28. Socializar y analizar los resultados de ECR con los equipos zonales de la Alianza Cacao.
29. Elaborar un plan de comunicación del Plan de Monitoreo y Mitigación Ambiental en todos los niveles, como autoridades regionales y locales, socios y agricultores.
30. Elaborar estrategias de trabajo para fortalecer y ampliar el rol de las mujeres en la implementación y vigilancia del cumplimiento de las medidas ambientales.
31. Respecto a las medidas de mitigación ambiental:
  - a. La medida de mitigación sobre los residuos sólidos orgánicos e inorgánicos y su disposición final debe enfocarse en la mitigación y su cumplimiento y dejar de lado las opciones (compostera, microrellenos, bolsa biodegradable).

- b. La medida de mitigación de la contaminación de los cuerpos de agua por plástico debe incluir todas las posibles medidas para impedir la contaminación por plástico y no solo enfocarse en una sola medida (bolsas biodegradables).
- c. Coordinar con SENASA para el control de plagas de las nuevas variedades de cacao.
- d. Elaborar paquetes tecnológicos unificados – NIPO, MIP, BPA, coordinando con los diferentes actores regionales y locales para llevar mensajes unificados a los productores.
- e. Se sugiere identificar algunas especies forestales que se apunten a la zona e incluirlos en el PMMA.

## PARA USAID

- 32. Promover el trabajo coordinado con instituciones de gobierno (MINAM, MINAGRI, DEVIDA) para identificar medidas de mitigación que unifiquen criterios y que respondan a las regulaciones de USAID y la legislación peruana.
- 33. Fortalecer las capacidades de los socios de Desarrollo Alternativo sobre las regulaciones de la Norma 216 como insumo importante para la elaboración del Plan de Monitoreo y Mitigación Ambiental, identificando indicadores y metas.

## PARA DEVIDA

- 34. Promover espacios de consenso nacional y regional con la participación de instituciones públicas (MINAGRI, MINAM, SENASA, INIA, DEVIDA, gobiernos regionales), sector privado y socios de USAID y otros actores relevantes (PNUD) para unificar criterios e identificar medidas de mitigación ambiental.
- 35. Generar un sistema de monitoreo ambiental que permita realizar un seguimiento del cumplimiento de las medidas de mitigación ambiental acordados por consenso.
- 36. Actualizar el PERSUAP y difundirlo a los actores involucrados en cada región.



# ANNEX B: ASSESSMENT TEAM

## ASSESSMENT TEAM

**Inés Ardiles Guerrero**, Team Leader

**Dante Santa Cruz**, Natural Resource Management Consultant & Environmental Expert

**Susana Guevara**, Evaluation and Inclusion Specialist, USAID MELS Project, Technical Supervision & Evaluation Design

## QUALIFICATIONS & EXPERIENCE OF THE ASSESSMENT TEAM

**Inés Ardiles Guerrero, Team Leader, Alternative Development Consultant, All In for Development**

Economist, expert in marketing, finance, monitoring and evaluation of alternative development issues. Inés has more than 25 years of experience working in the economic and social development of Peru, 11 years of which she worked in the alternative development zones Ucayali, Huánuco, San Martín and Ayacucho, together with the United Nations and USAID. She has held monitoring and evaluation management positions in public institutions such as the Sierra y Selva Exportadora Program, the Ministry of Economy and Finance and the Ministry of Agriculture.

**Dante Santa Cruz, Natural Resource Management Consultant & Environmental Expert, All In for Development.**

Geographical Engineer, with a Master's Degree in Environmental Management. Dante has more than 20 years of professional experience in alternative development, environmental management, information systems and geographic imaging tools. He has worked on projects related to ecological-economic zoning and territorial planning, environmental management and watershed management with USAID, other donors and government institutions.

**Susana Guevara. Evaluation & Inclusion Specialist, USAID MELS Project, Technical Supervision & Evaluation Design.**

Sociologist with a master's degree in both public policy evaluation and social management. Susana has more than 25 years of experience in project design and the development of monitoring and evaluation systems in social programs, sexual and reproductive health, HIV/AIDS, gender equality and human rights. She has designed and conducted performance, impact and process evaluations, as well as gender assessments and analyses, emphasizing participatory and utilization-focused approaches. Susana has worked with both government and international institutions, NGOs, and USAID partners.

**José Alza**, Sample Estimation.

**EVALÚA SRL**, Primary Data Collection.

# ANNEX C: CONCEPT NOTE



## ENVIRONMENTAL COMPLIANCE REVIEW – ALTERNATIVE DEVELOPMENT

CONCEPT

SEPTEMBER 27, 2019

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# ACRONYMS

AD	Alternative Development
BEO	Bureau Environmental Officer
CEDRO	Information and Education Center for the Prevention of Drug Abuse
DEVIDA	National Commission for Development and Life without Drugs
ECR	Environmental Compliance Review
EMMP	Environmental Monitoring and Mitigation Plan
GOP	Government of Peru
IP	Implementing Partners
MELS	Monitoring, Evaluation, and Learning for Sustainability
MEO	Mission Environmental Officer
REA	Regional Environmental Advisor
USAID	United States Agency for International Development

*The purpose of this concept note is to provide an initial framing to guide subsequent design activities in collaboration with the mission and other stakeholders. Inputs for this concept note were derived from an initial scoping visit conducted by Margaret Harritt in September 2019. To ensure needed inputs, the MELS team developed a set of initial guiding questions (presented in Annex 1). The culmination of the design process will be an assessment design that will include the scope of the assessment, team structure, sampling strategy, data collection strategy, deliverables schedule, and timeline. Therefore, the assessment strategy outlined in this concept note should be considered as a first step in the design process and a platform for subsequent collaboration on a final design.*

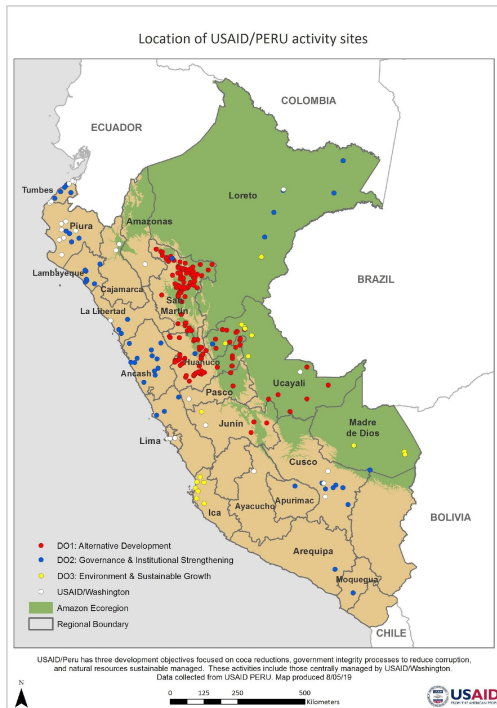
## PURPOSE, BACKGROUND AND CONTEXT

The **purpose** of this task is to provide analysis of the environmental compliance of selected alternative development programs with implementing partners CACAO/Palladium, CAFÉ/Technoserve, and CR3CE/CEDRO. The Alternative Development (AD) Program Environmental Compliance Review (ECR) will focus on:

1. Degree to which activities meet or conform to Reg216 and Peruvian national requirements for external identification and documentation of environmental compliance with mitigation tasks laid out in the Environmental Monitoring and Mitigation Plan (EMMP) for each AD project activity.
2. Identifying ways to increase compliance with environmental mitigation tasks; emphasis on clarifying reasons and context factors for successful compliance and creative, multiple approaches to increase compliance using an evaluative approach integrated with the ECR described above.
3. Providing practical recommendations based on substantive input from all team members (esp. IP staff and beneficiaries themselves) on how activities can build on existing success around compliance, as well as improvements needed to ensure fuller compliance.

Considerable emphasis of the ECR Team's effort will focus on #2 and 3 above, and as such, recommendations will include both actions that can be taken by IPs and beneficiaries in the short and medium term, and those that require further investment through MELS (e.g., MELS Learning Agenda, etc.) or other means, along those lines of priority.

**Background:** ECR's are an opportunity for **more efficient resource allocation**. A risk-based approach helps determine the level and frequency of ECR needed for activities which allows AORs/CORs to better allocate often-limited resources. The Mission Environmental Officer (MEO) helps determine activities' relative level of risk and a compliance verification approach that is efficient and effective. The ECR process encourages **early and more frequent communication and collaboration** between stakeholders, including USAID, through actions such as field visits, for geographically-separated team members. USAID Implementing Partners are encouraged to incorporate **adaptive management solutions** that benefit, or at least reduce harm to, the environment, especially with limited resources. The ability to conduct real-time evaluation of management outcomes' effectiveness and make any needed adaptations, such as tailoring the EMMP, is another ECR benefit. Rather than a focus on documenting issues of



noncompliance, an ECR allows teams to identify issues and adapt the project’s environmental management accordingly.

**Context:** USAID’s Alternative Development project is implemented primarily through activities of Palladium (Alianza CACAO), Technoserve (CAFÉ), CEDRO (CR3CE), and GOP partner DEVIDA. These implementing partners carry out environmental mitigation interventions per activity EMMPs throughout the year, and they conduct annual internal ECRs per Regulation 216 and Peruvian environmental requirements. In addition, annual external ECRs are carried out by USAID for these three alternative development activities.

Previous ECRs, both internal and external, show room for improvement, with compliance ranging from 15-80% compliance depending on mitigation task, and effectiveness between 30-60%. The approach for prior ECRs has mainly been as an audit function, identifying the degree of compliance with limited

reference to causes, with follow-up training to address the compliance needs.

USAID’s vision for this external ECR is to: improve compliance through a collaborative team approach with implementing partners and beneficiaries; learn more about foundational and context factors which enable successful compliance and improved effectiveness through an evaluative approach; and use creative approaches and alternatives through EMMP adaptation and other responses to improve results of the ECR. Training is not seen as a key response for improved compliance, although may also be part of adaptive approaches for behavior change.

**The audience** for the results of the ECR analysis are USAID staff responsible for implementation of Reg 216 requirements (Mission Director, MEO, REO, BEO), and USAID managers, implementing partners and beneficiaries of the USAID Alternative Development project.

## APPROACH AND METHODOLOGY

The ECR team will approach this assessment through an appreciative inquiry lens. Appreciative inquiry involves an explicit focus on identifying strengths and factors of successes, and on innovative ideas for continuous improvement. It directs respondents to study success and provide their insights about a program or organization through that study. However, appreciative inquiry does not mean an evaluation that is biased towards the positive. Indeed, we find that appreciative inquiry better enables frank discussions about challenges and disappointments than more ‘traditional’ data collection approaches.<sup>1</sup>

The ECR Team’s approach will be guided by two key elements integrated into one approach: (A) complete the external ECR data collection (linked to Purpose #1 above); combined with (B) evaluative questions and methods to analyze the factors facilitating or obstructing implementation

<sup>1</sup> <https://encompassworld.com/resources/frequently-asked-questions-appreciative-inquiry-evaluation>

of environmental compliance tasks (linked with Purpose #2 and #3 above). The purpose of this Concept Note is to inform internal constituencies within USAID and MELS regarding the ECR. The MELS Team has continued to advance early design planning, including engagements with key stakeholders of the ECR. Initial meetings with USAID staff, especially AD and the MEO, informed the vision for the task. This was followed by background document review, ECR orientation within the MELS Team, and consultations with MELS, USAID and IP staff to inform the task concept and initial design.

Once the concept is approved by USAID, the full task team will be employed and collaborate with IP field staff to develop the design, including sampling scope and mixed methods, making site visits if needed. The team will: develop the full design; identify local data collection teams and integrate IP technical advisors for data collection; carry out data summary, analysis and draft initial findings; collaborate with USAID and IPs in validation and learning meetings for development of recommendations; draft and vet reports; and share results through learning sessions with key stakeholders. Surveys, focus groups, direct observation, expert interviews and other methods may be used for integrating an evaluative lens with the traditional ECR methods. The ECR Final Report will be no more than 20 pages, including a 2-page Executive Summary, and excluding appendices. The main report will be in English language.

## ASSESSMENT QUESTIONS

High level framing questions are presented below. This question set is presented for reflection and reaction from USAID. The assessment questions and sub questions will be honed and finalized during follow on design activities.

- 1) What are the facilitating and impeding factors for environmental compliance?
- 2) What are creative and established alternatives to achieve compliance that also reflect the reality of beneficiaries and activity budgets?
  - Of these, which are most accessible?
  - Which are possible in the medium term of activity implementation?
  - How can attitude and behavior change goals be practically integrated into EMMPs and ECR processes in ways that are cost-effective and track with the realities of daily lives of beneficiaries?
  - Are some of these possible to address in follow-on activities through other MELS activities (such as AD learning agenda, etc.)?
- 3) How can USAID and IPs improve environmental compliance of beneficiaries?
  - How can USAID assist IPs to improve environmental compliance of beneficiaries?
  - How can USAID / Peru improve its engagement to achieve greater effectiveness and efficiency in compliance with environmental requirements?

# MANAGEMENT

## TEAM STRUCTURE

The ECR Team will be led by the Task Leader, and supported with technical, management, data collection, and analytical support from other members of the ECR Team, to be defined depending on the scope, timing, and budget. The final team structure will be dependent on the final scope of the assessment as presented in the forthcoming assessment design. (see Annex II for Task Team Member profiles). In addition to the ECR Task Team that will finalize the ECR design and implement the ECR, All In's Margaret Harritt, PhD. and/or Armando Valdés, PhD., will be available to provide the team with senior technical assistance, guidance, and provide quality assurance.

## WORKPLAN AND SCHEDULE

Proposed locations are in Huánuco, San Martín, Ucayali, and possibly VRAEM. Locations will be confirmed during design process.

### **High Level Timing:**

- Concept note and Design: August– October 2019, using participatory design process
- Implementation: October 2019–March 2020, with preliminary results in December 2019.



## TENTATIVE WORKPLAN AND SCHEDULE

DELIVERABLE	TASKS AND ACTIVITIES	M E L S	U S A I D	A U G 2 0 1 9	S E P T 1 6	S E P T 2 3	S E P T 3 0	O C T 7	O C T 1 4	O C T 2 1	O C T 2 8	N O V 4	N O V 1 1	N O V 1 8	N O V 2 5	D E C 2	D E C 9	D E C 1 6
<b>ECR CONCEPT &amp; DESIGN DEVELOPMENT</b>																		
CONCEPT NOTE	Literature & document review	X																
	Consultations with MELS, USAID and IPs	X	X															
	Concept Note drafted and submitted to USAID	X																
	Concept Note approved by USAID		X															
DESIGN	Develop ECR design, strategy, approach; field visits by ECR team w/IPs	X																
	Hire ECR team members	X																
	Develop tools	X																
	Faciliate validation sessions w/USAID, DEVIDA, IPs, MESA, other stakeholders	X	X															
	Finalize design	X																
	USAID approve design		X															
<b>FIELD WORK, DATA COLLECTION, INITIAL ANALYSIS &amp; FINDINGS</b>																		
	Site visit routes & logistics finalized w/IPs	X																
	Hire and train field staff	X																
	Data collection	X																
	Data summary, management	X																
	Initial data analysis, findings, draft report	X																

DELIVERABLE	TASKS AND ACTIVITIES	M E L S	U S A I D	A U G 2 0 1 9	S E P T 1 6	S E P T 2 3	S E P T 3 0	O C T 7	O C T 1 4	O C T 2 1	O C T 2 8	N O V 4	N O V 1 1	N O V 1 8	N O V 2 5	D E C 2	D E C 9	D E C 16
	Review initial analysis, findings and recommendations	X																
DRAFT FINDINGS AND RECOMMENDATIONS	Submit summary phase I findings and recommendations. Hold meeting with USAID to present and validate findings and co-create recommendations.	X	X															
<b>FINALIZE ANALYSIS, FINDINGS AND REPORT – JANUARY/FEBRUARY 2020</b>																		
DRAFT REPORT	Develop draft report	X																
	Review draft report		X															
	Hold virtual meeting with USAID and key stakeholders to present and validate draft findings and recommendations	X	X															
FINAL REPORT	Submit final report that incorporates USAID feedback.	X																
	Final USAID approval. Post to the DEC as appropriate.		X															
	Facilitate learning/review session with USAID, key stakeholders and beneficiaries	X	X															

# ANNEX I: QUESTIONS FOR CONCEPT NOTE DEVELOPMENT

*This annex presents a set of questions that were used by the assessment team to understand the context and sensitivities of environmental compliance of Alternative Development activities.*

## Design and implementation of EMMPs and ECR

- What are the current USAID/MEO requirements for frequency of ECRs? Are these flexible for each activity, and if so, what are the criteria (ie, compliance level, other?)
- Were EMMPs developed in relation to the activity conditions – ie, if an organic coffee activity involves composting coffee husks – would this practice still be part of the EMMP? Or are EMMP activities largely an ‘add-on’ to already full intervention requirements?
- For IPs - Is the content of the EMMP adapted from standard approaches and formats? As the IP creates or adapts the EMMP to the specific activity, what is the process – who develops the EMMP, and is there consultation with IP technical staff and/or beneficiaries in the process or mainly socialized with these groups? To what degree can the IP adapt the content of the EMMP – does the MEO need to periodically check that the EMMP meets basic requirements?
- In the design of the activity, or in ongoing design adaptations, how were EMMP mitigation activities considered and integrated into the process?
- Who in the IP structure is responsible for managing the implementation of EMMPs? If it is the MEL team, are they fully engaged across activity implementation, or are they a ‘stand-alone’ mainly for metrics and reporting? Are results of ECRs integrated into interventions, and if so, how?
- How are mitigation actions implemented on the ground? Are sufficient resources available for implementation?
- Is training related to EMMP implementation integrated across activity interventions, stand-alone, or a mixture?
- What is the IP’s view of the ECR – is it a useful management tool, why or why not, and how can ECRs be implemented as a team effort to improve environmental management instead of a ‘audit’ or punitive action? How can USAID be more supportive of IP efforts to reach better compliance and effectiveness?

## Improvement of compliance (lack of, partial and full levels) and effectiveness of mitigation activities

- What is the IP’s view of lack of compliance – are the reasons clear, and how do these responses differ among levels of IP staff (management, technical field staff, MEL staff, etc)? Do these reasons differ from those given by beneficiaries? Have gender issues been analyzed in relation to compliance behaviors?
- Why are some regions or groups performing better than others for both compliance and effectiveness? What factors seem to be the major influence? To what degree are attitudes and cultural factors involved in compliance behavior, or are perceived reasons structural (competing time demands, other) or economic for beneficiaries?
- Why has training alone to date been insufficient for behavior change over time? Does training address effectiveness of methods and does training need to be updated to improve compliance and/or effectiveness?

- To address the lack of compliance and to learn from positive cases of compliance, to what degree is the ECR methodology flexible? For example, if surveys were mainly used in previous ECRs, and the addition of focus groups, or the use of systems/context analysis, is justified to obtain more nuanced feedback on compliance behavior? Any limitations on integrating a standard approach for compliance purposes with evaluative techniques (such as behavior assessment questions as part of standard survey), or is a phased approach necessary?
- What are current incentives and disincentives for compliance? For example, what happens at the end of an activity, when there was inadequate compliance? Are there any activity interventions that would lend themselves as incentives, such as small grants, exchange visits, or specialized TA that could be linked to EMMP implementation?
- How can mitigation actions required by the EMMP be better integrated into ongoing interventions? Is this a feature of successful EMMP implementors?
- If changes need to be made to some details of EMMPs to improve compliance, what are the criteria or at what level would these need to be approved by the MEO? For example, if the timeframe required for completion of some actions should be lengthened, or the steps in the process modified?

## ANNEX II: TEAM PROFILES

To support the Alternative Development Program Environmental Compliance Review (ECR), MELs will hire and support a team of expert consultants to implement the ECR. The final team structure and LOE will be determined by the scope of the assessment design. Based on this concept note, initial team member responsibilities are presented below.

### **Task Leader, and Alternative Development/Agriculture Expert:**

- Skills: sampling design, methodology and analysis development; assessment/evaluation exp.
- Skills: AD programs & concepts; coffee & cacao production, marketing, value chains
- Design and methodology for ECR, including evaluative assessment elements, survey and other sampling instruments, formats, site visits. Participate in meetings with stakeholders (USAID, IPs, field teams). Train and manage field teams for surveys and interviews
- Management of ECR Team, tasks, formation and training core teams around tasks. Lead and manage methodology and task development, implementation, analysis, findings & recommendations, reporting, follow-up processes. Manage Stakeholder Engagement.
- Manage report preparation, writing, translation, presentation

#### ***The ECR Team will include:***

- Task Leader/AD Expert
- Natural Resource Management / Environment Expert
- Performance Management Expert
- Research & Reporting Specialist
- Surveyors

### **Natural Resource Management/Environment Expert:**

- Skills: Nat'l resource mgmt., alternative development; familiarity w/Reg 216, env. mitigation and compliance
- Design and methodology for ECR, including evaluative assessment elements, survey and other sampling instruments, formats, site visits. Participate in meetings with stakeholders (USAID, IPs, field teams). Train and manage field teams for surveys and interviews
- Data cleaning, compilation, analysis; and findings and co-creation of recommendations.

### **Performance Management Expert:**

- Skills: Project management experience, management of field data collection, admin.
- Support all ECR Team members with administrative, research and drafting, travel, field data collection logistics support.

### **Research and Reporting Specialist:**

- Skills: Research and Analysis experience, translation, report drafting, formatting, and publishing.
- Research support, data cleaning, compilation, analysis, technical writing
- Compiling English and Spanish Language final versions of report.

### **Surveyors:**

- Skills: Field-based data collection/enumeration experience (surveys, KIIs, etc.)

Surveyors will deliver survey instruments designed by the ECR Team at field-based alternative development project sites.

# ANNEX D: ENVIRONMENTAL MITIGATION MEASURES

## ALLIANCE FOR DIGITAL & FINANCIAL SERVICES (CR3CE ALLIANCE)

1. Regarding new deployments or relocations of lifting towers for relay masts, avoid laying them within protected areas or buffer zones. Instead, lay them within previously disturbed areas (i.e. secondary forests [*purmas*], grasslands, agricultural areas).
2. When installing lift towers, activities affecting trees, such as indiscriminate pruning or felling aiming at providing a line-of-sight (LOS) should be avoided.
3. Reforest and allow natural regeneration of native species surrounding lifting towers for relay masts when located in rural zones. Planting *Centrosema macrocarpum* (SourceTrust, 2013), a shrub commonly named *Centrosema*, which works well as soil cover, is suggested.
4. Lifting towers for relay masts must be properly signposted and have beacon lights in place when maximum permissible height is exceeded by buildings or other towers nearby.
5. For lifting towers or other equipment implemented in homes or public spaces, install an information panel including signposting with safety measures for people and to prevent littering.
6. For lifting towers or other equipment implemented in homes or public spaces, easy safety and maintenance instructions and a telephone number to report incidents will be provided for ongoing use, and semi-annual monitoring visits will be conducted.
7. Use of safety and protection equipment such as safety harnesses and helmets, for the implementation of lifting towers and mast installation.
8. Use of safety and protection implements for maintenance and/or reinforcement of lifting towers and/or masts, such as safety harness, helmet, gloves, face masks and others.
9. Check towers and relay mast to see if anti-corrosion paint is correct or chipped off, tension ropes are tight and locks should be replaced due to rusting.
10. Collect used paint containers and other used containers (e. g. thinner, turpentine, etc.) to avoid their reuse in environmental or human-health risk activities (such as water/food carriage or storage), as per the Waste Management Plan.
11. For new ground well deployments, installation should take place at least 50 m from riverbanks and 20 m from ravines.
12. Ground wells should have danger signs placed as well as signs indicating the resistance levels as per standards (see National Electrical Code – Peruvian Technical Standard No. 370.053.1999 of the Ministry of Energy and Mining).
13. Develop small gardens (similar in area to the ground wells) at locations that favor their development. Those gardens must include ornamental plant species such as *Croton sp.*, roses, common grass or similar ones.
14. Measure the ohms level of each well to verify if they are operational at least once a year (see National Electricity Code - MEM Peruvian Technical Standard No. (370.053.1999).
15. Collect used chemical containers, as per the Waste Management Plan.

16. Implement a solid waste (organic and inorganic waste) and hazardous electronic waste (cells, batteries, monitors, computer pieces, etc.) sorting and management system. See the Waste Management Plan.
17. Sign agreements with local governments that have a system of segregation and with private companies in order to manage final waste disposal.
18. Maintenance plan for electrical equipment (water pumps, air conditioning, lights, computer equipment and others) and maintenance of sanitary installations including water taps available to users in telecenters and other places used by the company for public service, to prevent and/or avoid water leaks.
19. Biannual application of a verification sheet of the state of the telecenters and their sanitary facilities, which ends in a communication with recommendations for the municipalities. Also, follow up on the recommendations made.
20. Implement and execute activities aimed at efficient use of water and energy.

## COFFEE ALLIANCE FOR EXCELLENCE (CAFE)

1. The CAFE Project will ensure that assistance for pesticide procurement or use (including pesticide usage training or technical assistance) will be provided according to the Pesticide Evaluation Report and Safer Use Action Plan (PERSUAP) guidelines.
2. The CAFÉ Project will ensure that Fertilizer Management Plan provisions are incorporated into the fertilizer usage training.
3. Organic fertilizer preparation (solid and/or liquid), as well as inclusion of green fertilizers (manure, compost) to improve soil quality, will be a priority in the training events for farmers.
4. Apply the Integrated Pest Management principle.
5. The use of personal protection equipment to apply pesticides is mandatory.
6. Management and final disposal of pesticide waste containers.
7. Promote the use of coverage species and mechanical resources to control weeds.
8. Train farmers in the correct use of pesticide and fertilizer.
9. Encourage the construction of small coffee pulp waste collection sites.
10. Encourage the construction of small infiltration wells and channels to channel coffee waste water and, thus, prevent aquifer contamination
11. Encourage organic fertilizer preparation using coffee pulp.
12. Train field technicians and farmers in shade tree management.
13. Promote the installation of native trees that are well adapted to the area instead of installing other, unknown species.
14. Encourage regular shade tree management and, if necessary, avoid cutting big branches; prefer cutting small pieces.
15. Provide coffee waste water management training as well as pulp waste management training.
16. Encourage organic fertilizer preparation (manuring) using coffee pulp.

17. Carry out intensive farmer training in different soil conservation methods. Consider installing slow-forming terraces, contour lines, living or dead barriers to retain pollutants. Each soil conservation measure should be subject to the slope angle.
18. The use of the "A" level should be considered for the planning of new plantations.
19. Model plots should be set up on how to avoid erosion.
20. Encourage the concept of "water conservation"
21. Apply manure on the plot, taking advantage of the coffee stubble (leaves, branches)
22. Cultivate a nitrogen-fixing crop as a soil cover, between the rows of the coffee crop
23. Train farmers on short- and long-term health risks
24. Promote the use of protective equipment (gloves, goggles, clothing and boots)
25. Advise farmers not to blow on clogged nozzles

## PERU CACAO ALLIANCE - PHASE II

1. The centralized cacao processing module must be located at a distance of more than 50 meters from a watercourse that is not flooded and that has a high water table.
2. Fermentation crates, whether for pile- or box-scale fermentation, must be prevented from being in direct contact with the soil. For this reason, the implementation of a collection system with gutters for the evacuation of mucilage that transports the waste to containers for later use, to septic tanks or pre-treatment pools (effluent stabilization) will be encouraged.
3. Roofs should preferably be made of wood and covered with transparent plastic calamine, palm leaves or zinc. Basic sanitation facilities or a latrine must be operational, improved or built.
4. At least one container for solid waste should be installed.
5. Signage should be implemented.
6. Training in the operation and maintenance of the module and benefit of cacao to partners/farmers, meeting the standards of differentiated quality, as well as the environmental regulations in force, should be provided.
7. Reforestation with species from the area, in the contours of the catchment area of the water system for fertigation, helping to control landslides due to the effect of the slope, is to be promoted.
8. Training for the partners/farmers in the operation and maintenance of the fertigation system, complying with the environmental regulations and techniques required, should be provided.
9. Family benefit modules should be located away from houses, and the "honey water" should be piped to septic tanks or artisanal collection systems.
10. Recommend the implementation of artisanal septic tanks or the implementation of collection systems for the treatment of "honey water". Artisanal septic tanks can consist of: filtering trench or percolating well of 1m x 1m x 1m deep with gravel material of 2" for the first 50 cm and with gravel material of 1" for the following 25 cm. and concrete the last 25 cm (surface).
11. In properties with a high water table, another area will be located or a filtering ditch will be made of lesser depth and compensated in the width, avoiding impounding of the "honey water". This will



be applied for exceptional cases. In addition, a system to collect the "honey water" in tubs will be implemented, so as to later arrange the "honey water" in manuring systems.

12. Training should be provided to the partners/farmers in the operation and maintenance of the family benefit module, in compliance with the required environmental and technical regulations.
13. Promote the use of biodegradable plastic bags (derived from natural polymers) to be used in the production of cacao plants.
14. Training of partners/ farmers in the production of cacao seedlings in nurseries, complying with environmental and technical regulations.
15. Training of partners/farmers and the technical staff of IPM and PERSUAP.
16. Producers will be informed of the importance of PERSUAP, especially indicating that it is a guide for Integrated Pest Management (IPM), prioritizing the application of organic, biological and preventive approaches.
17. The use of personal protective equipment (face masks, glasses, raincoats, etc.) should be recommended.
18. Training in good practices for safe use of pesticides.
19. Pesticide storage should be done safely, in a fresh and dry environment, avoiding the exposure to wet areas. They should be stored safely in closed environments, avoiding the presence of pests and domestic animals or children that could have access to them.
20. Promote the location of safe areas for the preparation of pesticides, washing of equipment and materials, away from water sources, performing the "triple washing" of spraying equipment and reuse of wash water on sprayed crops.
21. Training for partners/farmers and technical personnel in topics inherent to the sowing and harvesting of rainwater.
22. The implementation of septic tanks for the disposal of "honey water" waste and the implementation of "honey water" collection systems will be encouraged.
23. Use of genetic material free of pests and diseases that come from identified and guaranteed plots.
24. The implementation of strict use of integral nutrition techniques and timely pruning (NIPO) should be promoted.
25. Promote manuring by making small waste piles (*rumas*) of approximately 100 pods, which are then provided with a black or transparent plastic cover.
26. A participatory training program will be implemented using "model plots", where the producer has correctly implemented good agricultural and environmental practices.
27. Recommend weed control based on cultural management (use of mulch, shade, coverage, and others), where the use of herbicides will be reduced to a minimum.
28. Training in Integrated Pest Management (IPM) to partners/farmers, technical staff and extension agents.
29. Promote periodic maintenance of equipment, to avoid leaks and unnecessary expenses of fuel and lubricants; also plastic sacks on the floor of fuel and lubricant storages.

30. Promote the safe collection of inorganic solid waste for agricultural use (plastics, cans, bags, etc.) in sacks to be disposed of temporarily in strategically selected places (warehouses) for their subsequent final disposal.
31. Safe collection of waste (pesticide containers) in sacks should be promoted, and such waste must then be transported to a central collection point implemented in the village. After coordination with SENASA and accredited solid waste service providers, final disposal will be arranged.
32. The solid waste from PVC waste (pipes), remains of hoses, contaminating containers from fertigation, remains of oils and lubricants, fuel containers, inflammable materials and others, will be temporarily disposed of in strategically selected places (warehouses), for their subsequent final disposal.
33. Total cleaning of the nursery (wild cane, slats, boards and biodegradable bags) must be performed. The corresponding waste is to be placed in a specific place at the side of the cacao plot for its later decomposition. Likewise, it is recommended that environmental liabilities be collected (wires, polyethylene bags, plastic containers, Rashell mesh, and others), which are to be deposited in sacks and transferred to a temporary warehouse for their final disposal.
34. Avoiding the cutting and burning of primary forests, as well as secondary forests older than 5 years, especially during the preparation of land for the installation and nursery of the cacao crop, will be promoted.
35. Training aimed at the partners/farmers and technical personnel of the project in biodiversity conservation should be provided.
36. Zoning maps of areas to be intervened should be provided, with identification if the areas are located near Natural Protected Areas (NPAs), Permanent Production Forests (PPFs) or in Buffer Zones.
37. There will be no program intervention in ANP, BPP or forest concessions.
38. Training should be provided to partners/agriculturists and technical personnel in the zoning of areas of intervention.
39. The area of land for the marginal strip will be fixed, according to the dimensions of the riverbed or water body and may have a variable width, from a minimum of four (4) meters to the width required to carry out activities of protection and conservation of the natural water source, allow the primary use, free transit, establishment of surveillance roads or other services. Likewise, the dimensions can vary according to established uses and customs, as long as they do not generate a risk to human health and life (Regulations set out in the Water Resources Law 29338).
40. The use of live plant barriers for containment (*Erithrina edulis*, *Bambusa* sp and/or the planting of forest trees), to avoid undermining, in the marginal strip, should be promoted.
41. Implement a collection system with gutters for the evacuation of mucilage that transports the waste to containers for later use, to septic tanks or pre-treatment pools (wastewater stabilization).
42. Locate the benefit modules away from houses and outside the area of smelly odors, such as fertilizer storage, chicken shed and fuel storage. Furthermore, such boxes should be placed inside a structure with a roof and that does not allow strong drafts.
43. Training of project partners/farmers and technical staff in post-harvest handling of cacao should be provided.

44. For the purpose of drying, polyethylene sacks will be implemented to avoid contamination of the cacao beans with the soil and/or cement tiles.
45. Training in good practices for cacao drying should be provided.
46. Adequate management mechanisms should be established in all warehouses of the collection centers, convenient location, adequate ventilation and protection against rain, use of containers that favor aeration and drying and use of pallets (*parihuelas*) for stacking bags so they do not come into direct contact with the soil. The presence of rodents should be controlled and checked.
47. The installation of live barriers with species such as *Vetiveria zizanioides*, *Erythrina sp.*, *Inga edulis*, *Arachis pintoi* (Fodder peanuts), *Bolaina*, *Capirona*, *Shaina*, and *Palo lápiz* should be encouraged.
48. The implementation of infiltration trenches, measuring 50 cm wide x 40 cm deep, which will allow the stability of the soil, in slopes greater than 20%, is recommended.
49. Training aimed at the partners/farmers and technical personnel of the project in management practices and soil conservation should be provided.
50. A fertilization plan should be implemented.
51. Digging of 0.80 to 1.0 m-deep excavations (test pits), to determine the soil compaction level (soils with low oxygen, water and nutrient input) and the water table (the distance of the water from the ground surface).
52. In case plots with shallow soils are identified, due to the presence of water (high phreatic level) and floodable soils, the opening of drains to evacuate the excess water from the premises will be encouraged.
53. Training in adequate crop management with emphasis on the protection of soils with coverage and fertilization practices based on sources of major elements (nitrogen, potassium, sulfur, calcium, manganese and phosphorus) and minor elements (copper, zinc, molybdenum, boron, manganese, iron), should be provided, to decrease the pressure to change soil use, in order to increase productivity.
54. Localized irrigation techniques, maintaining living and dead plant cover for cacao pollinating microfauna, maintaining leaf litter and soil organic matter, and adequate thinning should be promoted.
55. The establishment of forest trees to the contour of the cacao plots, borders of ravines and secondary forests (*purmas*) in recovery, etc., should be encouraged.
56. Training in burns and their vulnerability to climate change should be provided.
57. The installation of living soil cover of the leguminous type, such as *Canavalia*, *Callisia* and others, should be promoted, as well as dead cover using weed residues, remains of pruning branches, decomposing trunks, banana pseudostems and other vegetable remains found in the surroundings of the plot. The practice of soil management to prevent soil erosion and generating biomass residues to increase organic matter in the soil, should be encouraged.
58. Training should be provided aimed at the partners/farmers and technical staff of the project in cover and green manure.
59. An Occupational Health Plan will be implemented, which will contain training programs, meeting schedules, "5-minute talks", etc. throughout the project. Those in charge of the plan will be the field technicians.

60. Training for farmers/partners and technical personnel in Safe Use of Pesticides should be provided, and the use of protective clothing and implements and carry out the cleaning of application implements is to be promoted.
61. Each Subsidy operator must develop their own EMMP to identify environmental impacts, as well as include prevention, mitigation and control measures; according to USAID and Peruvian environmental regulations.
62. Previous trainings and design of methodological guide for sub-donors according to the activities to be carried out, will be provided.
63. Previous information to the sub-donors such as the zoning of the area to be intervened, locating zones of natural protected areas, permanent production forest, forest concessions and others for the correct planning in the prospecting and selection of lands, will be provided.
64. Guides, or flyers will be prepared that serve as tools that help producers controlling their plots.
65. Training in the operation and maintenance of the module and benefit of cacao to the partners/farmers, in compliance with the standards of distinct quality, as well as environmental regulations.
66. Training for the partners/farmers in the operation and maintenance of the fertigation system, in compliance with the required environmental and technical regulations.

# ANNEX E: SAMPLE ESTIMATION

## Sample Determination

The sample was determined by considering the following procedures: definition of the target population, sample design, definition of the simple framework, and calculation of the sample size.

## Target Population

Made up of all the cacao and coffee producers that participate in the alternative development programs of the implemented partners and their interventions: the Palladium/Peru Cacao Alliance, the Technoserve/Coffee Alliance and the CEDRO/CR3CE Alliance.

## Sample Design

The design of the sample is probabilistic, multi-stage, stratified and conglomerate where the selection unit is the agricultural producers and the observation unit is the agricultural property.

**Probabilistic.** Each member of the population has the same probability of entering the sample.

**Multi-stage.** Samples are taken by stages using descending sampling units with the objective of making the process more practical.

**Stratified.** Three sets of sampling units (strata) were formed corresponding to the departments of Huánuco, Ucayali, and San Martín.

**Conglomerates.** They are composed of two stages of sampling units (clusters), the first stage corresponds to the provinces and a second stage to the districts of the previous stage.

## Sample Framework

The same framework is made up of the Board of Agricultural Producers of Cacao and Coffee participating in the alternative development programs of the implementing partners and their interventions: the Palladium/Cacao Peru Alliance, the Technoserve/Coffee Alliance, and the CEDRO/CR3CE Alliance.

## Sample Size

The sample size for the intervention design is given by the following formula:

$$n = \frac{N Z^2 P(1-P)}{h^2 (N-1) + Z^2 P(1-P)}$$

Where:

**n:** Required simple size

**N:** Population size

**Z:** 95% reliability level (Standard Value of **Z** = 1,96)

**P:** Proportion of elements with the studied attribute (**P** =0.5)

**h:** Limit of the estimation error or margin of error (**h** = 0.09)

Therefore, the following can be considered:

- DEF: Design effect of 15% in order to correct the design difference. The design effect provides a measure of the accuracy gained or lost by the use of more complex design rather than a simple random sample.
- Unexpected factors: The sample size was increased by 10% to address contingencies for missing answers or recording errors.

The required sample size is as follows:

<b>AREA</b>	<b>CACAO</b>	<b>COFFEE</b>
Huánuco	25	74
San Martín	91	70
Ucayali	32	--
<b>Total</b>	<b>148</b>	<b>144</b>

### Sample Selection

For this investigation, the agricultural producers of the samples of cacao and coffee were selected by means of a stratified poly-stratified probabilistic sampling and of conglomerates, in the first stage a stratified sampling was used (each stratum conformed by the departments of Huánuco, Ucayali and San Martín), The second stage consisted in the selection of clusters (each province of the departments investigated formed level 1 clusters), while in the third stage, cluster sampling was used as well (each district of the selected provinces formed level 2 clusters) and the final selection unit was the agricultural producer. It is important to point out that the IBM SPSS statistical software was used to carry out the sample selection under the technical criteria indicated. It is important to point out that to cover unforeseen events during the field operation, 28 additional samples of coffee producers and 31 additional samples of cacao producers were selected.

# ANNEX F: DATA COLLECTION INSTRUMENTS

## ALLIANCE FOR DIGITAL & FINANCIAL SERVICES (CR3CE ALLIANCE)

N° DE FICHA			
<b>REVISIÓN DEL CUMPLIMIENTO AMBIENTAL (ECR) - 2019</b> <b>PROYECTO ALIANZA CR3CE</b>			
<b>A. DATOS DEL TELECENTRO</b>			
1. NOMBRE DEL TELECENTRO			
2. FECHA DE INICIO DE OPERACIONES	<i>Día</i>	<i>Mes</i>	<i>Año</i>
<b>B. UBICACIÓN DEL TELECENTRO</b>			
3. GEORREFERENCIA			
	LATITUD		
	LONGITUD		
	<i>Código</i>	<i>Nombre</i>	
4. REGION			
5. PROVINCIA			
6. DISTRITO			
7. CENTRO POBLADO			
8. DIRECCIÓN DEL TELECENTRO			
<b>C. ADMINISTRACIÓN DEL TELECENTRO</b>			
9. MUNICIPALIDAD A CARGO DE LA ADMINISTRACIÓN DEL TELECENTRO	<input type="checkbox"/> Municipalidad Provincial <input type="checkbox"/> Municipalidad Distrital	<i>Nombre de la Municipalidad:</i>	
10. NOMBRES Y APELLIDOS DEL ADMINISTRADOR DEL TELECENTRO			
11. DATOS DE CONTACTO DEL ADMINISTRADOR DEL TELECENTRO			
<b>D. DATOS DEL TRABAJO DE CAMPO</b>			
12. NOMBRE DEL OBSERVADOR			
13. FECHA DE APLICACIÓN	<i>Día</i>	<i>Mes</i>	<i>Año</i>
14. NOMBRE DEL SUPERVISOR			
15. NOMBRE DEL DIGITADOR			

E. MEDIDAS DE MITIGACIÓN - POZOS A TIERRA					
MEDIDAS DE MITIGACIÓN	1 = Cumple con la medida	2 = No cumple con la medida	3 = No es posible determinar el cumplimiento	4 = No aplica la medida	Comentario
<b>1 Los pozos a tierra se ubican:</b> <i>Solo algunas torres de elevación tienen pozos a tierra. Aplicar solo en esos casos .</i>					
1.1 A más de 50 metros de la ribera de los rios	1	2	3	4	
1.2 A más de 20 metros de las quebradas	1	2	3	4	
<b>2 Señalización del pozo a tierra:</b>					
2.1 Cuenta con un cartel (amarillo) que diga "Pozo a tierra" <i>El cartel por lo general es de color amarillo.</i>	1	2	3	4	
2.2 El cartel se encuentra en la dirección del pozo <i>El cartel debe estar en la ruta hacia el pozo a tierra y cerca a él. No existe una distancia reglamentaria.</i>	1	2	3	4	
2.3 Los pozos a tierra cuentan con señalización de los niveles de resistencia establecidos por las normas de electricidad	1	2	3	4	
<b>3 Sobre la instalación de jardines:</b> <i>Esta medida considerarla solo en los casos donde es posible instalar jardines. Si el pozo se instaló</i>					
3.1 El pozo a tierra cuenta con un jardín	1	2	3	4	
3.2 El jardín es de tamaño similar al del pozo a tierra	1	2	3	4	
3.3 El jardín tiene plantas ornamentales con especies como Croton sp, rosales, grass común u otros similares	1	2	3	4	
3.4 El jardín no cubre la tapa del pozo a tierra	1	2	3	4	
<b>4 No se han encontrado envases de sustancias químicas (pintura, thinner, aguarras, entre otros) alrededor del pozo a tierra</b>	1	2	3	4	

F. MEDIDAS DE MITIGACIÓN - TELECENTROS					
MEDIDAS DE MITIGACIÓN	1 = Cumple con la medida	2 = No cumple con la medida	3 = No es posible determinar el	4 = No aplica la medida	Comentario
<b>5 Implementación y práctica de actividades de eficiencia energética y eficiencia en el uso del agua.</b>					
5.1 Las luminarias (focos, fluorescentes, diroicos, otros) están encendidos solo si es necesario (es de noche, hay oscuridad, no hay ventanas) <i>La medida es aplicable solo si se tiene acceso a las luminarias en todas las condiciones de luz.</i>	1	2	3	4	
5.2 En el Telecentro se han instalado focos ahorradores o fluorescentes compactos.	1	2	3	4	
5.3 El o los proyectores que no están siendo utilizados, están apagados	1	2	3	4	
5.4 Al cerrar el telecentro (almuerzo o al final del día), se apagan los equipos (computadoras, impresoras y fotocopiadora) y las luces	1	2	3	4	
5.5 Al cerrar el telecentro (almuerzo o al final del día), se apaga la fuente de energía eléctrica del telecentro	1	2	3	4	
5.6 El aire acondicionado se utiliza con las puertas y ventanas cerradas <i>Solo aplica en caso de existir aire acondicionado.</i>	1	2	3	4	
5.7 Los caños están cerrados y los sanitarios no dejan pasar agua.	1	2	3	4	
5.8 Los caños y sanitarios funcionan bien (no existe pérdida de agua). <i>La pérdida de agua no está referida a que el caño está abierto, sino que existe en</i>	1	2	3	4	
5.9 Existe algún sistema de clasificación de residuos sólidos. <i>Existen tachos para el desecho de los diversos tipos de residuos sólidos. Residuos orgánicos en tacho de color marrón. Residuos generales (vidrio, papel, cartón, plástico) en tacho de color negro. Residuos peligrosos (baterías, pilas, CDS, entre otros) en tacho de color rojo</i>	1	2	3	4	
5.10 Las personas desechan los residuos sólidos según el sistema de clasificación que existe	1	2	3	4	
5.11 El personal y usuarios del telecentro tienen un espacio para colocar papel usado para su reutilización.	1	2	3	4	



N° DE FICHA

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**REVISIÓN DEL CUMPLIMIENTO AMBIENTAL (ECR) - 2019  
PROYECTO ALIANZA CR3CE**

**A. DATOS DE LA TORRE DE ELEVACIÓN**

1. NOMBRE DE LA TORRE			
2. TIPO DE TORRE	<input type="checkbox"/> Autosoportada <input type="checkbox"/> Atirantada		
3. ALTURA	_____ Metros		
4. FECHA DE ENTREGA A LA LOCALIDAD	<i>Día</i>	<i>Mes</i>	<i>Año</i>

**B. UBICACIÓN DE LA TORRE DE ELEVACIÓN**

5. GEORREFERENCIA			
LATITUD			
LONGITUD			
		<i>Código</i>	<i>Nombre</i>
6. REGION			
7. PROVINCIA			
8. DISTRITO			
9. CENTRO POBLADO			
10. DIRECCIÓN DE LA TORRE DE ELEVACIÓN			

**C. DATOS DEL TRABAJO DE CAMPO**

11. NOMBRE DEL OBSERVADOR			
12. FECHA DE APLICACIÓN	<i>Día</i>	<i>Mes</i>	<i>Año</i>
13. NOMBRE DEL SUPERVISOR			
14. NOMBRE DEL DIGITADOR			

D. MEDIDAS DE MITIGACIÓN - TORRES DE ELEVACIÓN Y ANTENAS						
	MEDIDAS DE MITIGACIÓN	1 = Cumple con la medida	2 = No cumple con la medida	3 = No es posible determinar el cumplimiento	4 = No aplica la medida	Comentario
<b>1</b>	<b>Sobre nuevas implementaciones o traslados de torres de elevación para antenas repetidoras:</b>					
1.1	La instalación de la torre no se realiza en una zonas de amortiguamiento, áreas protegidas o ecosistemas ribereño	1	2	3	4	
1.2	La instalación de la torre se realiza en una zona anteriormente intervenida (es decir que no sea zona virgen)  <i>Zona intervenida se refiere a que no sea una zona virgen, es decir que se hayan realizado actividades agrícolas por ejemplo o sea una zona urbana.</i>	1	2	3	4	
<b>2</b>	La torre de elevación y antena repetidora no se encuentran en una zona talada o podada indiscriminadamente para su colocación  <i>La medida está referida a una poda o tala indiscriminada. El no cumplimiento de esta medida solo se considera si es que la tala o poda ha sido realizada para la instalación de la torre o para permitir la "línea de vista" de la antena. Observar si debajo de la torre (triángulo formado por los cables) existe evidencia de tala indiscriminada</i>	1	2	3	4	
<b>3</b>	Sobre la cobertura de suelos alrededor de las torres de elevación:  <i>Esta medida es aplicable solo para zonas rurales</i>					
3.1	Alrededor de la torre de elevación y antena repetidora se ha cubierto con plantas  <i>El perímetro debe ser de 9m2 en promedio.</i>	1	2	3	4	
3.2	Alrededor de la torre de elevación y antena repetidora no se ha utilizado enredaderas ni árboles que crezcan tan alto que puedan tapar la antena.	1	2	3	4	
<b>4</b>	<b>Sobre la señalización de las torres de elevación</b>					
4.1	Las torres de elevación están pintadas.	1	2	3	4	
4.2	Las torres de elevación cuenta con luz de balizaje.  <i>Anotar la altura de la torre y en caso que no se encuentre hacer una estimación</i>	1	2	3	4	
<b>5</b>	<b>Sobre la información de medidas de seguridad</b>  <i>Esta medida es aplicable solo para torres de elevación y antenas implementadas en viviendas o espacios públicos.</i>					
5.1	Las torres de elevación cuentan con un panel informativo	1	2	3	4	
5.2	Las torres de elevación cuentan con un cartel que diga "no arrojar basura"	1	2	3	4	
5.3	Las torres de elevación cuentan con un cartel que diga "riesgo eléctrico"	1	2	3	4	
5.4	Las torres de elevación cuentan con un cartel que diga "paso solo a personal autorizado" o "prohibido el paso"	1	2	3	4	
<b>6</b>	<b>Sobre la seguridad del personal en el mantenimiento y/o reforzamiento de torres de elevación y/o antenas:</b>  <i>El personal que participa en la implementación de la torre de elevación o en la instalación de la antena o en el mantenimiento, utiliza implementos de seguridad.</i>					
6.1	El personal que da mantenimiento y/o reforzamiento a la torres de elevación y/o antena utiliza arnés de seguridad  <i>El arnés solo lo debe utilizar si sube a la torre.</i>	1	2	3	4	
6.2	El personal que da mantenimiento y/o reforzamiento a la torres de elevación y/o antena utiliza casco  <i>El casco solo lo debe utilizar si sube a la torre.</i>	1	2	3	4	
6.3	El personal que da mantenimiento y/o reforzamiento a la torres de elevación y/o antena utiliza guantes  <i>Los guantes se utilizan para ajustar los sensores y para subir a la torre.</i>	1	2	3	4	
6.4	El personal que da mantenimiento y/o reforzamiento a la torres de elevación y/o antena utiliza mascarilla  <i>La mascarilla se utiliza para el pintado de la torre.</i>	1	2	3	4	
6.5	El personal que da mantenimiento y/o reforzamiento a la torres de elevación y/o antena utiliza lentes  <i>Los lentes se utilizan cuando se usa soplete.</i>	1	2	3	4	
6.6	El personal que da mantenimiento y/o reforzamiento a la torres de elevación y/o antena utiliza otro implemento:  _____	1	2	3	4	

E. MEDIDAS DE MITIGACIÓN - POZOS A TIERRA						
MEDIDAS DE MITIGACIÓN		1 = Cumple con la medida	2 = No cumple con la medida	3 = No es posible determinar el cumplimiento	4 = No aplica la medida	Comentario
9	<b>Los pozos a tierra se ubican:</b> <i>Solo algunas torres de elevación tienen pozos a tierra. Aplicar solo en esos casos.</i>					
9.1	A más de 50 metros de la ribera de los rios	1	2	3	4	
9.2	A más de 20 metros de las quebradas	1	2	3	4	
10	<b>Señalización del pozo a tierra:</b>					
10.1	Cuenta con un cartel que diga "Pozo a tierra" <i>El cartel por lo general es de color amarillo.</i>	1	2	3	4	
10.2	El cartel se encuentra en la dirección del pozo <i>El cartel debe estar en la ruta hacia el pozo a tierra y cerca a él. No existe una distancia reglamentaria.</i>	1	2	3	4	
10.3	Los pozos a tierra cuentan con señalización de los niveles de resistencia establecidos por las normas de electricidad	1	2	3	4	
11	<b>Sobre la instalación de jardines:</b> <i>Esta medida considerarla solo en los casos donde es posible instalar jardines. Si el pozo se instaló en zona de cemento por ejemplo, no será factible colocar un jardín encima .</i>					
11.1	El pozo a tierra cuenta con un jardín	1	2	3	4	
11.2	El jardín es de tamaño similar al del pozo a tierra	1	2	3	4	
11.3	El jardín tiene plantas ornamentales con especies como Crotón sp, rosales, grass común u otros similares	1	2	3	4	
11.4	El jardín no cubre la tapa del pozo a tierra	1	2	3	4	
12	<b>No se han encontrado envases de sustancias químicas (pintura, thinner, aguarrás, entre otros) alrededor del pozo a tierra</b>	1	2	3	4	

# COFFEE ALLIANCE FOR EXCELLENCE (CAFE)

N° DE FICHA				
<b>REVISIÓN DEL CUMPLIMIENTO AMBIENTAL (ECR) - 2019</b>				
<b>PROYECTO ALIANZA CAFÉ</b>				
<b>A. CONSENTIMIENTO</b>				
Buenos días/tardes, mi nombre es _____ y formo parte del equipo de investigación que está realizando una encuesta sobre el cumplimiento de las medidas de mitigación ambiental del Proyecto <b>ALIANZA CAFE</b> , implementado por <b>TECHNOSERVE</b> .				
Nos gustaría hacerle unas cuantas preguntas relacionadas a la aplicación de prácticas ambientales para la producción del café. Con su aporte se podrán identificar oportunidades de mejora que le servirán a los productores y al proyecto para incrementar su nivel de cumplimiento de las medidas ambientales. La encuesta durará 30 minutos aproximadamente.				
Sus respuestas a la encuesta serán confidenciales y su participación en ella es completamente voluntaria. Usted puede retirarse en cualquier momento. Su relación con el proyecto <b>ALIANZA CAFE</b> no se verá afectada por su decisión de participar o no en la encuesta.				
Si tuviese preguntas o inquietudes sobre esta investigación, contactar a: Inés Ardiles Guerrero, 996392562.				
<b>¿Acepta participar en la encuesta?</b>				
ENCUESTADO(A) ACEPTA LA ENCUESTA	1	Iniciar la encuesta		
ENCUESTADO(A) RECHAZA LA ENCUESTA	2	Preguntar la razón y culminar la encuesta.		
¿Por qué razón no desea continuar con la encuesta?				
<b>Fin de la encuesta</b>				
<div style="border-top: 1px solid black; width: 100%;"></div> <b>FIRMA O HUELLA DIGITAL DEL PRODUCTOR</b>				
<b>B. UBICACIÓN DE LA VIVIENDA</b>				
	<i>Código</i>	<i>Nombre</i>		
1. REGION				
2. PROVINCIA				
3. DISTRITO				
4. CENTRO POBLADO				
5. CASERIO				
<b>C. DATOS DEL TRABAJO DE CAMPO</b>				
1. NOMBRE DEL ENCUESTADOR				
2. FECHA DE ENCUESTA	<i>Día</i>	<i>Mes</i>	<i>Año</i>	
3. NOMBRE DEL SUPERVISOR				
4. NOMBRE DEL DIGITADOR				
<b>D. DATOS DEL PARTICIPANTE</b>				
1. SEXO	1 <i>Hombre</i>	2 <i>Mujer</i>		
2. EDAD	¿Cuántos años cumplidos tiene?			
3. SUPERFICIE DE LA PARCELA			Hectáreas	
4. PENDIENTE DEL TERRENO				
5. TITULARIDAD DE LA PARCELA	1 Propietario	2 Arrendatario	3 Otro	
	Especificar otro:			
6. EDUCACIÓN	¿Cuál fue el último nivel de estudios que aprobó?			
	1 Sin nivel	2 Inicial	3 Primaria	4 Secundaria
			5 Técnica	6 Superior
7. FECHA DE INGRESO AL PROYECTO	<i>Día</i>	<i>Mes</i>	<i>Año</i>	

**E. PLAN DE MONITOREO Y MITIGACIÓN AMBIENTAL (PMMA)**

**USO Y MANEJO DE PESTICIDAS**

**1. De los siguientes temas, ¿Podría indicar en cuales recibió capacitación durante el último año por parte del proyecto?**  
*No leer las opciones. Marcar todas las opciones que el participante mencione espontáneamente para cada uno de los temas vinculados al uso y manejo de pesticidas.*

	1 = Si	2 = No	3 = No recuerda
1. Evaluación de las características de la plaga previo a la aplicación del plaguicida	1	2	3
2. Uso de pesticidas	1	2	3
3. Métodos alternativos para el control de plagas (Manejo Integrado de Plagas)	1	2	3
4. Riesgos en la salud y el ambiente por el uso de pesticidas	1	2	3
5. Uso de equipos de protección personal	1	2	3
6. Descarte adecuado de envases con residuos de pesticidas	1	2	3
7. Otro (Especificar):	1	2	3
8. NINGUNO	1	2	3

1 = Si. El encuestador pudo verificar lo declarado por el beneficiario.  
 2 = No. El encuestador pudo verificar que lo declarado por el beneficiario no es cierto.  
 3 = No pudo verificar. El encuestador no tuvo la oportunidad de verificar si lo declarado por el beneficiario es cierto o no.

**2. ¿Qué acciones realiza para el manejo de plagas?**

*Leer las opciones. Marcar todas las opciones que el*

	1 = Si	2 = No	2.1 ¿El encuestador verificó in situ lo mencionado por el beneficiario?			
			1 = Si	2 = No	3 = No pudo verificar	Comentarios
1. Asociación de cultivos (Labores culturales)	1	2	1	2	3	
2. Uso de barreras vivas (Labores culturales)	1	2	1	2	3	
3. Empleo de bauberia, trichoderma (control biológico)	1	2	1	2	3	
4. Empleo de trampas (Control etológico)	1	2	1	2	3	
5. Empleo de variedades resistentes (Método de control)	1	2	1	2	3	
6. Manejo de poda (Labores culturales)	1	2	1	2	3	
7. Manejo de sombra (Labores culturales)	1	2	1	2	3	
8. Remoción manual de malezas o de plagas (Control mecánico)	1	2	1	2	3	
9. Otra (Especificar):	1	2	1	2	3	
10. NINGUNA	1	2	1	2	3	

Passar a Pgta. 2.2

*De responder "Ninguna", pasar a la Pgta. 2.2, de lo contrario pasar a la Pgta. 3.*

**2.2. ¿Por qué no realiza ninguna acción para el manejo de plagas?**

	1 = Si	2 = No
1. No tiene tiempo	1	2
2. No tiene dinero	1	2
3. No lo considera necesario	1	2
4. Otro (Especificar):	1	2

**3. Sobre el almacén de los pesticidas, ¿Podría indicarnos donde y cómo los almacena? No leer las opciones. Marcar**

	1 = Si	2 = No	3.1 ¿El encuestador verificó in situ lo mencionado por el beneficiario?			
			1 = Si	2 = No	3 = No pudo verificar	Comentarios
1. Los almacena en un ambiente con ventilación (ventana, malla, espacio en la pared que permita la circulación de aire)	1	2	1	2	3	
2. Los almacena en repisas	1	2	1	2	3	
3. Los almacena en un ambiente seguro, con puerta y candado	1	2	1	2	3	
4. Los almacena fuera de su vivienda.	1	2	1	2	3	
5. Otra (Especificar):	1	2	1	2	3	
6. NINGUNA	1	2	1	2	3	

Passar a Pgta. 3.2

*De responder "Ninguna", pasar a la Pgta. 3.2, de lo contrario pasar a la Pgta. 4.*

**3.2 ¿Por qué no almacena los pesticidas en un lugar ventilado seguro en repisas o fuera de su vivienda?**

	1 = Si	2 = No
1. No tiene tiempo	1	2
2. No tiene dinero	1	2
3. No lo considera necesario	1	2
4. Otro (Especificar):	1	2

<b>4. ¿Podría mencionar las medidas de seguridad que ha tomado para evitar que niños y animales domésticos ingresen al espacio donde almacena los pesticidas?</b> <i>No leer las opciones. Marcar todas las opciones que el</i>	1 = Si	2 = No	4.1 ¿El encuestador verificó in situ lo mencionado por el beneficiario?			
			1 = Si	2 = No	3 = No pudo verificar	Comentarios
1. El espacio está cercado con mallas	1	2	1	2	3	
2. El espacio tiene puerta y está con candado o aldava, cadenas, alambres	1	2	1	2	3	
3. Está ubicado fuera del hogar en un área específica para esta actividad	1	2	1	2	3	
4. Otra (Especificar):	1	2	1	2	3	
5. No ha tomado ninguna medida.	1	2	1	2	3	
<i>Si responde que "No ha tomado ninguna medida", pasar a la pgta. 4.2. Si menciona alguna medida, pasar a la 5.</i>						

*Passar a pgta 4.2*

<b>4.2 ¿Por qué no ha tomado medidas de seguridad para evitar que niños o animales domésticos ingresen a los espacios donde almacena los pesticidas?</b>	1 = Si	2 = No
1. No tiene tiempo	1	2
2. No tiene dinero	1	2
3. No lo considera necesario	1	2
4. No lo considera riesgoso	1	2
5. Otro (Especificar):	1	2

<b>5. De los siguientes equipos de protección personal, ¿Cuáles utiliza cuando manipula productos químicos?</b>	1 = Si	2 = No	5.1 ¿El encuestador verificó in situ lo mencionado por el beneficiario?			
			1 = Si	2 = No	3 = No pudo verificar	Comentarios
1. Lentes para cubrir los ojos	1	2	1	2	3	
2. Plástico para cubrir la espalda, para que no tenga contacto directo con la mochila	1	2	1	2	3	
3. Botas (de jebe)	1	2	1	2	3	
4. Guantes (de plástico, no de tela)	1	2	1	2	3	
5. Trape limpio o mascarilla que cubra boca y nariz	1	2	1	2	3	
6. Otro (Especificar):	1	2	1	2	3	
7. NINGUNO	1	2	1	2	3	
<i>Si responde que "NINGUNO", pasar a la pgta. 5.2. Si menciona alguna medida, pasar a la 6.</i>						

*Passar a pgta 5.2*

<b>5.2 ¿Por qué no utiliza algún equipo de seguridad?</b>	1 = Si	2 = No
1. No tiene tiempo	1	2
2. No tiene dinero	1	2
3. No lo considera necesario	1	2
4. No lo considera riesgoso	1	2
5. Otro (Especificar):	1	2

<b>6. ¿Dónde realiza la preparación de los pesticidas?</b> <i>No leer las opciones. Marcar las opciones que correspondan según</i>	1 = Si	2 = No	6.1 ¿El encuestador verificó in situ lo mencionado por el beneficiario?			
			1 = Si	2 = No	3 = No pudo verificar	Comentarios
1. En un ambiente con ventilación (con ventana, malla, espacio en la pared que permita la circulación de aire)	1	2	1	2	3	
2. En un lugar sin acceso de niños y animales	1	2	1	2	3	
3. Lejos de una fuente de agua (mínimo 20 mt)	1	2	1	2	3	
4. Fuera del hogar	1	2	1	2	3	
5. En el hogar	1	2	1	2	3	
6. Junto a una fuente de agua	1	2	1	2	3	
7. Otro (Especificar):	1	2	1	2	3	
8. NINGUNO	1	2	1	2	3	
<i>Si menciona las opciones 5 y 6, pasar a la pregunta 6.2, de lo contrario pasar a la pregunta 7.</i>						

*Passar a Pgta. 6.2*  
*Passar a Pgta. 6.2*

<b>6.2 ¿Por qué realiza la preparación del pesticida en el hogar o junto a una fuente de agua?</b>	1 = Si	2 = No
1. No lo considera riesgoso	1	2
2. Otro (Especificar):	1	2

7. ¿Puede decirme cómo y dónde realiza el lavado de equipos y materiales de fumigación? No leer las opciones.	1 = Si	2 = No	7.1 ¿El encuestador verificó in situ lo mencionado por el beneficiario?			Comentarios
			1 = Si	2 = No	3 = No pudo verificar	
1. Alejado de fuentes de agua	1	2	1	2	3	
2. Los equipos y materiales se lavan al menos 3 veces (triple lavado)	1	2	1	2	3	
3. Otro (Especificar):	1	2	1	2	3	
4. NINGUNA	1	2	1	2	3	

Passar a Pgta. 7.2

De responder "Ninguna", pasar a la Pgta. 7.2, de lo contrario pasar a la Pgta. 8.

7.2 ¿Por qué no realiza el lavado de equipos y materiales ... (mencionar aquellas que no nombró)	1 = Si	2 = No
1. No lo considera necesario	1	2
2. No lo considera riesgoso	1	2
3. Otro (Especificar):	1	2

#### FERTILIZACIÓN/ ABONAMIENTO

8. De los siguientes temas, ¿Podría indicar en cuales recibió capacitación durante el último año por parte del proyecto? No leer las opciones. Marcar todas las opciones que el participante mencione espontáneamente vinculadas a la preparación y uso de fertilizantes y abonos orgánicos.	1 = Si	2 = No	3 = No recuerda
1. Elaboración de Plan de Manejo de Fertilizantes o Plan de Abonamiento (2 a 3 abonamientos al año)	1	2	3
2. Uso de compostera y elaboración de compost	1	2	3
3. Preparación y uso de biofertilizantes (abonos orgánicos)	1	2	3
4. Siembra de leguminosas (guaba)	1	2	3
5. Otro (Especificar):	1	2	3
6. NINGUNO	1	2	3

9. ¿Tiene compostera?	1 = Si	2 = No	9.1 ¿El encuestador verificó in situ lo mencionado por el beneficiario?			Comentarios
			1 = Si	2 = No	3 = No pudo verificar	
Si responde que no, continuar en 9.2.	1	2	1	2	3	

Passar a Pgta. 9.3 Passar a Pgta. 9.2

9.2 ¿Por qué no tiene compostera?	1 = Si	2 = No
1. No lo considera necesario	1	2
2. No tiene tiempo	1	2
3. No tiene dinero	1	2
4. Otro (Especificar):	1	2

9.3 ¿Utiliza la compostera durante la cosecha?	1 = Si	2 = No	9.4 ¿El encuestador verificó in situ lo mencionado por el beneficiario?			Comentarios
			1 = Si	2 = No	3 = No pudo verificar	
	1	2	1	2	3	

Passar a Pgta. 10 Passar a Pgta. 9.5

9.5 ¿Por qué no utiliza la compostera durante la cosecha?	1 = Si	2 = No
1. No lo considera necesario	1	2
2. No tiene tiempo	1	2
3. No tiene dinero	1	2
3. Otro (Especificar):	1	2

10. ¿Qué tipos de fertilizantes/abonos orgánicos utiliza? No leer las opciones. Marcar todas las opciones que el	1 = Si	2 = No	10.1 ¿El encuestador verificó in situ lo mencionado por el beneficiario?			Comentarios
			1 = Si	2 = No	3 = No pudo verificar	
1. Fertilizantes orgánicos (compost y/o biofertilizantes)	1	2	1	2	3	
2. Compost hecho a base de pulpa de café	1	2	1	2	3	
3. Abonos biofertilizantes: estiércol, melasa, mucilago de cacao o aguas mieles de café, suero de leche, uso de leguminosas	1	2	1	2	3	
4. Capa sobre el suelo de residuos del cultivo de café y coberturas muertas (cualquier especie)	1	2	1	2	3	
5. Otros (Especificar):	1	2	1	2	3	
6. NO UTILIZA FERTILIZANTES/ABONOS ORGÁNICOS	1	2	1	2	3	

Passar a Pgta. 10.2

De responder "NO UTILIZA FERTILIZANTES/ABONOS ORGÁNICOS", pasar a la Pgta. 10.2, de lo contrario pasar a la Pgta. 11.

10.2 ¿Por qué no utiliza algún fertilizante/abono orgánico?	1 = Si	2 = No
1. No lo considera necesario	1	2
2. No sabe como utilizarlos	1	2
3. No tiene tiempo	1	2
4. No tiene dinero	1	2
5. Otro (Especificar):	1	2

11. ¿Qué tipo de control de malezas utiliza?	1 = Si	2 = No	11.1 ¿El encuestador verificó in situ lo mencionado por el beneficiario?			Comentarios
			1 = Si	2 = No	3 = No pudo verificar	
<i>No leer las opciones. Marcar todas las opciones que el</i>						
1. Control manual (cobertura viva o machete)	1	2	1	2	3	
2. Control mecánico (motoguadaña)	1	2	1	2	3	
3. Control químico (herbicida)	1	2	1	2	3	
4. NINGUNO	1	2	1	2	3	

Passar a la Pgta. 11.3  
Passar a la Pgta. 11.2

De responder "NINGUNO", pasar a la Pgta. 11.2, de lo contrario pasar a la Pgta. 12.  
De responder "Control químico", pasar a la Pgta. 11.3.

11.2 ¿Por qué no utiliza algún tipo de control de maleza?	1 = Si	2 = No
1. No lo considera necesario	1	2
2. No sabe como utilizarlos	1	2
3. No tiene tiempo	1	2
4. No tiene dinero	1	2
5. Otro (Especificar):	1	2

Passar a Pgta. 12

11.3 ¿Por qué utiliza control químico para el control de la maleza?	1 = Si	2 = No
1. Siempre lo ha utilizado	1	2
2. No conoce otro	1	2
3. Otro (Especificar):	1	2

### REFORESTACIÓN/ CONTROL DE EROSIÓN

12. De los siguientes temas, ¿Podría indicar en cuales recibió capacitación durante el último año por parte del proyecto? No leer las opciones. Marcar todas las opciones que el participante mencione espontáneamente para cada uno de los temas vinculados con la conservación de suelos.	1 = Si	2 = No	3 = No recuerda
1. Barreras de contención vivas o muertas	1	2	3
2. Cultivos en curvas de nivel / filas en contra de la pendiente	1	2	3
3. Zanjias de infiltración/ drenes	1	2	3
4. Manejo de árboles de sombra	1	2	3
5. Siembra de arbustos en las orillas de arroyos	1	2	3
6. Siembra de árboles forestales (tornillo, moena, laurel cafetero, shaina)	1	2	3
7. Otro (Especificar):	1	2	3
6. NINGUNO	1	2	3

Passar a Pgta. 13

12.1 ¿Alguna de estas capacitaciones se desarrolló en una parcela demostrativa? Marcar una respuesta para cada uno de las opciones marcadas en la pregunta anterior.	
1 = Si	2 = No
1	2
1	2
1	2
1	2
1	2
1	2
1	2
1	2

Si la pendiente del terreno es pronunciada (mayor de 30%) realizar la pregunta 13, de lo contrario continuar con la 14.

13. ¿Qué tipo de barreras (vivas o muertas) ha instalado en su parcela? No leer las opciones. Marcar todas las opciones que el participante mencione espontáneamente.	1 = Si	2 = No	13.1 ¿El encuestador verificó in situ lo mencionado por el beneficiario?			Comentarios
			1 = Si	2 = No	3 = No pudo verificar	
1. Barrera vivas: erytrina, vetiveria, piña	1	2	1	2	3	
2. Barrera muertas: hojarasca, seudotallos de plátano o troncos	1	2	1	2	3	
3. NINGUNA	1	2	1	2	3	

De responder "NINGUNA", pasar a la Pgta. 13.2, de lo contrario pasar a la Pgta. 14

13.2 ¿Por qué no ha instalado barreras en su parcela?	1 = Si	2 = No
1. No lo considera necesario	1	2
2. No sabe como instalarlas	1	2
3. No tiene tiempo	1	2
4. No tiene dinero	1	2
5. Otro (Especificar):	1	2

14. ¿Ha instalado o ya cuenta con alguno de los siguientes árboles en su parcela? Leer las opciones. Marcar todas las	1 = Si	2 = No	14.1 ¿El encuestador verificó in situ lo mencionado por el beneficiario?			Comentarios
			1 = Si	2 = No	3 = No pudo verificar	
1. Laurel cafetero	1	2	1	2	3	
2. Moena	1	2	1	2	3	
3. Tornillo	1	2	1	2	3	
4. Otro (Especificar):	1	2	1	2	3	
5. NINGUNA	1	2	1	2	3	

Passar a Pgta. 14.2

De responder "NINGUNA", pasar a la Pgta. 14.2, de lo contrario pasar a la Pgta. 15

14.2 ¿Por qué no ha plantado alguno de los árboles mencionados?	1 = Si	2 = No
1. No quiere más especies maderables forestales en su parcela	1	2
2. Prefiere los árboles de sombra	1	2
3. Otro (Especificar):	1	2



**MANEJO DE RESIDUOS SÓLIDOS/ EFLUENTES**

**15. De los siguientes temas, ¿Podría indicar en cuales recibió capacitación durante el último año por parte del proyecto? No leer las opciones.**  
*Marcar todas las opciones que el participante mencione espontáneamente vinculados al manejo de residuos sólidos y efluentes.*

	1 = Si	2 = No	3 = No recuerda
1. Manejo de aguas mieles	1	2	3
2. Manejo de residuos orgánicos (pulpa de café)	1	2	3
3. Manejo de residuos inorgánicos peligrosos (envases de agroquímicos, etc.)	1	2	3
4. Manejo de residuos inorgánicos no peligrosos (envases de atún aceite, etc.)	1	2	3
5. Otro (Especificar):	1	2	3
6. NINGUNO	1	2	3

**16. ¿Dónde desecha los envases peligrosos (botellas, bolsas, latas) que contienen residuos agroquímicos? Leer las opciones. Marcar respuesta para cada una de las opciones que mencione el participante.**

	1 = Si	2 = No	3 = No aplica	16.1 ¿El encuestador verificó in situ lo mencionado por el beneficiario?			Comentarios
				1 = Si	2 = No	3 = No pudo verificar	
1. En contenedores o costales específicos para su uso	1	2	3	1	2	3	
2. Los entrega a la empresa Campo Limpio	1	2	3	1	2	3	
3. En cualquier contenedor	1	2	3	1	2	3	Pasar a Pgta. 16.2
4. En contenedores de reciclaje	1	2	3	1	2	3	Pasar a Pgta. 16.2
5. En fuentes de agua	1	2	3	1	2	3	Pasar a Pgta. 16.2
6. Los entierra	1	2	3	1	2	3	Pasar a Pgta. 16.2
7. Otro (Especificar):	1	2	3	1	2	3	

*De responder las opciones del 3 al 6, pasar a la Pgta. 16.2; de lo contrario, pasar a la Preg. 17.*

**16.2 ¿Por qué los desecha en ... (nombrar la opción mencionada por el participante)?**

	1 = Si	2 = No
1. Siempre lo ha hecho así	1	2
2. No lo considera riesgoso	1	2
3. Otro (Especificar):	1	2

**17. ¿Dónde dispone los residuos de despulpado? No leer las opciones. Marcar todas las opciones que el**

	1 = Si	2 = No	17.1 ¿El encuestador verificó in situ lo mencionado por el beneficiario?			Comentarios
			1 = Si	2 = No	3 = No pudo verificar	
1. Se reutilizan junto con otros residuos de cosecha para la elaboración de fertilizantes orgánicos	1	2	1	2	3	1 = Si. El encuestador pudo verificar. 2 = No. El encuestador pudo verificar pero no es cierto. 3 = No pudo verificar. El encuestador no lo declaró por el beneficiario.
2. Se acopia en recipientes para su posterior disposición final en zonas específicas para tal fin	1	2	1	2	3	
3. Otro (Especificar):	1	2	1	2	3	
4. NINGUNO	1	2	1	2	3	Pasar a Pgta. 17.2

*De responder "NINGUNO", pasar a la Pgta. 17.2, de lo contrario pasar a la Pgta. 18.*

**17.2 ¿Por qué no los reutiliza junto con otros residuos de cosecha para la elaboración de fertilizantes orgánicos o acopia en recipientes para su posterior disposición final en zonas específicas para tal fin?**

	1 = Si	2 = No
1. No tiene tiempo	1	2
2. No tiene dinero	1	2
3. No lo considera necesario o útil	1	2
4. Otro (Especificar):	1	2

**18. ¿Hacia dónde conduce las aguas mieles? Leer las opciones. Marcar todas las opciones que el**

	1 = Si	2 = No	18.1 ¿El encuestador verificó in situ lo mencionado por el beneficiario?			Comentarios
			1 = Si	2 = No	3 = No pudo verificar	
1. Hacia pozos de sedimentación por medio de canaletas	1	2	1	2	3	1 = Si. El encuestador pudo verificar. 2 = No. El encuestador pudo verificar pero no es cierto. 3 = No pudo verificar. El encuestador no lo declaró por el beneficiario.
2. En pozos de infiltración (vetivería)	1	2	1	2	3	
3. Hacia fuentes de agua	1	2	1	2	3	Pasar a Pgta. 18.2
4. Las desecha directamente al suelo	1	2	1	2	3	Pasar a Pgta. 18.2
5. Otro (Especificar):	1	2	1	2	3	

*De mencionar las opciones 4 o 5, pasar a la Pgta. 18.2, de lo contrario pasar a la Pgta. 19*

**18.2 ¿Por qué las desecha hacia fuentes de agua o directamente al suelo? (nombrar las opción que**

	1 = Si	2 = No
1. No tiene tiempo	1	2
2. No tiene dinero	1	2
3. No lo considera riesgoso	1	2
4. Otro (Especificar):	1	2

19. ¿Qué hace con los residuos orgánicos procedentes de su parcela y vivienda? <i>No leer las opciones. Marcar todas</i>	1 = Si	2 = No	19.1 ¿El encuestador verificó in situ lo mencionado por el beneficiario?			
			1 = Si	2 = No	3 = No pudo verificar	Comentarios
1. Los quema	1	2	1	2	3	
2. Los desecha (no los utiliza en la parcela)	1	2	1	2	3	
3. Los dispone entre las calles del café	1	2	1	2	3	
4. Lo composta	1	2	1	2	3	
5. Otro (Especificar):	1	2	1	2	3	

*De mencionar las opciones 1 o 2, pasar a la Pgta. 19.2, de lo contrario pasar a la Pgta. 20*

19.2 ¿Por qué los quema o desecha (no utiliza)? (nombrar las opciones que mencionó)	1 = Si	2 = No
1. Siempre lo ha hecho así	1	2
2. No le son útiles	1	2
3. Otro (Especificar):	1	2

*1 = Si. El encuestador pudo verificar. 2 = No. El encuestador pudo verificar pero no es cierto. 3 = No pudo verificar. El encuestador no tuvo la oportunidad de verificar si lo declarado por el beneficiario es cierto o no.*

20. ¿Qué hace con los residuos inorgánicos no peligrosos (no pesticidas, sino botellas de aceite, atún, etc.) procedentes de su parcela y vivienda? <i>No leer las opciones. Marcar todas las opciones que el beneficiario mencione</i>	1 = Si	2 = No	20.1 ¿El encuestador verificó in situ lo mencionado por el beneficiario?			
			1 = Si	2 = No	3 = No pudo verificar	Comentarios
1. Los quema	1	2	1	2	3	
2. Los desecha en cualquier parte de la vivienda o parcela	1	2	1	2	3	
3. Los conserva en costales y los enterra en microrrellenos	1	2	1	2	3	
4. Otro (Especificar):	1	2	1	2	3	

*De mencionar las opciones 1 o 2, pasar a la Pgta. 20.2, de lo contrario pasar a la Pgta. 21*

20.2 ¿Por qué los quema o desecha en cualquier lugar de la vivienda o parcela? (nombrar la opción que mencionó)	1 = Si	2 = No
1. Siempre lo ha hecho así	1	2
2. No le son útiles	1	2
3. No lo considera riesgoso	1	2
4. Otro (Especificar):	1	2

**CONSERVACIÓN DE FUENTES DE AGUA**

21. De los siguientes temas, ¿Podría indicar en cuales recibió capacitación durante el último año por parte del proyecto? <i>No leer las opciones. Marcar todas las opciones que el participante mencione espontáneamente para cada uno de los temas vinculados a la conservación de las fuentes de agua.</i>	1 = Si	2 = No	3 = No recuerda
2. Conservación de vegetación en las zonas a ambos lados de las fuentes de agua (quebradas a 5 mt. y ríos a 50 mt)	1	2	3
3. Contaminación de los cursos de agua por el manejo incorrecto de pesticidas	1	2	3
4. Otro (Especificar):	1	2	3
5. NINGUNO	1	2	3

*Si la cabecera de la fuente de agua se encuentra dentro de la parcela o está a 50mt o menos, realizar la pregunta 22, de lo contrario continuar con la 23.*

22. ¿Mantiene vegetación en las cabeceras de las fuentes naturales de agua? (ríos, arroyos, manantiales, quebradas, lagunas, etc.)?	1 = Si	2 = No	22.1 ¿El encuestador verificó in situ lo mencionado por el beneficiario?			
			1 = Si	2 = No	3 = No pudo verificar	Comentarios
	1	2	1	2	3	

*1 = Si. El encuestador pudo verificar lo declarado por el beneficiario. 2 = No. El encuestador pudo verificar que lo declarado por el beneficiario no es cierto. 3 = No pudo verificar. El encuestador no tuvo la oportunidad de verificar si lo declarado por el beneficiario es cierto o no.*

22.2 ¿Por qué no mantiene vegetación en las cabeceras de las fuentes de agua?	1 = Si	2 = No
1. Siempre lo ha hecho así	1	2
2. No le son útiles	1	2
3. No lo considera riesgoso	1	2
4. Otro (Especificar):	1	2

23. ¿Mantiene una zona libre de cualquier cultivo en por lo menos 5 mt (o 50mt en caso de los ríos) a cada lado de las fuentes naturales de agua? (ríos, arroyos, manantiales, quebradas, lagunas, etc.)?	1 = Si	2 = No	23.1 ¿El encuestador verificó in situ lo mencionado por el beneficiario?			
			1 = Si	2 = No	3 = No pudo verificar	Comentarios
	1	2	1	2	3	

*1 = Si. El encuestador pudo verificar lo declarado por el beneficiario. 2 = No. El encuestador pudo verificar que lo declarado por el beneficiario no es cierto. 3 = No pudo verificar. El encuestador no tuvo la oportunidad de verificar si lo declarado por el beneficiario es cierto o no.*

23.2 ¿Por qué no mantiene una zona libre de cualquier cultivo en por lo menos 5mt (o 50mt en caso de los ríos) a cada lado de las fuentes de agua?	1 = Si	2 = No
2. No lo considera importante	1	2
3. Otro (Especificar):	1	2

*Agradecer el tiempo brindado y la información proporcionada y culminar la encuesta.*

## PERU CACAO ALLIANCE - PHASE II

N° DE FICHA					
<b>REVISIÓN DEL CUMPLIMIENTO AMBIENTAL (ECR) - 2019</b> <b>PROYECTO ALIANZA CACAO</b>					
<b>A. CONSENTIMIENTO</b>					
<p>Buenos días/tardes, mi nombre es _____ y formo parte del equipo de investigación que está realizando una encuesta sobre el cumplimiento de las medidas de mitigación ambiental del Proyecto <b>ALIANZA CACAO</b>, implementado por PALLADIUM. Nos gustaría hacerle unas cuantas preguntas relacionadas a la aplicación de prácticas ambientales para la producción del cacao. Con su aporte se podrán identificar oportunidades de mejora que le servirán a los productores y al proyecto para incrementar su nivel de cumplimiento de las medidas ambientales. La encuesta durará 40 minutos aproximadamente. Sus respuestas a la encuesta serán confidenciales y su participación en ella es completamente voluntaria. Usted puede retirarse en cualquier momento. Su relación con el proyecto <b>ALIANZA CACAO</b> no se verá afectada por su decisión de participar o no en la encuesta. Si tuviese preguntas o inquietudes sobre esta investigación, contactar a: Inés Ardiles Guerrero, 996392562.</p> <p><b>¿Acepta participar en la encuesta?</b></p> <p>ENCUESTADO(A) ACEPTA LA ENCUESTA      <input type="checkbox"/> 1      Iniciar la encuesta</p> <p>ENCUESTADO(A) RECHAZA LA ENCUESTA      <input type="checkbox"/> 2      Preguntar la razón y culminar la encuesta.</p> <p>¿Por qué razón no desea continuar con la encuesta?</p>					
<b>Fin de la encuesta</b>					
_____ <b>FIRMA O HUELLA DIGITAL DEL PRODUCTOR</b>					
<b>B. UBICACIÓN DE LA VIVIENDA</b>					
	<i>Código</i>	<i>Nombre</i>			
1. REGION	<input type="text"/>	<input type="text"/>			
2. PROVINCIA	<input type="text"/>	<input type="text"/>			
3. DISTRITO	<input type="text"/>	<input type="text"/>			
4. CENTRO POBLADO	<input type="text"/>	<input type="text"/>			
5. CASERIO	<input type="text"/>	<input type="text"/>			
<b>C. DATOS DEL TRABAJO DE CAMPO</b>					
1. NOMBRE DEL ENCUESTADOR	<input type="text"/>				
2. FECHA DE ENCUESTA	<i>Día</i>	<i>Mes</i>	<i>Año</i>		
3. NOMBRE DEL SUPERVISOR	<input type="text"/>				
4. NOMBRE DEL DIGITADOR	<input type="text"/>				
<b>D. DATOS DEL PRODUCTOR</b>					
1. SEXO	<input type="checkbox"/> 1 <i>Hombre</i>	<input type="checkbox"/> 2 <i>Mujer</i>			
2. EDAD	¿Cuántos años cumplidos tiene?	<input type="text"/>			
3. SUPERFICIE DE LA PARCELA	<input type="text"/>	Hectáreas			
4. TITULARIDAD DE LA PARCELA	<input type="checkbox"/> 1 Propietario	<input type="checkbox"/> 2 Arrendatario	<input type="checkbox"/> 3 Otro		
	Especificar otro: <input type="text"/>				
5. EDUCACIÓN	¿Cuál fue el último nivel de estudios que aprobó?				
	<input type="checkbox"/> 1 Sin nivel	<input type="checkbox"/> 2 Inicial	<input type="checkbox"/> 3 Primaria	<input type="checkbox"/> 4 Secundaria	<input type="checkbox"/> 5 Técnica
6. FECHA DE INGRESO AL PROYECTO	<i>Día</i>	<i>Mes</i>	<i>Año</i>		

COSECHA / POSTCOSECHA Y ALMACENAJE

**MÓDULO DE BENEFICIO CENTRALIZADO Y MÓDULO DE BENEFICIO FAMILIAR**

1. ¿Pertenece a alguna asociación de productores de cacao?	1 = Si	2 = No	Comentarios			
	1	2				
	↓ Pasará a pgta. 3					

2. ¿Por qué no?

Continuar en pregunta 7

3. ¿Ha recibido capacitación entre octubre 2018 y setiembre 2019 para el funcionamiento y mantenimiento del módulo centralizado?	1 = Si	2 = No	3 = No recuerda	Comentarios		
	1	2	3			

4. ¿Su asociación tiene un módulo de beneficio centralizado?	1 = Si	2 = No	3 = No sabe	Comentarios		
	1	2	3			

↓  
Pasará a  
pgta. 6

↓  
Pasará a  
pgta. 7

5. ¿Por qué no tienen módulo de beneficio?

Continuar en pregunta 7

6. A continuación le haré algunas preguntas sobre el módulo centralizado. Leer las preguntas, pero no las opciones de respuesta.	1	2	3	4	5	6
6.1. ¿A qué distancia del curso de agua más cercano está ubicado el módulo centralizado? <i>Marcar una respuesta.</i>	A más de 50 metros	A menos de 50 metros	No sabe			
6.2. ¿En dónde coloca los cajones fermentadores? <i>Marcar una respuesta.</i>	En el suelo	Sobre un mueble	Otro (Especificar)	No tiene cajones		
6.3. ¿De qué material está cubierto el techo del módulo centralizado? <i>Más de una respuesta posible.</i>	Madera	Calamina de plástico transparente	Hojas de Palma	Zinc	Otro (Especificar)	No tiene techo
6.4. ¿Qué tipo de servicios higiénicos tiene el módulo centralizado?	Servicio higiénicos básicos	Letrinas	No tiene servicios higiénicos	No sabe		
6.5. ¿El módulo centralizado cuenta con al menos un contenedor de residuos sólidos?	Si	No	No sabe			
6.6. ¿El módulo centralizado tiene carteles de señalización? <i>Por ejemplo: "Área de secado"</i>	Si	No	No sabe			

7. ¿Su familia tiene un módulo de beneficio familiar?	1 = Si	2 = No
	1	2

↓  
Pasará a  
pgta. 9

8. ¿Por qué no?

Continuar en pregunta 10

9. A continuación le haré algunas preguntas sobre el módulo de beneficio familiar. Leer las preguntas, pero no las opciones de respuesta.	Si	No	No sabe	9.6 ¿El encuestador verificó in situ lo mencionado por el productor?			Comentarios
				1 = Si	2 = No	3 = No pudo verificar	
9.1 ¿A qué distancia de su vivienda está ubicado el módulo de beneficio familiar, está a más de 50 metros? Marcar una respuesta.	1	2	3	1	2	3	1 = Si. El encuestador pudo verificar declarado por el beneficiario. 2 = No. El encuestador pudo verificar declarado por el beneficiario cierto. 3 = No pudo verificar. El encuestador tuvo la oportunidad de verificar.
9.2. ¿A qué distancia del almacén de fertilizantes está ubicado el módulo de beneficio familiar, está a más de 50 metros? Marcar una respuesta.	1	2	3	1	2	3	
9.3. ¿A qué distancia de los animales y de los niños está ubicado el módulo de beneficio familiar, está a más de 50m metros? Marcar una respuesta.	1	2	3	1	2	3	
9.4. ¿A qué distancia del almacén de combustibles está ubicado el módulo de beneficio familiar, está a más de 50 metros? Marcar una respuesta.	1	2	3	1	2	3	
9.5. ¿El módulo de beneficio familiar está dentro de una estructura con techo?	1	2	3	1	2	3	
Si responde que "a menos de 50 metros" en alguna de las preguntas 9.1, 9.2, 9.3 o 9.4, pasar a pregunta 9.7							
Si responde que "no" en la pregunta 9.5, pasar a pregunta 9.8							
Comentarios							
9.7 ¿Por qué se encuentra tan cerca de ... (mencionar aquellas que nombró se encuentran a una distancia menor a 50 mts)?							
9.8 ¿Por qué el módulo no está dentro de una estructura con techo?							
10. ¿Dónde desecha los residuos de mucílago? No leer las opciones. Marcar todas las opciones que el productor mencione espontáneamente.	1 = Si	2 = No	10.1 ¿El encuestador verificó in situ lo mencionado por el productor?				
			1 = Si	2 = No	3 = No pudo verificar	Comentarios	
1. Por medio de canaletas hacia pozos sépticos	1	2	1	2	3	1 = Si. El encuestador pudo verificar declarado por el beneficiario. 2 = No. El encuestador pudo verificar que lo declarado por el beneficiario. 3 = No pudo verificar. El encuestador tuvo la oportunidad de verificar	
2. Por medio de canaletas hacia pozos de pretratamiento (estabilización de efluentes)	1	2	1	2	3		
3. Otro (Especificar):	1	2	1	2	3		
De responder Otra opción, pasar a la la Pgta. 10.2, de lo contrario pasar a la Pgta.11							
10.2 ¿Por qué los desecha en ....(colocar respuesta proporcionada)?							
11. ¿Ha recibido capacitación entre octubre 2018 y setiembre 2019 en manejo de poscosecha de cacao?	1 = Si		2 = No		3 = No recuerda		
	1		2		3		
11. ¿Utiliza para el secado del cacao?	1 = Si	2 = No	11.1 ¿El encuestador verificó in situ lo mencionado por el productor?				
			1 = Si	2 = No	3 = No pudo verificar	Comentarios	
1. Mantadas negras de polietileno	1	2	1	2	3	1 = Si. El encuestador pudo verificar declarado por el beneficiario. 2 = No. El encuestador pudo verificar que lo declarado por el beneficiario cierto. 3 = No pudo verificar. El encuestador tuvo la oportunidad de verificar	
2. Parihuelas	1	2	1	2	3		
3. Otro (Especificar):	1	2	1	2	3		
De responder que no utiliza "Mantadas de polietileno" pasar a la la Pgta. 11.2, de lo contrario pasar a la Pgta.12							
11.2 ¿Por qué no utiliza mantadas de polietileno y/o parihuelas?							

12. Sobre los centros de acopio ¿Qué medidas toma para asegurar un buen almacenamiento? No leer las opciones. Marcar todas las opciones que el productor mencione espontáneamente.	1 = Si	2 = No	12.1 ¿El encuestador verificó in situ lo mencionado por el productor?			
			1 = Si	2 = No	3 = No pudo verificar	Comentarios
1. Almacén con ventilación	1	2	1	2	3	
2. Almacén con protección contra las lluvias	1	2	1	2	3	
3. Uso de parihuelas para el apilado de los sacos	1	2	1	2	3	
4. Control de roedores	1	2	1	2	3	
5. Otro (Especificar):	1	2	1	2	3	
6. NINGUNA	1	2	1	2	3	

1 = Si. El encuestador pudo ver declarado por el beneficiario.  
2 = No. El encuestador pudo ver que lo declarado por el beneficiario.  
3 = No pudo verificar. El encues tuvo la oportunidad de verificar

De responder "NINGUNA", pasar a la Pgta. 12.2, de lo contrario pasar a la Pgta. 13

12.2 ¿Por qué no toma alguna medida para asegurar un buen almacenamiento en los centros de acopio?

13. ¿Qué materiales utiliza en la producción de plántones de cacao? No leer las opciones. Marcar todas las opciones que el productor mencione espontáneamente.	1 = Si	2 = No	13.1 ¿El encuestador verificó in situ lo mencionado por el productor?			
			1 = Si	2 = No	3 = No pudo verificar	Comentarios
1. Bolsas biodegradable (derivados de polímeros naturales)	1	2	1	2	3	
2. Materiales e insumos locales de fácil descomposición (hojas de palmera y madera rolliza)	1	2	1	2	3	
3. Otro (Especificar):	1	2	1	2	3	

1 = Si. El encuestador pudo ver declarado por el beneficiario.  
2 = No. El encuestador pudo ver que lo declarado por el beneficiario.  
3 = No pudo verificar. El encues tuvo la oportunidad de verificar

De indicar que no utiliza las opciones 1 y 2, pasar a la Pgta. 13.2, de lo contrario pasar a la Pgta. 14

13.2 ¿Por qué no utiliza .... (nombrar la opción no mencionada)?

#### USO Y MANEJO DE PESTICIDAS

14. De los siguientes temas, ¿Podría indicar en cuales recibió capacitación durante el último año por parte del proyecto? No leer las opciones. Marcar todas las opciones que el participante mencione espontáneamente para cada uno de los temas vinculados al uso y manejo	1 = Si	2 = No
1. Evaluación de las características de la plaga previo a la aplicación del pesticida	1	2
2. Uso de pesticidas	1	2
3. Métodos alternativos para el control de plagas (Manejo Integrado de Plagas)	1	2
4. Riesgos en la salud y el ambiente por el uso de pesticidas	1	2
5. Uso de equipos de protección personal	1	2
6. Descarte adecuado de envases con residuos de pesticidas	1	2
7. Lavado de equipos y materiales	1	2
8. Preparación de pesticidas	1	2
9. Almacenamiento de pesticidas	1	2
10. Otro (Especificar):	1	2
11. NINGUNO	1	

15. ¿Qué acciones realiza para el manejo de plagas? <i>No leer las opciones. Marcar todas las opciones que el productor mencione espontáneamente.</i>	1 = Si	2 = No	15.1 ¿El encuestador verificó in situ lo mencionado por el productor?				Comentarios
			1 = Si	2 = No	3 = No pudo verificar		
1. Control Cultural: drenes	1	2	1	2	3		
2. Control Cultural: nutrición integral y podas oportunas	1	2	1	2	3		
3. Control Cultural: eliminación de residuos de cosecha	1	2	1	2	3		
4. Control Cultural: control de malezas	1	2	1	2	3		
5. Control biológico: parásitos	1	2	1	2	3		
6. Control biológico: insectos predadores	1	2	1	2	3		
7. Control biológico: hongos bacterias, virus	1	2	1	2	3		
8. Control etológico: trampas	1	2	1	2	3		
9. Control genético	1	2	1	2	3		
10. Control físico: machete	1	2	1	2	3		
11. Control físico: motoguadaña	1	2	1	2	3		
12. Control físico: uso de altas temperaturas	1	2	1	2	3		
13. Control físico: solarización	1	2	1	2	3		
14. Control mecánico: recojo manual de insectos	1	2	1	2	3		
15. Control mecánico: recojo manual de las plantas dañadas o infestadas	1	2	1	2	3		
16. Control mecánico: exclusión de los insectos a través del embolsado de frutos, barreras de plástico en los bordes del campo	1	2	1	2	3		
17. Control químico: uso de pesticidas o plaguicidas	1	2	1	2	3		
18. Otra (Especificar):	1	2	1	2	3		
19. NINGUNA	1						

1 = Si. El encuestador pudo ver declarado por el beneficiario.  
2 = No. El encuestador pudo ver que lo declarado por el beneficiario.  
3 = No pudo verificar. El encuestador tuvo la oportunidad de verificar

*De responder que si a la opción 15.7, continuar en la pregunta 17, de lo contrario pasar a la 16*  
*De responder "Ninguna", pasar a la Pgta. 15.2*

15.2. ¿Por qué no realiza alguna acción para el manejo de plagas? <i>No leer las opciones. Marcar todas las respuestas que el productor mencione.</i>	1 = Si	2 = No
1. No tiene tiempo	1	2
2. No tiene dinero	1	2
3. No lo considera necesario	1	2
4. Otro (Especificar):	1	2

16. ¿Utiliza pesticidas?	1 = Si	2 = No	16.1 ¿El encuestador verificó in situ lo mencionado por el productor?				Comentarios
			1 = Si	2 = No	3 = No pudo verificar		
	1	2	1	2	3		
	↓						
	Pasar a pgta. 17		Pasar a pgta. 20				

1 = Si. El encuestador pudo ver declarado por el beneficiario.  
2 = No. El encuestador pudo ver que lo declarado por el beneficiario.  
3 = No pudo verificar. El encuestador tuvo la oportunidad de verificar

17. ¿Dónde obtiene los pesticidas? <i>No leer las opciones. Marcar todas las respuestas que el productor mencione.</i>	1 = Si	2 = No	Comentarios
1. Los compra	1	2	
2. Se los obsequian	1	2	
3. Otro (Especificar):	1	2	

18. ¿Podría indicarnos dónde y cómo almacena los pesticidas? <i>No leer las opciones. Marcar todas las opciones que el productor mencione espontáneamente.</i>	1 = Si	2 = No	18.1 ¿El encuestador verificó in situ lo mencionado por el productor?				Comentarios
			1 = Si	2 = No	3 = No pudo verificar		
1. Los almacena en un ambiente con ventilación (ventana, malla, espacio en la pared que permita la circulación de aire)	1	2	1	2	3		
2. Los almacena en repisas	1	2	1	2	3		
3. Los almacena en un ambiente seguro, con puerta y candado	1	2	1	2	3		
4. Los almacena fuera de su vivienda.	1	2	1	2	3		
5. Otra (Especificar):	1	2	1	2	3		
6. No tiene almacén	1	2	1	2	3		

1 = Si. El encuestador pudo ver declarado por el beneficiario.  
2 = No. El encuestador pudo ver que lo declarado por el beneficiario.  
3 = No pudo verificar. El encuestador tuvo la oportunidad de verificar

*De no mencionar las opciones 1, 2, 3 o 4, pasar a la Pgta. 18.2.*  
*Si no tiene almacén, pasar a la pgta 18.3*

<b>18.2 ¿Por qué no almacena los pesticidas en un lugar ventilado, seguro, en repisas o fuera de su vivienda?</b>							
Continuar en la pregunta 19							
<b>18.3. ¿Por qué no tiene un almacén para los pesticidas?</b>							
<b>18.4 ¿Dónde coloca los pesticidas?</b>							
<b>19. ¿Podría mencionar las medidas de seguridad que ha tomado para evitar que niños y animales domésticos ingresen al espacio donde almacena los pesticidas?</b> <i>No leer las opciones. Marcar todas las opciones que el participante mencione espontáneamente.</i>	<b>1 = Si</b>	<b>2 = No</b>	<b>19.1 ¿El encuestador verificó in situ lo mencionado por el productor?</b>				
			<b>1 = Si</b>	<b>2 = No</b>	<b>3 = No pudo verificar</b>	<b>Comentarios</b>	
	<b>1. El espacio está cercado con mallas</b>	1	2	1	2	3	
	<b>2. El espacio tiene puerta y está con candado o aldava, cadenas, alambres</b>	1	2	1	2	3	
	<b>3. Está ubicado fuera del hogar en un área específica para esta actividad</b>	1	2	1	2	3	
	<b>4. Otra (Especificar):</b>	1	2	1	2	3	
<b>5. No ha tomado ninguna medida.</b>	1	2	1	2	3		
Si responde que "No ha tomado ninguna medida", pasar a la pgt. 19.2. Si menciona alguna medida, pasar a la 20							
<b>19.2 ¿Por qué no ha tomado medidas de seguridad?</b>							
<b>20. ¿Podría indicarme qué equipos de protección personal utiliza cuando manipula productos químicos?</b> <i>No leer las opciones. Marcar las opciones que corresponda según la respuesta del productor.</i>	<b>1 = Si</b>	<b>2 = No</b>	<b>20.1 ¿El encuestador verificó in situ lo mencionado por el productor?</b>				
			<b>1 = Si</b>	<b>2 = No</b>	<b>3 = No pudo verificar</b>	<b>Comentarios</b>	
	<b>1. Lentes para cubrir los ojos</b>	1	2	1	2	3	
	<b>2. Plástico para cubrir la espalda, para que no tenga contacto directo con la mochila</b>	1	2	1	2	3	
	<b>3. Botas (de jebe)</b>	1	2	1	2	3	
	<b>4. Guantes (de plástico, no de tela)</b>	1	2	1	2	3	
	<b>5. Trapeo limpio o mascarilla que cubra boca y nariz</b>	1	2	1	2	3	
	<b>6. Otro (Especificar):</b>	1	2	1	2	3	
<b>7. NINGUNO</b>	1						
Si responde que "NINGUNO", pasar a la pgt. 20.2. Si menciona alguna medida, pasar a la 21							
<b>20.2 ¿Por qué no utiliza algún equipo de seguridad?</b> <i>No leer las opciones. Marcar las opciones que corresponda según la respuesta del productor.</i>	<b>1 = Si</b>	<b>2 = No</b>					
	<b>1. No tiene tiempo</b>	1	2				
	<b>2. No tiene dinero</b>	1	2				
	<b>3. No lo considera necesario</b>	1	2				
	<b>4. No lo considera riesgoso</b>	1	2				
	<b>5. Otro (Especificar):</b>	1	2				
<b>21. ¿Dónde realiza la preparación de los pesticidas?</b> <i>No leer las opciones. Marcar las opciones que corresponda según la respuesta del productor.</i>			<b>1 = Si</b>				
<b>1. En un ambiente con ventilación (con ventana, malla, espacio en la pared que permita la circulación de aire)</b>			1				
<b>2. En un lugar sin acceso de niños y animales</b>			1				
<b>3. Lejos de una fuente de agua (mínimo 20 mt)</b>			1				
<b>4. Fuera del hogar</b>			1				
<b>5. En el hogar</b>			1				
<b>6. Junto a una fuente de agua</b>			1				
<b>7. Otro (Especificar):</b>			1				
<b>8. NINGUNO</b>			1				
Si menciona alguna de las opciones del 1 al 4, pasar a la pgt. 22, de lo contrario pasar a la pregunta 21.1							
<b>21.1 ¿Por qué realiza la preparación del pesticida en el hogar o junto a una fuente de agua?</b> <i>No leer las opciones. Marcar las opciones que corresponda según la respuesta del productor.</i>			<b>1 = Si</b>	<b>2 = No</b>			
<b>1. No lo considera riesgoso</b>			1	2			
<b>2. Siempre lo ha hecho así</b>			1	2			
<b>3. Otro (Especificar):</b>			1	2			



<b>22. ¿Puede decirme cómo/dónde realiza el lavado de equipos y materiales de fumigación? No leer las opciones. Marcar todas las opciones que el participante mencione espontáneamente.</b>	<b>1 = Si</b>	<b>2 = No</b>
1. Alejado de fuentes de agua	1	2
2. Los equipos y materiales se lavan al menos 3 veces (triple lavado)	1	2
3. Otro (Especificar):	1	2
4. NINGUNA	1	2

Si menciona alguna de las opciones del 1 al 2, pasar a la pgta 23, de lo contrario pasar a la pregunta 22.1

<b>22.1 ¿Por qué no realiza el lavado de equipos y materiales ... (mencionar aquellas que no nombró) No leer las opciones. Marcar todas las opciones que el participante mencione espontáneamente.</b>	<b>1 = Si</b>	<b>2 = No</b>
1. No lo considera necesario	1	2
2. No lo considera riesgoso	1	2
3. Otro (Especificar):	1	2

<b>23. De los siguientes temas, ¿Podría indicar en cuales recibió capacitación durante el último año por parte del proyecto? No leer las opciones. Marcar todas las opciones que el participante mencione espontáneamente para cada uno de los temas vinculados al mantenimiento de equipos</b>	<b>1 = Si</b>	<b>2 = No</b>	<b>3 = No recuerda</b>
1. Frecuencia de revisiones requeridas de los equipos	1	2	3
2. Instrucciones de mantenimiento requerido por tipo de equipo	1	2	3
3. Costos de mantenimiento	1	2	3
4. Otro (Especificar):	1	2	3
5. NINGUNO	1		

<b>24. ¿Extiende mantas plásticas sobre el piso de los depósitos de combustible y lubricantes?</b>	<b>1 = Si</b>	<b>2 = No</b>	<b>24.1 ¿El encuestador verificó in situ lo mencionado por el productor?</b>			<b>Comentarios</b>
			<b>1 = Si</b>	<b>2 = No</b>	<b>3 = No pudo verificar</b>	
	1	2	1	2	3	
	<i>Pasar a Pgta. 25</i>		<i>Pasar a Pgta. 24.2</i>			

1 = Si. El encuestador pudo ver declarado por el beneficiario.  
2 = No. El encuestador pudo ver que lo declarado por el beneficiario.  
3 = No pudo verificar. El encues tuvo la oportunidad de verificar

**24.2 ¿Por qué no extiende mantas plásticas sobre el piso de los depósitos de combustible y lubricantes?**

**AMPLIACION DE PARCELAS**

<b>25. Para la ampliación de parcelas de cacao, ¿qué variedad de cacao usa? No leer las opciones. Marcar todas las opciones que el productor mencione espontáneamente.</b>	<b>1 = Si</b>	<b>2 = No</b>
1. Clones finos y de aroma	1	2
2. CCN51	1	2
3. Otro (Especificar):	1	2
4. NINGUNO	1	

De responder "Ninguno", pasar a la Pgta. 25.2, de lo contrario pasar a la Pgta. 26

<b>26. ¿Dónde obtiene el cacao para sus plantaciones? No leer las opciones. Marcar todas las opciones que el productor mencione espontáneamente.</b>	<b>1 = Si</b>	<b>2 = No</b>
1. Lo compra	1	2
2. De una parcela vecina	1	2
3. Alianza Cacao le entregó	1	2
4. Le regalaron (diferente a la Alianza Cacao)	1	2
5. Otro (Especificar):	1	2

<b>27. ¿Podría mencionar las características que cumple el cacao que a sido y que puede ser usado en su cultivo? No leer las opciones. Marcar todas las opciones que el productor mencione espontáneamente.</b>	<b>1 = Si</b>	<b>2 = No Mencionó</b>
1. No menciona ninguna medida	1	2
2. El cacao debe estar libre de plagas y enfermedades	1	2
3. El cacao debe provenir de parcelas identificadas y con garantía	1	2
4. Otra (Especificar):	1	2

FERTILIZANTES / ABONAMIENTO							
<b>28. De los siguientes temas, ¿Podría indicar en cuales recibió capacitación durante el último año por parte del proyecto? No leer las opciones. Marcar todas las opciones que el participante mencione espontáneamente para cada uno de los temas vinculados a la preparación y uso de fertilizantes y abonos orgánicos.</b>	<b>1 = Si</b>	<b>2 = No</b>	<b>3 = No recuerda</b>	<b>28.1 ¿La capacitación se realizó en parcela demostrativa?</b>			
				<b>1 = Si</b>	<b>2 = No</b>		
	1. Elaboración de Plan de Manejo de Fertilizantes o Plan de Abonamiento	1	2	3	1	2	
	<b>2. Compostaje</b>	1	2	3	1	2	
	3. Preparación y uso de fertilizantes / abonos orgánico	1	2	3	1	2	
	4. Siembra de leguminosas	1	2	3	1	2	
	5. Otro (Especificar):	1	2	3	1	2	
6. NINGUNO	1						
<b>29. ¿Qué hace con los desechos orgánicos? No leer las opciones. Marcar todas las opciones que el productor mencione espontáneamente.</b>			<b>1 = Si</b>	<b>2 = No</b>			
1. Los bota			1	2			
2. Los quema			1	2			
3. Hace compostaje			1	2			
4. Otro (Especificar):			1	2			
Si respondió que "hace compostaje", pasar a la pgta. 31, de lo contrario continuar en la 30							
<b>30. ¿Realiza compostaje?</b>	<b>1 = Si</b>	<b>2 = No</b>	<b>30.1 ¿El encuestador verificó in situ lo mencionado por el productor?</b>				
			<b>1 = Si</b>	<b>2 = No</b>	<b>3 = No pudo verificar</b>	<b>Comentarios</b>	
	1	2	1	2	3		
Pasar a Pgta. 31							
<b>30.2 ¿Por qué no realiza el compostaje?</b>	<b>1 = Si</b>	<b>2 = No</b>					
1. No lo considera necesario	1	2					
2. No tiene tiempo	1	2					
3. No tiene dinero	1	2					
4. Otro (Especificar):	1	2					
<b>31. ¿Qué tipos de fertilizantes/abonos orgánicos utiliza? No leer las opciones. Marcar todas las opciones que el productor mencione espontáneamente.</b>	<b>1 = Si</b>	<b>2 = No</b>	<b>31.1 ¿El encuestador verificó in situ lo mencionado por el productor?</b>				
			<b>1 = Si</b>	<b>2 = No</b>	<b>3 = No pudo verificar</b>	<b>Comentarios</b>	
	1. Fertilizantes orgánicos (compost y/o biofertilizantes)	1	2	1	2	3	
	2. Compost hecho a base de pulpa de cacao	1	2	1	2	3	
	3. Abonos biofertilizantes: estiércol, melasa, mucílago de cacao o aguas mieles de cacao, suero de leche, uso de leguminosas	1	2	1	2	3	
	4. Capa sobre el suelo de residuos del cultivo de cacao y coberturas muertas (cualquier especie)	1	2	1	2	3	
	5. Otros (Especificar):	1	2	1	2	3	
<b>6. NO UTILIZA FERTILIZANTES/ABONOS ORGÁNICOS</b>	1						
De responder "NO UTILIZA FERTILIZANTES/ABONOS ORGÁNICOS", pasar a la Pgta. 31.2, de lo contrario pasar a la Pgta. 32							
<b>31.2 ¿Por qué no utiliza algún fertilizante/abono orgánico? No leer las opciones. Marcar todas las opciones que el productor mencione espontáneamente.</b>	<b>1 = Si</b>	<b>2 = No</b>					
	1. No lo considera necesario	1					
	2. No sabe como utilizarlos	1					
	3. No tiene tiempo	1					
	4. No tiene dinero	1					
	5. Otro (Especificar):	1					
<b>32. ¿Cómo controla la maleza? No leer las opciones. Marcar todas las opciones que el productor mencione espontáneamente.</b>	<b>1 = Si</b>	<b>2 = No</b>	<b>32.1 ¿El encuestador verificó in situ lo mencionado por el productor?</b>				
			<b>1 = Si</b>	<b>2 = No</b>	<b>3 = No pudo verificar</b>	<b>Comentarios</b>	
	1. Control manual (cobertura viva o machete)	1	2	1	2	3	
	2. Control mecánico (motoguadaña)	1	2	1	2	3	
	3. Control cultural (mulch, sombra, cobertura)	1	2	1	2	3	
	4. Control químico (herbicida)	1	2	1	2	3	
5. NO UTILIZA	1	2	1	2	3		
De responder "NO UTILIZA", pasar a la Pgta. 32.2, de lo contrario pasar a la Pgta. 33							
De responder "Control químico", pasar a la Pgta. 32.3.							

<b>32.2 ¿Por qué no utiliza algún tipo de control de maleza? No leer las opciones. Marcar todas las opciones que el productor mencione espontáneamente.</b>	<b>1 = Si</b>	<b>2 = No</b>
1. No lo considera necesario	1	2
2. No sabe como utilizarlos	1	2
3. No tiene tiempo	1	2
4. No tiene dinero	1	2
5. Otro (Especificar):	1	2

Pasar a Pgta. 33

<b>32.3 ¿Por qué utiliza control químico para el control de la maleza? No leer las opciones. Marcar todas las opciones que el productor mencione espontáneamente.</b>	<b>1 = Si</b>	<b>2 = No</b>
1. Siempre lo ha utilizado	1	2
2. No conoce otro	1	2
3. Otro (Especificar):	1	2

<b>33. ¿Tiene un plan de abonamiento?</b>	<b>1 = Si</b>	<b>2 = No</b>
	1	2

Pasar a Pgta.

34

**33.1 ¿Por qué no?**

<b>34. Sobre la "Nutrición integral y podas oportunas NIPO" ¿Realiza alguna de las siguientes prácticas? Leer las opciones al productor: Marcar una respuesta por cada opción</b>	<b>1 = Si</b>	<b>2 = No</b>	<b>34.1 ¿El encuestador verificó in situ lo mencionado por el productor?</b>			
			<b>1 = Si</b>	<b>2 = No</b>	<b>3 = No pudo verificar</b>	<b>Comentarios</b>
1. Poda del cultivo considerando la edad de la planta	1	2	1	2	3	
2. Manejo y conservación de suelos	1	2	1	2	3	
3. Aplicación de materia orgánica al suelo	1	2	1	2	3	
4. NINGUNA	1	2	1	2	3	
5. Otros (Especificar):	1	2	1	2	3	

1 = Si. El encuestador pudo ver declarado por el beneficiario.  
2 = No. El encuestador pudo ver que lo declarado por el beneficiario.  
3 = No pudo verificar. El encuestador tuvo la oportunidad de verificar

De responder "NINGUNA", pasar a la Pgta. 34.2, de lo contrario pasar a la Pgta. 35

**34.2 ¿Por qué no utiliza algún tipo de abonamiento?**

<b>35. ¿Qué técnica de riego localizado ha adoptado? No leer las opciones. Marcar todas las opciones que el productor mencione espontáneamente.</b>	<b>1 = Si</b>	<b>2 = No</b>	<b>35.1 ¿El encuestador verificó in situ lo mencionado por el productor?</b>			
			<b>1 = Si</b>	<b>2 = No</b>	<b>3 = No pudo verificar</b>	<b>Comentarios</b>
1. Goteo	1	2	1	2	3	
2. Microaspersión	1	2	1	2	3	
3. Micromanguera	1	2	1	2	3	
4. Otro (Especificar):	1	2	1	2	3	
5. NINGUNA	1	2	1	2	3	

1 = Si. El encuestador pudo ver declarado por el beneficiario.  
2 = No. El encuestador pudo ver que lo declarado por el beneficiario.  
3 = No pudo verificar. El encuestador tuvo la oportunidad de verificar

De responder "NINGUNA", pasar a la Pgta. 35.2, de lo contrario pasar a la Pgta. 36

**35.2 ¿Por qué no utiliza alguna técnicas de riego localizado?**

<b>36. De los siguientes temas, ¿Podría indicar en cuales recibió capacitación durante el último año por parte del proyecto? No leer las opciones. Marcar todas las opciones que el participante mencione espontáneamente para cada uno de los temas vinculados a la operatividad y mantenimiento del sistema</b>	<b>1 = Si</b>	<b>2 = No</b>	<b>3 = No recuerda</b>
1. Limpieza del sistema de fertirriego	1	2	3
2. Registro de mantenimiento periódico del sistema	1	2	3
3. Mantenimiento continuo de motobombas	1	2	3
4. Instalación de pozos y sus respectivas tapas, evitando ser foco infeccioso	1	2	3
5. Reforestación en áreas de captación de agua para el sistema de fertirriego	1	2	3
6. Otro (Especificar):	1	2	3
7. NINGUNO	1	2	3

<b>37. ¿Cuenta con un sistema de fertirriego instalado en su parcela?</b>	<b>1 = Si</b>	<b>2 = No</b>	<b>37.1 ¿El encuestador verificó in situ lo mencionado por el productor?</b>			
			<b>1 = Si</b>	<b>2 = No</b>	<b>3 = No pudo verificar</b>	<b>Comentarios</b>
	1	2	1	2	3	

1 = Si. El encuestador pudo ver declarado por el beneficiario.  
2 = No. El encuestador pudo ver que lo declarado por el beneficiario.  
3 = No pudo verificar. El encuestador tuvo la oportunidad de verificar

<i> Pasar a Pgta. 38</i>						
37.2 ¿Por qué no cuenta con un sistema de fertilización?						
<b>REFORESTACIÓN / CONTROL DE EROSIÓN</b>						
38. ¿Realiza excavaciones de profundidad (calicatas) para tomar muestras de suelo?	1 = Si	2 = No	38.1 ¿El encuestador verificó in situ lo mencionado por el productor?			
			1 = Si	2 = No	3 = No pudo verificar	Comentarios
	1	2	1	2	3	
<i> Pasar a Pgta. 39</i>						
38.2 ¿Por qué no?						
39. De los siguientes temas, ¿Podría indicar en cuales recibió capacitación durante el último año por parte del proyecto? No leer las opciones. Marcar todas las opciones que el participante mencione espontáneamente para cada uno de los temas vinculado a la conservación de suelos .	1 = Si	2 = No	3 = No recuerda	39.1 ¿Se desarrolló en una parcela demostrativa? Marcar una respuesta para cada una de las opciones marcadas en la pregunta		
				1 = Si	2 = No	
1. Barreras de contención vivas o muertas	1	2	3	1	2	
2. Cultivos en curvas de nivel	1	2	3	1	2	
<b>3. Zanjias de infiltración</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>2</b>	
<b>4. Drenes</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>2</b>	
5. Manejo de árboles de sombra	1	2	3	1	2	
6. Siembra de arbustos en las orillas de arroyos	1	2	3	1	2	
7. Otro (Especificar):	1	2	3	1	2	
<b>8. NINGUNO</b>	1					
<i> Si ninguno, pasar a la pregunta 38</i>						
40. ¿Ha instalado en su parcela alguna de las siguientes especies?	1 = Si	2 = No				
	1	2				
1. Canavalia	1	2				
2. Kudzu	1	2				
3. Centrosema	1	2				
4. Otra (Especificar):	1	2				
40.1 ¿Por qué?						
<b>Observar el terreno. Si la pendiente de la parcela es mayor a 20%, continuar en la pregunta 41, de lo contrario pasar a la pregunta 42</b>						
41. ¿Cuenta con zanjias de infiltración en su parcela?	1 = Si	2 = No				
	1	2				
<i> Pasar a Pgta. 42</i>						
41.1 ¿Por qué no?						
42. ¿Qué tipo de barreras (vivas o muertas) ha instalado en su parcela? No leer las opciones. Marcar todas las opciones que el productor mencione espontáneamente.	1 = Si	2 = No	42.1 ¿El encuestador verificó in situ lo mencionado por el productor?			
			1 = Si	2 = No	3 = No pudo verificar	Comentarios
1. Barrera vivas: grama o vetiveria, eritrina, palo vivo, cerco vivo, amasisa, guaba, paca, shimbillo	1	2	1	2	3	1 = Si. El encuestador pudo ver declarado por el beneficiario. 2 = No. El encuestador pudo ver que lo declarado por el beneficiario. 3 = No pudo verificar. El encuestador tuvo la oportunidad de verificar
2. Barrera muertas: residuos de maleza, restos de ramas de la poda, troncos de descomposición, pseudotallos de plátano y otros restos	1	2	1	2	3	
3. NO TIENE BARRERAS	1					
<i> De responder "NO TIENE BARRERAS", pasar a la Pgta. 42.2, de lo contrario pasar a la Pgta. 43</i>						

<b>42.2 ¿Por qué no ha instalado barreras en su parcela? No leer las opciones. Marcar todas las opciones que el productor mencione espontáneamente.</b>	<b>1 = Si</b>	<b>2 = No</b>
1. No lo considera necesario	1	2
2. No sabe como instalarlas	1	2
3. No tiene tiempo	1	2
4. No tiene dinero	1	2
5. Otro (Especificar):	1	2

<b>43. ¿El suelo de su parcela es profundo?</b>	<b>1 = Si</b>	<b>2 = No</b>
	1	2

Pasar a  
Pgta. 45

<b>44. ¿Cuenta con drenes para evacuar el exceso de agua?</b>	<b>1 = Si</b>	<b>2 = No</b>
	1	2

Pasar a  
Pgta. 45

44.1 ¿Por qué no?

<b>45. ¿Ha usado alguna de las siguientes especies para la reforestación? Leer las opciones. Marcar todas las opciones que el productor mencione.</b>	<b>1 = Si</b>	<b>2 = No</b>
1. Bolaina	1	2
2. Capirona	1	2
3. Shaina	1	2
4. Guaba	1	2
5. Otro (Especificar):	1	2

De responder "Otro" pasar a la Pgta. 47.2, de lo contrario pasar a la Pgta. 48

45.1 ¿Por qué no ha utilizado alguna de las especies nombradas?

#### MANEJO DE RESIDUOS SÓLIDOS Y EFLUENTES

<b>46. De los siguientes temas, ¿Podría indicar en cuales recibió capacitación durante el último año por parte del proyecto? No leer las opciones. Marcar todas las opciones que el participante mencione espontáneamente para cada uno de los temas vinculados al manejo de residuos sólidos y efluentes.</b>	<b>1 = Si</b>	<b>2 = No</b>	<b>3 = No recuerda</b>
1. Manejo de aguas mieles	1	2	3
2. Manejo de residuos orgánicos (pulpa de cacao)	1	2	3
3. Manejo de residuos inorgánicos peligrosos (envases de agroquímicos, etc.)	1	2	3
4. Manejo de residuos inorgánicos no peligrosos (envases de atún aceite, etc.)	1	2	3
5. Otro (Especificar):	1	2	3
6. NINGUNO		2	3

<b>47. ¿Dónde desecha los envases (botellas, bolsas, latas) que contienen residuos agroquímicos? Leer las opciones. Marcar las respuestas por cada una de las opciones que mencione el participante.</b>	<b>1 = Si</b>	<b>2 = No</b>	<b>47.1 ¿El encuestador verificó in situ lo mencionado por el productor?</b>			<b>Comentarios</b>
			<b>1 = Si</b>	<b>2 = No</b>	<b>3 = No pudo verificar</b>	
1. En contenedores o costales específicos para su uso	1	2	1	2	3	
2. Los entrega a la empresa Campo Limpio	1	2	1	2	3	
3. En cualquier contenedor	1	2	1	2	3	
4. En contenedores de reciclaje	1	2	1	2	3	
5. En fuentes de agua	1	2	1	2	3	
6. Los entierra	1	2	1	2	3	
7. Otro (Especificar):	1	2	1	2	3	

De responder las opciones 1 y/o 2, pasar a la Pgta. 50, de lo contrario pasar a la Pgta. 49.2

<b>47.2 ¿Por qué los desecha en ... (nombrar la opción mencionada por el participante)?</b>	<b>1 = Si</b>	<b>2 = No</b>
1. Siempre lo ha hecho así	1	2
2. No lo considera riesgoso	1	2
3. Otro (Especificar):	1	2

1 = Si. El encuestador pudo ver declarado por el beneficiario.  
2 = No. El encuestador pudo ver que lo declarado por el beneficiario.  
3 = No pudo verificar. El encues tuvo la oportunidad de verificar

48. ¿Adónde conduce las aguas mieles? <i>Leer las opciones. Marcar todas las opciones que el participante mencione.</i>	1 = Si	2 = No	48.1 ¿El encuestador verificó in situ lo mencionado por el productor?			
			1 = Si	2 = No	3 = No pudo verificar	Comentarios
1. Hacia pozos de sedimentación por medio de canaletas	1	2	1	2	3	
2. En pozos de infiltración (vetiveria)	1	2	1	2	3	
3. A fuentes de agua	1	2	1	2	3	
4. Las desecha directamente al suelo	1	2	1	2	3	
5. Otro (Especificar):	1	2	1	2	3	

*De mencionar las opciones 3 ó 4, pasar a la Pgta. 48.2, de lo contrario pasar a la Pgta.49*

48.2 ¿Por qué los desecha en fuentes de agua o directamente al suelo? (nombrar las opciones que mencionó)	1 = Si	2 = No
1. No tiene tiempo para hacerlo de otra forma	1	2
2. No tiene dinero	1	2
3. No lo considera riesgoso	1	2
4. Otro (Especificar):	1	2

### CONSERVACIÓN DE FUENTES DE AGUA

49. De los siguientes temas, ¿Podría indicar en cuales recibió capacitación durante el último año por parte del proyecto? No leer las opciones. Marcar todas las opciones que el participante mencione espontáneamente para cada uno de los temas vinculadas a la conservación de las fuentes de agua.	1 = Si	2 = No	3 = No recuerda
1. Conservación de vegetación en la cabecera de las fuentes de agua (ríos, arroyos, manantiales, quebradas, pozos, lagunas, etc.)	1	2	3
2. Conservación de vegetación en las zonas a ambos lados de las fuentes de agua (quebradas a 5 mt. y ríos a 50 mt)	1	2	3
3. Contaminación de los cursos de agua por el manejo incorrecto de pesticidas	1	2	3
4. Otro (Especificar):	1	2	3
5. NINGUNO	1	2	3

*Si la cabecera de la fuente de agua se encuentra dentro de la parcela o está a 50mts. O menos, realizar la pregunta 50, de lo contrario continuar con la pregunta 51*

50. ¿Mantiene vegetación en las cabeceras de las fuentes naturales de agua? (ríos, arroyos, manantiales, quebradas, lagunas, etc.)?	1 = Si	2 = No	50.1 ¿El encuestador verificó in situ lo mencionado por el productor?			
			1 = Si	2 = No	3 = No pudo verificar	Comentarios
	1	2	1	2	3	

*Pasar a Pgta. 51*

50.2 ¿Por qué no mantiene vegetación en las cabeceras de las fuentes naturales de agua?	1 = Si	2 = No
1. No lo considera necesario	1	2
2. No tiene tiempo	1	2
3. No tiene dinero	1	2
4. Otro (Especificar):	1	2

51. ¿Mantiene una zona libre de cualquier cultivo en por lo menos 5 mt (o 50mt en caso de los ríos) a cada lado de las fuentes naturales de agua? (ríos, arroyos, manantiales, quebradas, lagunas, etc.)? <i>La distancia a ríos debe ser de 50mt y el resto de fuentes a 5mt.</i>	1 = Si	2 = No	51.1 ¿El encuestador verificó in situ lo mencionado por el productor?			
			1 = Si	2 = No	3 = No pudo verificar	Comentarios
	1	2	1	2	3	

*Pasar a Pgta. 52*

51.2 ¿Por qué no mantiene una zona libre de cualquier cultivo en por lo menos 5mt (o 50mt en caso de los ríos) a cada lado de las fuentes naturales de agua?	1 = Si	2 = No
1. No lo considera necesario	1	2
2. No tiene tiempo	1	2
3. No tiene dinero	1	2
4. Otro (Especificar):	1	2

**PROSPECCIÓN Y SELECCIÓN DE TERRENOS**

52. De los siguientes temas, ¿Podría indicar en cuales recibió capacitación durante el último año por parte del proyecto? No leer las opciones. Marcar todas las opciones que el participante mencione espontáneamente para cada uno de los temas vinculados a la conservación de la biodiversidad.	1 = Si	2 = No	3 = No recuerda
1. Instalación del cultivo de cacao en terrenos ya intervenidos	1	2	3
2. Intervención en purmas mayores de 5 años	1	2	3
3. No intervenir en bosques primarios	1	2	3
4. No intervenir en bosques secundarios mayores de 5 años de edad	1	2	3
5. Otro (Especificar):	1	2	3
6. NINGUNO	1		

53. ¿Para la preparación del terreno e instalación del vivero de cacao, ha requerido tumar y quemar bosques (primarios o secundario) mayores a 5 años de edad?	1 = Si	2 = No	53.1 ¿El encuestador verificó in situ lo mencionado por el productor?			Comentarios
	1	2	1 = Si	2 = No	3 = No pudo verificar	
	1	2	1	2	3	

1 = Si. El encuestador pudo ver declarado por el beneficiario.  
 2 = No. El encuestador pudo ver que lo declarado por el beneficiario.  
 3 = No pudo verificar. El encues tuvo la oportunidad de verificar

Passar a Pgta  
54

53.2. ¿Por qué lo hizo?

54. ¿Qué medidas toma en consideración cuando planifica la siembra de cultivo de cacao? No leer las opciones. Marcar todas las opciones que el productor mencione espontáneamente.	1 = Si	2 = No
1. La zonificación de la zona	1	2
2. Que la zona no se encuentre en un área protegida, en zonas de amortiguamiento y conseciones forestales o sean bosques de producción permanente.	1	2
3. Otro (Especificar):	1	2
4. NINGUNA	1	

De responder "NINGUNA", pasar a la Pgta. 54.1, de lo contrario agradecer y culminar la encuesta.

54.1. ¿Por qué no considera ninguna medida?

Agradecer el tiempo brindado y la información proporcionada y culminar la encuesta.

# ANNEX G: CALCULATIONS USED TO ESTIMATE THE LEVEL OF COMPLIANCE WITH MEASURES

## ALLIANCE FOR DIGITAL AND FINANCIAL SERVICES (CR3CE ALLIANCE)

MEASURE NO.	MEASURE	DATA-COLLECTION INSTRUMENT QUESTION	RESULTS PER QUESTION AND/OR CATEGORY FOR THE CALCULATION	CALCULATION METHOD	LEVEL OF COMPLIANCE
<b>Lifting Tower &amp; Relay Masts</b>					
<b>Location</b>					<b>100.0%</b>
1	Regarding new deployments or relocations of lifting towers for relay masts, avoid laying them within protected areas or buffer zones. Instead, lay them within previously disturbed areas (i. e. secondary forests [pumas], grasslands, agricultural areas).	1.1 Tower is not installed within a buffer zone, protected area or riparian ecosystem.	100.0%	Average percentage of "Comply with the measure" answers to this question	<b>100.0%</b>
		1.2 Tower is installed within a previously disturbed area (i. e. a non-pristine zone)	100.0%		
2	When installing lifting towers, activities affecting trees, such as indiscriminate pruning or felling aiming at providing a line-of-sight (LOS) should be avoided.	2. Lifting tower and relay mast are not located within an indiscriminately felled/pruned zone to that end.	100.0%	Percentage of "Comply with the measure" answers	<b>100.0%</b>
<b>Reforestation</b>					<b>85.1%</b>
3	Reforest and allow natural regeneration of native species surrounding lifting towers for relay masts when located in rural zones. Planting Centrosema macrocarpum (SourceTrust, 2013), a shrub commonly named Centrosema, which works well as soil cover, is suggested.	3.1 The area surrounding the lifting towers and relay masts has been covered with plants.	82.6%	Average percentage of "Comply with the measure" answers to this question	<b>85.1%</b>
		3.2 Vines or trees that may grow tall enough to cover relay masts have not been planted in the area surrounding lifting towers and relay masts.	87.5%		
<b>Signposting</b>					<b>80.7%</b>
4	Lifting towers for relay masts will be properly signaled and have beacon lights when maximum permissible height is exceeded by buildings or other towers nearby.	4.2 Lifting towers have beacon lights.	90.5%	Average percentage of "Comply with the measure" answers to this question	<b>80.7%</b>
		5.1 Lifting towers have an information board.	43.3%		
		5.2 Lifting towers have a sign, saying "Do not litter."	83.3%		
		5.3 Lifting towers have a sign, saying "Electrical hazard"	86.7%		



MEASURE NO.	MEASURE	DATA-COLLECTION INSTRUMENT QUESTION	RESULTS PER QUESTION AND/OR CATEGORY FOR THE CALCULATION	CALCULATION METHOD	LEVEL OF COMPLIANCE
		5.4 Lifting towers have a sign, saying "Authorized personnel only" or "Do not enter."	96.8%		
<b>Maintenance</b>					<b>77.9%</b>
9	Check towers and relay mast to see if anti-corrosion paint is correct or chipped off, tension ropes are tight and locks should be replaced due to rusting.	7.1 Lifting tower and relay mast are painted with anti-corrosion paint and kept in good condition (not chipped off).	82.8%	Average percentage of "Comply with the measure" answers to this question	77.9%
		7.2 Lifting tower and relay mast tension ropes are tight.	73.1%		
<b>Solid Waste</b>					<b>75.3%</b>
10	Collect used paint containers and other used containers (e. g. thinner, turpentine, etc.) to avoid their reusage in environmental or human-health risk activities (such as water/food carriage or storage), as per Waste Management Plan.	8. Used paint containers and other containers (e. g. thinner, turpentine, etc.) have not been found in the area surrounding lifting towers and relay masts.	83.9%	Percentage of "Comply with the measure" answers	83.9%
15	Used chemical container collection, as per Waste Management Plan.	12. Chemical containers (paint, thinner, turpentine, etc.) have not been found in the area surrounding the ground well.	66.7%	Percentage of "Comply with the measure" answers	66.7%
<b>Ground Well</b>					<b>53.2%</b>
11	For new ground well deployments, installation should take place at least 50 m from riverbanks and 20 m from gorges.	9.1 Ground wells are located more than 50 m from riverbanks.	90.3%	Average percentage of "Comply with the measure" answers to this question	90.3%
		9.2 Ground wells are located more than 20 m from streams.	90.3%		
12	Ground wells should have danger signs placed as well as signs indicating the resistance levels as per standards (see Electrical National Code – Ministry of Energy and Mines' Peruvian Technical Standard No. 370.053.1999).	10.1 Ground wells have signs saying "Ground well."	77.4%	Average percentage of "Comply with the measure" answers to this question	51.6%
		10.2 The signs are facing the wells.	74.2%		
		10.3 Ground wells have signs indicating resistance levels established as per electricity standards.	3.3%		
13	Develop small gardens (similar in area to the ground well) in a place that favors its development. These gardens will include ornamental plant species such as Croton sp., roses, common grass or similar ones.	11.1 Ground wells have a garden.	16.7%	Average percentage of "Comply with the measure" answers to this question	17.8%
		11.2 The garden is similar in area to the ground well.	17.9%		
		11.3 Ornamental plants of species such as Croton sp., roses, common grass or similar ones are grown in the garden.	10.7%		
		11.4 The garden does not blanket the ground well cover.	25.9%		

MEASURE NO.	MEASURE	DATA-COLLECTION INSTRUMENT QUESTION	RESULTS PER QUESTION AND/OR CATEGORY FOR THE CALCULATION	CALCULATION METHOD	LEVEL OF COMPLIANCE
<b>Telecenters</b>					
<b>Ground Well</b>					<b>51.5%</b>
11	For new ground well deployments, installation should take place at least 50 m from riverbanks and 20 m from gorges.	1.1 Ground wells are located more than 50 m from riverbanks.	64.7%	Average percentage of "Comply with the measure" answers to this question	67.7%
		1.2 Ground wells are located more than 20 m from streams.	70.6%		
12	Ground wells should have danger signs placed as well as signs indicating the resistance levels as per standards (see Electrical National Code – Ministry of Energy and Mines' Peruvian Technical Standard No. 370.053.1999).	2.1 Ground wells have yellow signs saying "Ground well."	64.7%	Average percentage of "Comply with the measure" answers to this question	43.1%
		2.2 The sign is facing the ground well.	64.7%		
		2.3 Ground wells have signs indicating resistance levels established as per electricity standards.	0.0%		
13	Develop small gardens (similar in area to the ground well) in a place that favors its development. These gardens will include ornamental plant species such as Croton sp., roses, common grass or similar ones.	3.1 Ground wells have a garden.	28.5%	Average percentage of "Comply with the measure" answers to this question	28.5%
		3.2 The garden is similar in area to the ground well.	28.5%		
		3.3 The garden has ornamental plants of species such as Croton sp., roses, common grass or similar ones.	28.5%		
		3.4 The garden does not blanket the ground well cover.	28.5%		
15	Collect used chemical containers, as per Waste Management Plan.	4. Chemical containers (i. e. paint, thinner, turpentine, etc.) were not found around the ground well.	66.7%	Percentage of "Comply with the measure" answers	66.7%
<b>Solid Waste</b>					<b>64.7%</b>
16	Implement a solid waste (organic and inorganic waste) and dangerous electronic waste (cells, batteries, monitors, computer pieces, etc.) sorting and management system. See Waste Management Plan.	5.9 There is a solid waste sorting system.	88.20%	Average percentage of "Comply with the measure" answers to this question	64.7%
		5.10 People dispose solid waste according to the existing sorting system.	58.80%		
		5.11 Telecenter personnel and users have a space for used paper to be reused.	47.10%		

MEASURE NO.	MEASURE	DATA-COLLECTION INSTRUMENT QUESTION	RESULTS PER QUESTION AND/OR CATEGORY FOR THE CALCULATION	CALCULATION METHOD	LEVEL OF COMPLIANCE
<b>Energy Efficiency</b>					<b>73.8%</b>
20	Implement and execute energy and water use efficiency activities.	5.1 Lighting (lightbulbs, fluorescent lamps, dichroic light-fixtures) will be on when necessary only (at night, in dark environments, in windowless rooms)	88.2%	Average percentage of "Comply with the measure" answers to this question	<b>73.8%</b>
		5.2 Telecenters are furnished with energy-saving lightbulbs or compact fluorescent lamps.	62.5%		
		5.3 When not used, projector(s) should be off.	83.3%		
		5.4 When telecenters are closed (for lunch or at the end of the day), lights and equipment (computers, printers and photocopiers) should be turned off.	58.0%		
		5.5 When telecenters are closed (for lunch or at the end of the day), its power supply should be turned off.	58.0%		
		5.6 When running air-conditioning, doors and windows should be kept closed.	58.0%		
		5.7 Faucets are closed and toilets are not leaking.	91.6%		
		5.8 Faucets and toilets are working properly (there is no water leaking).	91.6%		

## COFFEE ALLIANCE FOR EXCELLENCE (CAFE)

MEASURE NO.	MEASURE	DATA-COLLECTION INSTRUMENT QUESTION	RESULTS PER QUESTION AND/OR CATEGORY FOR THE CALCULATION	CALCULATION METHOD	LEVEL OF COMPLIANCE
<b>Pesticide Usage</b>					<b>68.2%</b>
1	The CAFE Project will guarantee that assistance for pesticide procurement or use (including pesticide usage training or technical assistance) will be provided according to the Pesticide Evaluation Report and Safer Use Action Plan (PERSUAP) guidelines.	3.1. Pesticides are stored in well-ventilated environments (window, mesh, wall space that allows air circulation).	40.4%	People who answered "No" to every question.	<b>69.9%</b>
		3.2. Pesticides are stored in shelves.	28.9%		
		3.3 Pesticides are stored in safe environments with doors and locks.	43.9%		
		3.4. Pesticides are stored outside the house.	50.0%		
		3.5 Other	9.6%		
		3.6 None	30.1%		
2	The CAFE Project will guarantee that Fertilizer Management Plan provisions are incorporated into the fertilizer usage training.	8.1. Fertilizer Management Plan or Manuring Plan (2-3 manuring activities per year) are prepared.	57.0%	Percentage of "Yes" answers.	<b>57.0%</b>
3	Organic fertilizer preparation (solid and/or liquid), as well as inclusion of green fertilizers (manure, compost) to improve soil quality, will be a priority in farmers' training events.	8.2. Use of compost pen and compost preparation.	71.1%	Average of those who answered "Yes" to all of these questions.	<b>50.9%</b>
		8.3. Biofertilizers (organic manuring) are prepared and used.	56.3%		
		19.3. Fertilizers are placed between coffee lines.	32.5%		
		19.4. They are composted.	43.6%		
4	Apply the Integrated Pest Management principle.	2.1. Companion planting is used (cultural practices).	32.9%	People who answered "No" to every question.	<b>96.8%</b>
		2.2. Living barriers are used (cultural practices).	27.2%		
		2.3. Beauveria and Trichoderma are used (biological control).	13.9%		
		2.4. Traps are used (ethological control).	29.8%		
		2.5. Resistant varieties are used (control method).	13.3%		
		2.6. Pruning management (cultural practices).	73.4%		
		2.7. Shadow management (cultural practices).	62.0%		

MEASURE NO.	MEASURE	DATA-COLLECTION INSTRUMENT QUESTION	RESULTS PER QUESTION AND/OR CATEGORY FOR THE CALCULATION	CALCULATION METHOD	LEVEL OF COMPLIANCE
		2.8. Weeds and pests are hand-removed (mechanical control).	39.2%		
		2.9 Other	3.8%		
		2.10 None	3.1%		
5	Wearing personal protection equipment to apply pesticides is mandatory.	5.1. Goggles are used for eye-protection.	31.1%	People who answered “No” to every question.	<b>81.0%</b>
		5.2. Your back is covered with plastic to avoid direct contact with the backpack.	20.5%		
		5.3. Boots (rubber boots).	94.7%		
		5.4. Gloves (plastic gloves, not cloth gloves).	40.9%		
		5.5. Mouth and nose are covered with clean clothes or face masks.	59.9%		
		5.6 Other	0.8%		
		5.7 None	19.0%		
6	Management and final disposal of pesticide waste containers.	16.1. Dedicated containers and sacks are used.	35.3%	Percentage of “Yes” answers.	<b>35.5%</b>
7	Promote the use of cover species and mechanical resources to control weeds.	11.1. Hand control (living mulch or machete).	90.1%	Average of those who answered “Yes” to both questions.	<b>70.7%</b>
		11.2. Mechanical control (motorized brush cutter).	51.2%		
8	Train farmers in the correct pesticide and fertilizer application.	1.1 Pest characteristic assessment prior to pesticide application.	50.0%	Those who answered “No” to every question, which corresponds to those who answered “Yes” to any of the categories from 1.1 to 1.7.	<b>76.1%</b>
		1.2. Pesticides are used.	53.2%		
		1.3. Alternative pest control methods (Integrated Pest Management).	49.2%		
		1.4. Health and environment risks arising from pesticide use.	50.0%		
		1.5. Personal protection equipment is used.	58.1%		
		1.6. Waste pesticide containers are properly disposed.	46.8%		
		1.7 Other	1.6%		
		1.8 None	23.9%		
9	Encourage the construction of small coffee pulp waste collection sites.	15.2. Organic waste management (coffee pulp).	64.3%	Average of those who answered “Yes” when asked about organic waste management,	<b>77.8%</b>
		17.1 or 17.2 measure was spontaneously reported by the respondent.	91.3%		

MEASURE NO.	MEASURE	DATA-COLLECTION INSTRUMENT QUESTION	RESULTS PER QUESTION AND/OR CATEGORY FOR THE CALCULATION	CALCULATION METHOD	LEVEL OF COMPLIANCE
		17.1. Organic waste is reused together with other crop waste in the organic fertilizer preparation.	55.3%	and percentage of those who spontaneously stated having deployed any of the 17.1 or 17.2 measures.	
		17.2. It is collected in containers for its subsequent final disposal in dedicated zones.	50.0%		
10	Encourage the construction of small infiltration wells and channels to channel coffee waste water and, thus, prevent aquifer contamination.	18.1. Wastewater is channeled to sedimentation ponds through gutters.	28.8%	Answers given by those who spontaneously stated 18.1 or 18.2 measure.	<b>42.3%</b>
		18.2. Wastewater is channeled into infiltration wells (vetiver).	19.0%		
11	Encourage organic fertilizer preparation using coffee pulp.	8.1 Training: Fertilizer Management Plan or Manuring Plan preparation (2-3 manuring activities per year).	57.0%	Those who answered "No" to all of the question.	<b>78.5%</b>
		8.2 Training: Use of compost pen and compost preparation.	71.1%		
		8.3 Training: Biofertilizer preparation and use (organic manure).	56.3%		
		8.4 Training: Legume planting (ice-cream bean).	40.6%		
		8.5 Other	2.3%		
		8.6 None	78.5%		
12	Train field technicians and farmers in shade tree management.	12.4. Shade tree management.	68.4%	Percentage of those who answered "Yes."	<b>68.4%</b>
14	Encourage regular shade tree management and, if necessary, avoid cutting big branches; prefer cutting small pieces.	12.1 Living or dead containment barriers.	50.4%	Those who answered "No" to every question.	<b>79.8%</b>
		12.2 Contour farming / rows perpendicular to slopes.	29.3%		
		12.3. Drainage and infiltration ditches.	18.8%		
		12.4. Shade tree management.	68.4%		
		12.5. Stream banks are planted with bushes.	30.1%		
		12.6. Forest trees are planted (tornillo, mohena, Ecuador laurel tree, glandular nakedwood).	62.4%		
		12.7 Other	4.5%		
		12.8 None	18.4%		
15	Provide coffee waste water management training as well as pulp waste management training.	15.1. Honey water management.	74.6%	Those who answered "No" to every question.	<b>77.3%</b>
		15.2. Organic waste management (coffee pulp).	64.3%		

MEASURE NO.	MEASURE	DATA-COLLECTION INSTRUMENT QUESTION	RESULTS PER QUESTION AND/OR CATEGORY FOR THE CALCULATION	CALCULATION METHOD	LEVEL OF COMPLIANCE
		15.3. Dangerous inorganic waste management (agrochemical containers, etc.)	59.5%		
		15.4. Non-dangerous inorganic waste management (oil cans, tuna cans, etc.)	61.9%		
		15.5 Other	1.6%		
		15.6 None	22.7%		
16	Encourage organic fertilizer preparation (composting) using coffee pulp.	10.1. Organic fertilizers (compost and/or biofertilizers)	59.3%	Percentage of those who answered "No" to "Not used."	<b>80.4%</b>
		10.2. Coffee-pulp-based compost	53.6%		
		10.3. Biofertilizing manure: dung, molasses, cocoa mucilage or coffee honey-water, whey, legumes	40.0%		
		10.4. Soil cover consisting of coffee crop waste and dead mulch (any species).	35.7%		
		10.5 Other	9.3%		
		10.6 Not used	13.6%		
17	Carry out intensive farmer training in different soil conservation methods. Consider installing slow-forming terraces, contour lines, living or dead barriers to retain pollutants. Conservation measures should be based on the slope angle.	13.1. Living barriers: Erythrina, vetiver, pineapple.	66.7%	Average of both categories.	<b>54.2%</b>
		13.2. Dead barriers: fallen leaves, banana pseudo-stems or logs.	41.7%		
20	Encourage "water conservation" concept.	21.1. Vegetation conservation activities are carried out on water source headwaters (rivers, streams, springs, ravines, ponds, lakes, etc.).	73.4%	Those who answered "No" to every question, which corresponds to those who answered "Yes" to any of the categories 21.1 to 21.3.	<b>74.9%</b>
		21.2. Vegetation conservation activities are carried out on both sides of water sources (5 m from ravines and 50 m from rivers).	54.8%		
		21.3. Water courses are polluted due to improper pest management.	46.3%		
		21.5 None	23.9%		
21	Apply manure to the plot, making use of coffee stubs (leaves, branches)	10.4. Soil cover consisting of coffee crop waste and dead mulch (any species).	35.7%	Those who answered "Yes."	<b>35.7%</b>
22	Grow nitrogen-fixing crops as soil cover between rows of coffee crops.	14.1 Ecuador laurel trees have been planted or are growing.	21.3%	Those who answered "No" to every	<b>77.9%</b>

MEASURE NO.	MEASURE	DATA-COLLECTION INSTRUMENT QUESTION	RESULTS PER QUESTION AND/OR CATEGORY FOR THE CALCULATION	CALCULATION METHOD	LEVEL OF COMPLIANCE
		14.2 Mohena trees have been planted or are growing.	63.8%	question, which corresponds to those who answered "Yes" to any of the categories 14.1 to 14.4.	
		14.3 Tornillo trees have been planted or are growing.	41.7%		
		14.4 Other species have been planted or are growing.	59.8%		
		14.5 None	22.1%		
23	Provide farmers' training on short-term and long-term health risks.	1.4. Health and environmental risks arising from pesticide use.	50.0%	Percentage of those who answered "Yes."	<b>50.0%</b>



## PERU CACAO ALLIANCE – PHASE II

MEASURE NO.	MEASURE	DATA-COLLECTION INSTRUMENT QUESTION	RESULTS PER QUESTION AND/OR CATEGORY FOR THE CALCULATION	CALCULATION METHOD	LEVEL OF COMPLIANCE
<b>Harvest, Post-Harvest and Storage</b>					<b>55.9%</b>
<b>Centralized Benefit Module</b>					
1	Cacao centralized benefit module should be located at least 50 m from any water course, in a non-floodable area with a high groundwater table.	6.1. What is the distance between the centralized module and the closest water course?	62.5%	Only category 1 is considered: over 50 m.	<b>62.5%</b>
2	Avoid placing fermentation boxes (either rectangular or tiered fermentation boxes) directly on the ground. Hence, the deployment of a collection system with gutters for mucilage removal will be encouraged in order to facilitate waste transport into containers for later use, septic tanks or pre-treatment ponds (effluent stabilization).	6.2. Where are fermentation boxes placed?	9.7%	Only category 2 is considered: on a piece of furniture.	<b>9.7%</b>
3	Roofs will preferably be made of wood and covered with transparent corrugated plastic, palm thatch or zinc roofing sheets.	6.3. What is the centralized module roof cover material?	92.3%	Those who answered “Yes” to any of the four questions: Wood, transparent corrugated plastic, palm thatch or zinc roofing sheets.	<b>92.3%</b>
4	Install at least one solid waste container.	6.5. Is there, at least, one solid waste container in the centralized module?	66.7%	Those who answered “Yes.”	<b>66.7%</b>
5	Deploy signs.	6.6. Is the centralized module signposted?	53.9%	Those who answered “Yes.”	<b>53.9%</b>
No number	Basic toilet facilities or a latrine should be operating, improved or built.	6.4. What type of toilet facilities are there in the centralized module?	84.6%	Those who answered “1” or “2”: Basic toilet facilities or latrines.	<b>84.6%</b>
<b>Family Benefit Module</b>					
42	Benefit modules should be located away from housing and areas with offensive odors, such as fertilizer storage area, chicken coops and fuel storage area. Additionally, fermentation boxes should be placed inside a roofed	9.1 What is the distance between the family benefit module and your house? Over 50 m?	58.3%	Those who answered “Yes” to all five questions from 9.1 to 9.5.	<b>70.0%</b>
		9.2. What is the distance between the family benefit module and the fertilizer storage area? Over 50 m?	33.3%		

MEASURE NO.	MEASURE	DATA-COLLECTION INSTRUMENT QUESTION	RESULTS PER QUESTION AND/OR CATEGORY FOR THE CALCULATION	CALCULATION METHOD	LEVEL OF COMPLIANCE
	construction that prevents strong air drafts.	9.3. What is the distance between the family benefit module and animals/children? Over 50 m?	50.0%		
		9.4. What is the distance between the family benefit module and the fuel storage area? Over 50 m?	41.7%		
		9.5. Is the family benefit module in a roofed construction?	66.7%		
13	Encourage biodegradable plastic bag usage (natural polymer derivatives) in cacao seedling production.	13.1. Biodegradable bags (natural polymer derivatives)	27.3%	Those who answered "Yes" to one category or the other.	40.4%
		13.2. Local easily-decomposable materials and consumables (palm-tree leaves and round timber)	24.8%		
43	Train partners/farmers and Project technical personnel in cacao post-harvest management.	11. Was training in cacao post-harvest management provided between September and October 2019?	56.2%	Those who answered "Yes."	56.2%
44	For the drying process, polyethylene sacks will be deployed to avoid cacao beans contamination due to contact with the ground and/or the concrete slab.	11.1. Black polyethylene sacks	68.7%	Those who answered "Yes" to question 11.1 or 11.2.	70.6%
		11.2. Pallets	3.7%		
46	Develop proper storage management mechanisms for collection points, convenient location, proper ventilation, rain protection, use of suitable containers for good aeration and drying, as well as pallet use to pile up sacks in order to avoid direct ground contact. Control and check for rodents.	12.1. Proper storage measures: Well-ventilated storage room.	44.2%	Those who answered "Yes" to all 3 questions.	8.5%
		12.2. Proper storage measures: Rain-protected storage room.	40.3%		
		12.3. Proper storage measures: Use of pallets to pile up sacks.	25.6%		
<b>Pesticide Use and Management</b>					<b>90.3%</b>
15	Train partners/farmers and Project technical personnel in IPM and PERSUAP.	14.1. Training: pest characteristic assessment prior to pesticide application.	26.8%	Those who answered "Yes" to any of these questions.	71.0%
		14.2. Pesticides are used.	47.9%		
		14.3. Training: Alternative pest control methods (Integrates Pest Management)	73.2%		

MEASURE NO.	MEASURE	DATA-COLLECTION INSTRUMENT QUESTION	RESULTS PER QUESTION AND/OR CATEGORY FOR THE CALCULATION	CALCULATION METHOD	LEVEL OF COMPLIANCE
		14.4. Training: Health and environment risks arising from pesticide use.	32.4%		
		14.5. Training: Use of PPE	36.6%		
		14.6. Training: Proper waste pesticide container disposal	17.1%		
		14.7. Training: Equipment and material washing	31.0%		
		14.8. Training: Pesticide preparation.	29.6%		
		14.9. Training: Pesticide storage	22.5%		
		14.10. Training: Other	2.9%		
17	Recommend the use of personal protection equipment (face masks, goggles, impervious clothing, etc.).	20.1. Protection: Goggles to cover eyes.	37.3%	Those who have implemented, at least, one of these measures.	<b>100.0%</b>
		20.2. Protection: Plastic to cover back, so as to avoid direct contact with backpack.	22.4%		
		20.3. Protection: Boots (rubber boots).	91.0%		
		20.4. Protection: Gloves (plastic gloves, not cloth gloves).	31.3%		
		20.5. Protection: Clean clothes or face masks to cover mouth and nose.	52.2%		
		20.6. Protection: Other (specify).	4.5%		
19	Pesticides should be stored in a safely manner, in dry, cool places. Prevent pesticides from exposure to humid zones. Pesticides will be kept in closed areas to avoid plagues as well as any pet or child that may reach them.	19.1. Safety measures: The area is surrounded by mesh fence.	6.7%	Those who answered "Yes" to any question.	<b>96.7%</b>
		19.2. Safety measures: The area is furnished with a door, lock or hasp, chains, wires.	46.7%		
		19.3. Safety measures: This is a dedicated area outside the house.	76.7%		
20	Encourage safe pesticide preparation areas, equipment washing areas and materials are located away from water sources; fumigation equipment should be triple-washed and washing water should be reused in the fumigated crop.	21.1. Are pesticides prepared in a well-ventilated environment (furnished with windows, mesh, wall space that allows for air-circulation)	21.1%	Any option between 21.1 and 21.4, and any option between 22.1 and 22.2.	<b>93.5%</b>
		21.2. Are pesticides prepared in an area inaccessible to children and animals?	24.6%		
		21.3. Are pesticides prepared away from water sources (at least 20 m)?	47.4%		

MEASURE NO.	MEASURE	DATA-COLLECTION INSTRUMENT QUESTION	RESULTS PER QUESTION AND/OR CATEGORY FOR THE CALCULATION	CALCULATION METHOD	LEVEL OF COMPLIANCE
		21.4. Are pesticides prepared outside the house?	49.1%		
		22.1. Are fumigation equipment and materials washed in a place away from water sources?	71.4%		
		22.2. Are fumigation equipment and materials washed at least 3 times (triple wash)?	55.4%		
<b>Plot Expansion</b>					<b>86.5%</b>
23	Use pest-free and disease-free genetic material from identified and guaranteed plots.	27.2. Cacao characteristics: Cacao should be pest- and disease-free.	54.3%	Those who answered "Yes" to, at least, one of the two options. Complemented with Question 26 results to provide explanation.	<b>76.7%</b>
		27.3. Cacao characteristics: Cacao should be from identified and guaranteed plots.	34.1%		
29	Encourage regular equipment maintenance to prevent fuel and lubricant leaks and unnecessary consumption, as well as the use of plastic canvas on the fuel and lubricant storage area floor.	23.1. Training was received: Required equipment check-out frequency.	34.4%	Those who answered "Yes" to, at least, one of the three options.	<b>96.0%</b>
		23.2. Training was received: Required maintenance instructions per type of equipment.	40.6%		
		23.3. Training was received: Maintenance costs	56.3%		
<b>Fertilizers and Manuring</b>					<b>67.8%</b>
7	Encourage reforestation with species growing in the same zone, around fertigation-system water intake area, thus helping control landslides resulting from the slope.	37. Does it have a fertigation system deployed in the plot?	3.7%	Consider this question only.	<b>3.7%</b>
8	Train partners/farmers in fertigation system operation and management, in compliance with required environmental and technical standards.	36.1. Fertigation system clean-up.	72.2%	Use percentage of people who stated having been trained in items 36.1 to 36.5	<b>100.0%</b>
		36.2. Regular system maintenance record.	33.3%		
		36.3. Ongoing motor-pump maintenance.	16.7%		
		36.4. Installation of wells and well-covers, avoiding to become a focal point of infection.	27.8%		
		36.5. Reforestation of fertigation-system water intake areas.	33.3%		

MEASURE NO.	MEASURE	DATA-COLLECTION INSTRUMENT QUESTION	RESULTS PER QUESTION AND/OR CATEGORY FOR THE CALCULATION	CALCULATION METHOD	LEVEL OF COMPLIANCE
24	Encourage the strict use of the Comprehensive Nutrition and Timely Pruning (CNTP) technique.	34.1. Practices: Crop pruning, considering plant age.	92.9%	Those who answered "Yes" to any of these measures.	100.0%
		34.2. Practices: Soil management and conservation.	30.3%		
		34.3. Practices: Applying organic matter onto soil.	39.0%		
25	Encourage composting piling up approximately 100 pods into a small "heap"; then, cover them with transparent or black plastic.	28.2. Training was received: Composting	39.6%	Those who have been trained in any of these measures.	78.2%
		28.3. Training was received: Fertilizer/manuring preparation and use.	61.5%		
27	Suggest a weed control based on cultural management (use of mulch, shadow, cover, etc.), keeping herbicide use at a minimum.	32.1. Hand control (living mulch or machete)	71.8%	Any of the three options.	98.8%
		32.2. Mechanical control (motorized brush cutter)	73.6%		
		32.3. Cultural control (mulch, shadow, cover)	4.3%		
50	Implement a manuring plan.	33. Does it have a manuring plan?	50.0%	This option only.	50.0%
54	Introduce localized irrigation techniques; keep living and dead mulch for cacao micro-pollinators; keep fallen leaves and soil organic matter; carry out proper thinning.	35.1. Drip irrigation	44.4%	Those who introduce at least one of these options.	66.7%
		35.2. Micro-spray irrigation	5.5%		
		35.3. Micro-hose irrigation	22.2%		
58	Train partners/farmers and Project technical personnel in green manuring and cover.	28.4. Legume planting	19.8%	This option only.	44.9%
<b>Reforestation and Erosion Control</b>					<b>51.7%</b>
47	Encourage deployment of living barriers using species such as Vetiveria zizanioides, Erythrina sp., Inga edulis, Pinto peanut (Arachis pintoi), Bolaina, Capirona, Glandular nakedwood, Pencilwood.	42.1. The plot has been furnished with living barriers: grama or vetiver, Erythrina, coral bean ( <i>palo vivo</i> ), living fence, swamp immortelle, ice-cream bean, <i>pacay</i> , <i>shimbillo</i> .	87.7%	One of the options.	98.1%
		42.2. The plot has been planted with dead barriers: weed waste, branches remaining after pruning, decaying logs, banana pseudo-stem and other residues.	26.4%		
57	Encourage deployment of leguminous soil living mulch, such as Canavalia,	40.1. The plot has been planted with Canavalia.	5.6%	At least one of the three options.	23.5%

MEASURE NO.	MEASURE	DATA-COLLECTION INSTRUMENT QUESTION	RESULTS PER QUESTION AND/OR CATEGORY FOR THE CALCULATION	CALCULATION METHOD	LEVEL OF COMPLIANCE
	Calisia, etc., as well as dead cover using weed waste, branch residues after pruning, decaying logs, banana pseudo-stems, and other plant residues found in the plot surroundings.	40.2. The plot has been planted with Kudzu.	17.3%		
		40.3. The plot has been planted with Centrosema.	1.9%		
48	Deployment of 50 x 40 cm (W x D) infiltration ditches, which will allow for soil stability in slopes greater than 20 %.	41. The plot is furnished with infiltration ditches.	25.6%	Infiltration ditch was implemented.	<b>25.6%</b>
49	Train partners/farmers and Project technical personnel in soil management and conservation practices.	39.1. Training was received: Living or dead containment barriers.	59.8%	Answer was "Yes" for, at least, one of the six options.	<b>100.0%</b>
		39.2. Training was received: Contour farming.	23.2%		
		39.3. Training was received: Infiltration ditches.	24.4%		
		39.4. Training was received: Drains.	29.3%		
		39.5. Training was received: Shade tree management	59.8%		
		39.6. Training was received: Stream banks are planted with bushes.	33.3%		
51	Carry out 0.80 to 1.0 m deep excavations (test pits) to determine soil compaction level (soils characterized by a low oxygen, water and nutrient uptake) and groundwater table (distance from ground surface to groundwater location).	38. Deep excavations (test pits) are dug for sampling purposes.	35.0%	Answer was "Yes."	<b>35.0%</b>
52	If there are shallow-ground plots due to presence of water (high groundwater table) and floodable soils, drains should be opened for excessive water egress from the plots.	44. Drains were installed for excessive water egress.	27.8%	Provided that the answer to question No. 43 was "Yes."	<b>27.8%</b>
	<b>Solid Waste and Effluent Management</b>				<b>65.2%</b>
31	Encourage a safe stockpiling of waste (pesticide containers) in sacks. This waste material will be transported to a main collection point built in the hamlet. Their final disposal will be ordered, following coordination with	47.1. Dedicated containers or sacks were used.	38.8%	Any of the two options is met.	<b>95.7%</b>
		47.2. They were delivered by Campo Limpio company.	6.3%		

MEASURE NO.	MEASURE	DATA-COLLECTION INSTRUMENT QUESTION	RESULTS PER QUESTION AND/OR CATEGORY FOR THE CALCULATION	CALCULATION METHOD	LEVEL OF COMPLIANCE
	SENASA and certified solid waste management companies.				
9	Family benefit modules should be located away from housing and convey "honey water" to septic tanks or handcrafted collection systems.	48.1. Honey water is conveyed to sedimentation ponds through gutters.	5.8%	Any of the two measures was met.	8.1%
		48.2. Honey water is conveyed to infiltration wells (vetiver)	2.3%		
30	Encourage a safe stockpiling of inorganic agricultural solid waste (plastic, cans, bags, etc.) in sacks for their subsequent disposal in temporary places.	47.1. Waste contains agrochemical residues: dedicated containers or sacks were used.	38.8%	Any of the four measures was met.	91.7%
		47.2. Waste contains agrochemical residues: delivered by Campo Limpio company.	6.3%		
		47.3. Any container was used.	5.6%		
		47.4. Recycling containers were used.	6.3%		
<b>Water Source Conservation</b>					<b>88.2%</b>
39	The margin strip land area will be determined based on waterway or riverbed dimension of the water body, and may have a variable width, from at least four meters (4 m) to the width needed to complete protection and conservation activities for the natural source of water, in order to allow primary usage, free passage, providing surveillance roads and other services. Also, dimensions may vary based on customs and traditions, as long as they do not pose a human health and life risk. (Regulations for the Water Resources Law No. 29338).	51. A crop-free zone of at least 5 m (50 m for rivers) is provided at each side of natural water sources (rivers, streams, springs, ravines, lakes, etc.).	76.3%	Answer was "Yes."	76.3%
40	Encourage the use of containment living or dead barriers ( <i>Erythrina edulis</i> , <i>Bambusa</i> sp. and/or forest trees plantation) to avoid marginal strip erosion.	49.1. Training was received: Conservation activities are carried out on water source headwaters (rivers, streams, springs, ravines, ponds, lakes, etc.).	87.1%	Any of the three measures was met.	100.0%
		49.2. Training was received: Vegetation conservation activities are carried out on both sides of water sources (5 m from ravines and 50 m from rivers).	51.6%		

MEASURE NO.	MEASURE	DATA-COLLECTION INSTRUMENT QUESTION	RESULTS PER QUESTION AND/OR CATEGORY FOR THE CALCULATION	CALCULATION METHOD	LEVEL OF COMPLIANCE
		49.3. Training was received: water course contamination due to an improper pesticide management	45.2%		
<b>Land Prospection and Selection</b>					<b>88.2%</b>
34	Deter slash and burn in primary forests and secondary forest over the age of 5, especially during land preparation for cacao nursery and facility.	53. Slash and burn activities for over-five-year-old forests (either primary or secondary forests) were necessary to prepare the land and install the cacao nursery?	75.3%	Answer was "No."	<b>75.3%</b>
35	Train partners/farmers and Project technical personnel in biodiversity conservation.	52.1. Training was received: Cacao crops grown on already disturbed lands.	78.2%	Any of the four measures was met.	<b>100.0%</b>
		52.2. Training was received: Disturbance of over-five-year-old purmas.	45.5%		
		52.3. Training was received: Primary forests should not be disturbed	30.9%		
		52.4. Training was received: Over-five-year-old secondary forests should not be disturbed.	25.5%		
36	Use zoning maps for areas to intervene, identifying whether these areas are close to Protected Natural Areas (PNAs), Permanent Production Forests (PPFs) or Buffer Zones.	54.1. Measures taken: Area zoning.	85.0%	Any of the two measures was met.	<b>89.3%</b>
		54.2. Measures taken: The zone should not be located within a protected area, a buffer zone, forestry concessions, or a permanent production forest.	13.7%		




# ANNEX H: CONFLICT OF INTEREST DISCLOSURE

## Disclosure of Conflicts of Interest for USAID Evaluations Team Members

<b>Name</b>	Inés Ardiles Guerrero
<b>Title</b>	
<b>Organization</b>	All In Development
<b>Evaluation Position?</b>	<input type="checkbox"/> X Team Leader <input type="checkbox"/> Team member
<b>Evaluation Award Number (contract or other instrument)</b>	
<b>USAID Project(s) Evaluated (Include project name(s), implementer name(s) and award number(s), if applicable)</b>	Environmental Compliance Review
<b>I have real or potential conflicts of interest to disclose.</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> X No
<p><b>If yes answered above, I disclose the following facts:</b></p> <p><i>Real or potential conflicts of interest may include, but are not limited to:</i></p> <ol style="list-style-type: none"> <li>1. Close family member who is an employee of the USAID operating unit managing the project(s) being evaluated or the implementing organization(s) whose project(s) are being evaluated.</li> <li>2. Financial interest that is direct, or is significant though indirect, in the implementing organization(s) whose projects are being evaluated or in the outcome of the evaluation.</li> <li>3. Current or previous direct or significant though indirect experience with the project(s) being evaluated, including involvement in the project design or previous iterations of the project.</li> <li>4. Current or previous work experience or seeking employment with the USAID operating unit managing the evaluation or the implementing organization(s) whose project(s) are being evaluated.</li> <li>5. Current or previous work experience with an organization that may be seen as an industry competitor with the implementing organization(s) whose project(s) are being evaluated.</li> <li>6. Preconceived ideas toward individuals, groups, organizations, or objectives of the particular projects and organizations being evaluated that could bias the evaluation.</li> </ol>	

I certify (1) that I have completed this disclosure form fully and to the best of my ability and (2) that I will update this disclosure form promptly if relevant circumstances change. If I gain access to proprietary information of other companies, then I agree to protect their information from unauthorized use or disclosure for as long as it remains proprietary and refrain from using the information for any purpose other than that for which it was furnished.

<b>Signature</b>	
<b>Date</b>	October 11, 2019

**Disclosure of Conflicts of Interest for USAID Evaluations Team Members**

<b>Name</b>	Dante Santa Cruz
<b>Title</b>	
<b>Organization</b>	All In Development
<b>Evaluation Position?</b>	<input type="checkbox"/> Team Leader <input checked="" type="checkbox"/> X Team member
<b>Evaluation Award Number</b> (contract or other instrument)	
<b>USAID Project(s) Evaluated</b> (Include project name(s), implementer name(s) and award number(s), if applicable)	ENVIRONMENTAL COMPLIANCE REVIEW
<b>I have real or potential conflicts of interest to disclose.</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> X No
<p><b>If yes answered above, I disclose the following facts:</b></p> <p><i>Real or potential conflicts of interest may include, but are not limited to:</i></p> <ol style="list-style-type: none"> <li>1. Close family member who is an employee of the USAID operating unit managing the project(s) being evaluated or the implementing organization(s) whose project(s) are being evaluated.</li> <li>2. Financial interest that is direct, or is significant though indirect, in the implementing organization(s) whose projects are being evaluated or in the outcome of the evaluation.</li> <li>3. Current or previous direct or significant though indirect experience with the project(s) being evaluated, including involvement in the project design or previous iterations of the project.</li> <li>4. Current or previous work experience or seeking employment with the USAID operating unit managing the evaluation or the implementing organization(s) whose project(s) are being evaluated.</li> <li>5. Current or previous work experience with an organization that may be seen as an industry competitor with the implementing organization(s) whose project(s) are being evaluated.</li> <li>6. Preconceived ideas toward individuals, groups, organizations, or objectives of the particular projects and organizations being evaluated that could bias the evaluation.</li> </ol>	

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<b>Signature</b>	
<b>Date</b>	October 11, 2019

**Disclosure of Conflicts of Interest for USAID Evaluations Team Members**

<b>Name</b>	Susana Guevara
<b>Title</b>	Evaluation and Inclusion Specialist
<b>Organization</b>	EnCompass – USAID MELS
<b>Evaluation Position?</b>	<input type="checkbox"/> Team Leader <input checked="" type="checkbox"/> X Team member
<b>Evaluation Award Number (contract or other instrument)</b>	
<b>USAID Project(s) Evaluated (Include project name(s), implementer name(s) and award number(s), if applicable)</b>	Environmental Compliance Review
<b>I have real or potential conflicts of interest to disclose.</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> X No
<p><b>If yes answered above, I disclose the following facts:</b></p> <p><i>Real or potential conflicts of interest may include, but are not limited to:</i></p> <ol style="list-style-type: none"> <li>1. Close family member who is an employee of the USAID operating unit managing the project(s) being evaluated or the implementing organization(s) whose project(s) are being evaluated.</li> <li>2. Financial interest that is direct, or is significant though indirect, in the implementing organization(s) whose projects are being evaluated or in the outcome of the evaluation.</li> <li>3. Current or previous direct or significant though indirect experience with the project(s) being evaluated, including involvement in the project design or previous iterations of the project.</li> <li>4. Current or previous work experience or seeking employment with the USAID operating unit managing the evaluation or the implementing organization(s) whose project(s) are being evaluated.</li> <li>5. Current or previous work experience with an organization that may be seen as an industry competitor with the implementing organization(s) whose project(s) are being evaluated.</li> <li>6. Preconceived ideas toward individuals, groups, organizations, or objectives of the particular projects and organizations being evaluated that could bias the evaluation.</li> </ol>	

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<b>Signature</b>	
<b>Date</b>	September 15, 2019