September 2022

An orchard funded by the Adaptation Fund. Nabón, Ecuador, 2022

# Ex Post Evaluation Summary - Ecuador

# Enhancing Resilience of Communities to the Diverse Effects of Climate Change on Food Security in the Pichincha Province and the Jubones River Basin of Ecuador

Technical Evaluation Reference Group
ADAPTATION FUND

September 2022

An orchard funded by the Adaptation Fund. Nabón, Ecuador, 2022

# Ex Post Evaluation Summary - Ecuador

# Enhancing Resilience of Communities to the Diverse Effects of Climate Change on Food Security in the Pichincha Province and the Jubones River Basin of Ecuador

**AF-TERG Chair:** Debbie Menezes

**Team members:** Dennis Bours, Susan Legro (focal points), Caroline Marie Holo, Mónica Ribadeneira Sarmiento, Jindra čekan/ová, Margaret (Meg) Spearman

**AF-TERG Secretariat Coordinator:** Dennis Bours

The Adaptation Fund (the Fund) was established through decisions by the Parties to the United Nations Framework Convention for Climate Change and its Kyoto Protocol to finance concrete adaptation projects and programmes in developing countries that are particularly vulnerable to the adverse effects of climate change. At the Katowice Climate Conference in December 2018, the Parties to the Paris Agreement decided that the Fund shall also serve the Paris Agreement. The Fund supports country-driven projects and programmes, innovation, and global learning for effective adaptation. All of the Fund's activities are designed to build national and local adaptive capacities while reaching and engaging the most vulnerable groups, and to integrate gender consideration to provide equal opportunity to access and benefit from the Fund's resources. They are also aimed at enhancing synergies with other sources of climate finance, while creating models that can be replicated or scaled up. www.adaptation-fund.org

The Technical Evaluation Reference Group of the Adaptation Fund (AF-TERG) is an independent evaluation advisory group accountable to the Fund Board. It was established in 2018 to ensure the independent implementation of the Fund's evaluation framework, which will be succeeded by the new evaluation policy from October 2023 onwards. The AF-TERG, which is headed by a chair, provides an evaluative advisory role through performing evaluative, advisory, and oversight functions. The group is comprised of independent experts in evaluation, called the AF-TERG members. A small secretariat provides support for implementation of evaluative and advisory activities as part of the work programme.

While independent of the operations of the Fund, the AF-TERG aims to add value to the Fund's work through independent monitoring, evaluation, and learning. www.adaptation-fund.org/about/evaluation/



AF-TERG, 2022. Ex Post Evaluation Summary - Ecuador. AF-TERG, Washington, DC.

This report was presented to the Adaptation Fund Board intersessionally between the first and second parts of its 35th meeting.


This report was finalized in September 2022.

# Table of Contents


List of Figures and Tables 1

Acronyms and Abbreviations 2

Project General Information 3

Evaluation Background 4

- Evaluation Process 4
- Evaluation Scope 4
  - Water security 4
  - Food Security 5
- Evaluation Methods and Limitations 6

Findings: Sustainability, Resilience, and Impact 8

- Sustainability 8
  - Site 1: Nabón 8
  - Site 2: Cochapata 9
- Other Sustainability Findings 10
- Resilience 11
- Impact 14
  - Emerging Project impact 14
  - Adaptation Fund impact 14

Conclusions 15

Lessons Learned and Corresponding Recommendations 15

Additional Lessons and Recommendations from the Pilot 16

- For Implementing Entities 16
- For the Adaptation Fund 16
- For the AF-TERG on methods 17

Annex 1 Resilience Analysis Framework 18

# List of Figures and Tables


Figure 1 Map of FORECCSA Intervention and Evaluation Area 5

Figure 2 Abandoned garden with piping, Nabón 8

Figure 3 Rehabilitated reservoirs in Cochapata 9

Figure A.1 Understand ex post resilience: framing for resilience analysis 17

Figure A.2 Resistance - Resilience - Transformation (R-R-T scale) 19

Table 1 Overview of Interventions 6

Table 2 Overview of Topics Covered during Field Interviews 7

Table 3 Assessment by Sustainability Conditions 10

Table 4 Resilience by Characteristics 11

# Acronyms and Abbreviations

| | |
|---|---|
| **AF-TERG** | Technical Evaluation Reference Group of the Adaptation Fund |
| **FORECCSA** | Project name abbreviation "Enhancing Resilience of Communities to the Diverse Effects of Climate Change on Food Security in the Pichincha Province and the Jubones River Basin of Ecuador" from the Spanish name "Fortalecimiento de la resiliencia de las comunidades ante los efectos adversos del cambio climático con énfasis en seguridad alimentaria y consideraciones de género en la cuenca del río Jubones y la provincia de Pichincha" |
| **FGD** | Focus Group Discussion |
| **IE** | Implementing Entity |
| **KII** | Key Informant Interview |
| **M&E** | Monitoring and Evaluation |
| **MIE** | Multilateral Implementing Entity |
| **R-R-T** | Resistance-Resilience-Transformation |
| **ToC** | Theory of Change |
| **UN** | United Nations |
| **WFP** | UN World Food Programme |

# Project General Information

| AF Project ID | ECU/MIE/Food/2010/1 | |
|---|---|---|
| Country | Ecuador | |
| Project Title | Enhancing Resilience of Communities to the Adverse Effects of Climate Change on Food Security in the Pichincha Province and the Jubones River Basin, FORECCSA | |
| Intervention Area | • Four provinces in Ecuador highlands: three at the Jubones River Basin (Azuay, El Oro and Loja), the other was Pichincha (without geographic connection)<br>• 12 cantons, 52 parishes and 240 communities and small villages<br>• 39 parishes were in the Jubones River Basin and 13 outside of it (Pichincha Province). | |
| Implementing Entity | Type: Multilateral Implementing Entity (MIE)<br>Name: UN World Food Programme (WFP) | |
| Executing Entity | Ministry of Environment of Ecuador (now Ministry of Environment, Water and Ecologic Transition, MAATE), in coordination with the Ministry of Agriculture and Livestock, the Government of the Province of Pichincha and 35 local governments of the Jubones River Basin | |
| Budget (USD) | US$ 7,449,468 | |
| Start date | 29 November 2011 | |
| Completion date | 15 June 2018 | |
| Years | Seven years | |
| Sector | Food Security | |
| Overall Goal | Reduce vulnerability and food insecurity of communities and ecosystems, related to the adverse effects of climate change, in the most vulnerable cantons of Pichincha Province and the Jubones River Basin | |
| Project Components | **Component 1.** Develop awareness, knowledge and capacity at the community level on climate change and food insecurity related risks | **Component 2.** Increase adaptive capacity and reduce recurrent risks of climate variability at the community level [1] |
| Component Objectives | **Objective 1:** Increased knowledge to manage climate change risks affecting food security in targeted cantons in Pichincha Province and Jubones River Basin | **Objective 2:** Strengthen adaptive capacity to respond to the impacts of climate change, including variability in cantons in Pichincha Province and Jubones River Basin |
| Component Outcomes | **1.1.** Increased awareness of communities on climate change and food security related risks<br><br>**1.2.** Secured ownership of adaptation measures in communities in targeted cantons<br><br>**1.3.** Increased knowledge to manage climate change and risk, including climate variability affecting food security | **2.1.** Increased adaptive capacity and ecosystem resilience in targeted rural parishes<br><br>**2.2.** Increased capacity at parishes and institutional level to manage climate change risk in the targeted cantons |
| Project Ratings at Terminal Evaluation | Overall Project Outcome Rating | Satisfactory (5 out of 6 points) |
| | Usefulness of the Monitoring and Evaluation (M&E) System | Moderately satisfactory (4 out of 6 points) |
| | Risks to Sustainability: Env. Risks and Uncertainty of Impacts of Climate Change | Moderately probable (3 out of 4 points) |

1. This component was selected for the ex post evaluation of the project 'Enhancing Resilience of Communities to the Adverse Effects of Climate Change on Food Security in the Pichincha Province and the Jubones River Basin, FORECCSA'.

# Evaluation Background

The Ecuador ex post evaluation is the second of a series of pilot ex post evaluations of strategically selected projects that have been closed between three to five years. At the request of the Fund Board, the Technical Evaluation Reference Group of the Adaptation Fund (AF-TERG) is drawing on these projects for post-implementation learning and impact evaluation.

The AF-TERG commissioned a post evaluation of the FORECCSA project to analyse one or several project outcome(s) in order to answer two questions:

i. Have the project outcomes/impact(s) been sustained since project completion?

ii. How are the sustained project outcome(s) climate-resilient?

These evaluations aim to gauge the overriding desired impact of the Adaptation Fund (the Fund) which is: *"adaptive capacity enhanced, resilience strengthened and the vulnerability of people, livelihoods, and ecosystems to climate change reduced."* The team is working to evaluate this impact across all the ex post evaluations commissioned.

**These evaluations aim to gauge the overriding desired impact of the Adaptation Fund.**

## Evaluation Process

National evaluator Monica Ribadeneira Sarmiento began the Ecuador ex post evaluation in November 2021. Over ten months, it was carried out in different stages: (i) review of project documentation; (ii) capacity-building training; (iii) selection of outcomes to evaluate ex post; (iv) field visit and data collection; (v) data analysis; and (vi) report write-up. Much time was spent looking for key documentation, including an outcome survey and participant lists.

## Evaluation Scope

The selection of outcomes for evaluation focused on Component 2 of the FORECCSA project –concrete adaptation interventions (assets) – rather than adaptive knowledge and capacities (Component 1). The evaluator chose Component 2 because of better data availability and quality. Another intended use of the evaluation was to provide lessons for WFP programming on water in the north of the country (Colombia-Ecuador binational project on building adaptive capacity to climate change through food security and nutrition actions).

Within Component 2, the FORECCSA project had 86 adaptation interventions, clustered into nine groups and targeted at 240 communities highly vulnerable to droughts related to water and food security. The interventions in italics were assessed as part of the ex post evaluation.

**Water security**

1. *Enhancement of community-level irrigation*
2. *Provision and enhancement of plot irrigation systems*
3. Water source protection
4. Improvement of water availability for human consumption

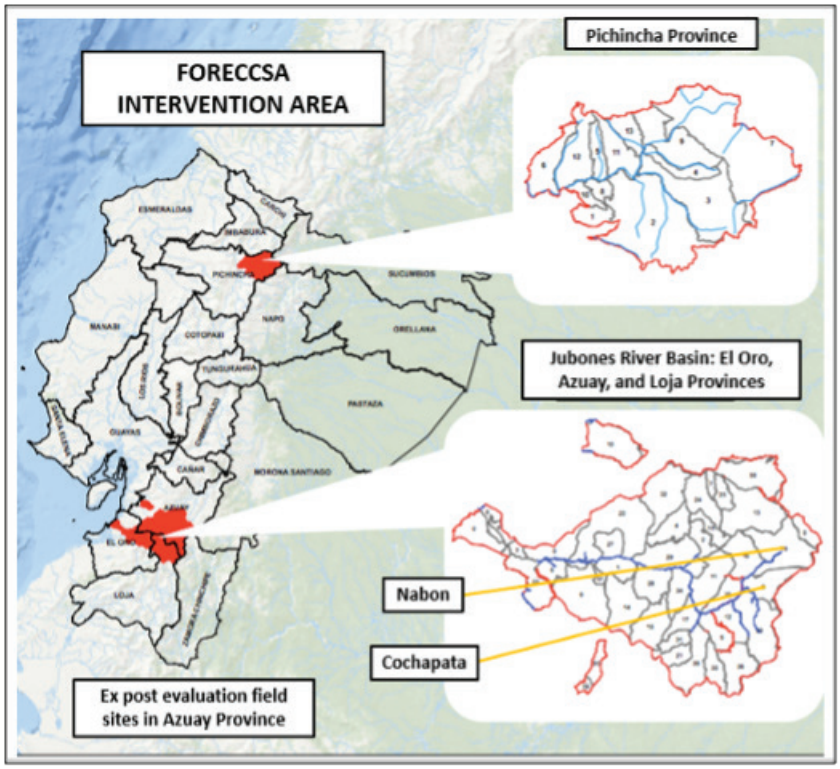
**Food Security**

5. Handling of small livestock
6. *Homestead gardens and family orchards*
7. Agroforestry systems
8. Organic fertilizer management
9. Promotion of seeds resistant to droughts and freezing

The project was targeted to address the following weaknesses in the parishes in the Jubones River Basin:

- High levels of food insecurity
- Climatic threats such as the melting of glaciers, intense rains and droughts, among others
- Lack of public policy to prepare local populations and their livelihoods to be resilient to the threats

**FIGURE 1:** Map of FORECCSA Intervention and Evaluation Area




Source: WFP FORECCSA presentation (2018)

The evaluator looked for locations with *"Strengthening community irrigation in drought areas"* combined with food security activities ("Promotion of gardens/vegetable orchards"). This yielded three cantons and seven towns for the ex post evaluation. With the input of WFP's monitoring and evaluation focal point, the ex post evaluation pilot focused on evaluating the sustainability and resilience of water infrastructures (reservoirs and piped irrigation) and homestead gardens and orchards in two sites: Nabón and Cochapata (both in Azuay Province). Given the expected outmigration from this province, an additional city, Celén (Loja Province), was added.

The interventions* evaluated were:

**TABLE 1: Overview of Interventions**

| Parish | Adaptation interventions financed by the Adaptation Fund | Detailed evaluated interventions for food and water security[2] |
|---|---|---|
| Nabón | Protection of water sources, improvements of piping networks for irrigation water and improvement of family gardens and orchards in Nabón Centro | • Improvement of water catchments / water driving lines (1.30 km/378 families)<br>• Plantation of fruit trees and horticultural species and distribution of vegetable seeds (105 families) |
| Cochapata | Improvement of community irrigation infrastructure and the technical-productive capacities of the farmers of the upper, middle, and lower zone in the parish of Cochapata | • Improvement or rehabilitation of a system of three communal reservoirs<br>• Improvement of water driving lines (2.50 km/400 families)<br>• Plantation of fruit trees and horticultural species and distribution of vegetable seeds (54 families) |
| Celén* | Improvement of the Tres Quebradas-Gañil irrigation system and implementation of gardens in the parish of El Paraiso de Celén | • Improvement of water catchments/water driving lines (4.10 km/75 families)<br>• Plantation of fruit trees and horticultural species and distribution of vegetable seeds (200 families) |

* So few people were available to interview in Celén that their data were not sufficient for analysis. Findings are considered anecdotal.

## Evaluation Methods and Limitations

The ex post evaluation followed a co-creation process. It thus engaged the implementing entity (IE), WFP Ecuador, in the choice of the outcome to evaluate. This aimed to ensure learning and usefulness for the country counterparts. The AF-TERG trained both WFP senior staff and the evaluator on ex post evaluation concepts and methods. A qualitative matrix was used to triangulate findings, although tools were not pretested and the quality of the field data for analysis was variable.

The fieldwork took place between May and June 2022, at the end of the rainy season, which was not comparable to the dry season i.e. the season targeted by the project. Reservoirs were fed by rainwater during the fieldwork, leaving it more difficult to know whether benefits were similar during the dry season.

2. This column describes the evaluated assets, as achieved at project completion.

Fieldwork consisted of Focus Group Discussions (FGDs), one-on-one Key Informant Interviews (KIIs), and transect walks for field observation in all three sites. Other tools such as mapping, seasonal calendars, timelines, and rankings were used selectively when enough respondents were found (for example, in Cochapata). Efforts were made to isolate water use to the orchards and gardens rather than for other crops such as corn and wheat. Site visits confirmed use of the reservoirs and piping systems.

**TABLE 2: Overview of Topics Covered during Field Interviews**

| **Water infrastructure and orchards** |
|---|
| Sustainability of intervention |
| Access and use of intervention |
| Impacts and benefits of intervention |
| Distribution of benefits across the community |
| **Resilience** |
| Capacity to meet food or water security needs |
| Capacity to sustain climatic shocks and stresses |
| Resilience characteristics: redundancy *(e.g. back-up systems)*; at scale *(e.g. impactful as a result of time/timing or size/dimension);* diversity *(e.g. ecological or involvement of vulnerable groups);* feedback loops *(e.g. information sharing and partnerships);* dynamism *(e.g. adaptive management/actions)* |

Source: AF-TERG ex post evaluation interview protocol (2022)

The ex-post team encountered logistical and planning challenges, such as limited access to pre-fieldwork preparation support, limited funding and former staff unable or unwilling to accompany the evaluator. In addition, there was outmigration related to COVID-19 and work in mines and cities from targeted project sites. As a result, in addition to two senior staff from the WFP country team, only 19 beneficiaries were interviewed during the fieldwork: Nabón (four), Cochapata (14), Celén (one). This is in addition to two senior staff from the WFP team.

Cochapata had the largest number of respondents (14 of the 54 families who benefited from water and food security interventions). Only four participants were found for qualitative interviews in Nabón, although both interventions had helped more than 100 people. Similarly, in Celén, the evaluator only found one participant willing to speak after three days of looking for respondents in the field. The limited participation compromised the robustness and representativeness of findings, and limited findings of this report to

# Findings: Sustainability, Resilience, and Impact

## Sustainability

There were a series of shocks in both sites of Azuay Province since FORECCSA closed in 2018:

- Droughts (in 2018 in Nabón, and in 2019 and 2022 in Cochapata)
- The economic crisis caused by COVID-19, and subsequent outmigration from Ecuador, with strong evidence in Nabón
- A landslide (in 2021 in Nabón)

There were a series of shocks in both sites

### Site 1: Nabón

In Nabón, FORECCSA constructed 1.30 km of private water lines and provided pumping systems to landowners, which enabled them to connect to public water channels. At ex post, nearly half of beneficiaries in Nabón did not have access to piped water anymore because a landslide in December 2021 had destroyed the neighbourhood of Las Rosas and blocked La Laguna — the public water channel. This forced people to return to a traditional water source, the Chalcay River, if they were living in its vicinity. They used new pumps and pipes provided by the FORECCSA project or purchased them anew when they wore out. Those living far from the river depended on rain only for their crops and orchards. All four respondents praised water piping where it was still available. Nonetheless, none changed their cultivation or climate-resilience cropping to address the droughts or decreased water supply.

In Nabón, FORECCSA also provided fruit trees (peach, pear, and avocado) and horticultural species. This allowed 105 families to have their own orchards in the Casal Bajo La Laguna neighborhood. At ex post, most lands, and consequently orchards, had been abandoned. Due to the economic crisis and the pandemic, the city experienced an intense wave of migration towards mines, cities, and other countries. Nabón became a "ghost town." Where people stayed, a few orchards were working. All four people interviewed consumed or gifted the avocados, peaches, and vegetables to friends and families as social capital, but none sold them to the market. Tellingly, the abandoned farms' fruits and vegetables were left to rot without being gathered by anyone for the migrants' return or sale during their migration.

**FIGURE 2:** Abandoned garden with piping, Nabón

Source: AF-TERG field visit (June 2022)

**Site 2: Cochapata**

In Cochapata, FORECCSA rehabilitated a long-abandoned system of three communal reservoirs. This made it the most sizeable investment visited out of the evaluated sites, as well as the most successful. The respondents are relying on reservoirs for all their irrigation needs; before the project, they relied on rainwater. Nearly all (93 per cent) also used water from the reservoirs to cultivate their orchards and gardens. The infrastructure consists of three reservoirs supplied with two public water channels (Shinkata and Culebrillas). They are connected with reinforced pipelines and a pressure pumps net. At ex post, the system had been maintained through biannual communal work performed by the families. The population used it widely for their agriculture needs.

In Cochapata, FORECCSA orchards assisted 54 families. At ex post, the lands visited with the communities through transect walk had been maintained. Families were both consuming and selling the fruit, although few knew for how much it could be sold. For the interviewees, selling products was not a priority. The production cost had become too high for them because of elements such as fertilizer. Contrary to Nabón, Cochapata did not experience large outmigration.

**FIGURE 3:** Rehabilitated reservoirs in Cochapata

Source: AF-TERG field visit (June 2022)

## Other Sustainability Findings

When designing FORECCSA, WFP put in place a sustainability plan for each intervention. As one key issue for sustainability, the plan relied on the capacity-building of local authorities or institutions. In other words, parishes rather than the local community had to maintain and monitor the project outcomes. While capacities were not evaluated in this ex post evaluation, this issue has proved to be a major challenge for the sustainability and maintenance of project results, at least in Nabón. In Cochapata, the size of the investment, the lesser scale of migration, and the ownership of communities for water infrastructure allowed better sustainability of outcomes.

**TABLE 3: Assessment by Sustainability Conditions**

| Sustainability assessment | Findings |
|---|---|
| **Ownership**<br><br>*Sustained motivation; who benefits from the intervention enough to sustain it locally? Who is using it/ demanding it?* | Ownership seemed weaker in Nabón because of outmigration and lack of water from the landslide. There seemed to be little ownership of the orchards and gardens, which had been abandoned.<br><br>There was strong ownership of Cochapata reservoirs. People used the water for agricultural production. They also organized the voluntary biannual maintenance, as well as continuing to cultivate crops. |
| **Resources**<br><br>*How is the intervention being resourced to be sustained? Are these financial, in-kind, technical, or other?* | In Nabón, the absence of investments to repair the water supply post-landslide by municipal authorities speaks to a lack of long-term water security prospects. Food security was weaker as people mostly abandoned the farms. Those remaining used the orchard production as social capital rather than to generate income from sale of produce. Nonetheless, mining income clearly was more remunerative and could lead to food access via cash purchases.<br><br>Food production only seemed to generate income in Cochapata. Even there, income seems to be marginal. People could not recall how much money they made from the orchards (avocados or peaches). |
| **Capacities**<br><br>*What are the necessary project knowledge and skills to be transferred to the national stakeholder partner? How will training be sustained for specific sectoral behaviour change among new entrants onward?* | In both sites, participants knew how to maintain either the piping or the reservoirs. Some mentioned training their children to do so, which points to sustainability.<br><br>There was no evidence of food security replanting/ extension in either site.<br><br>In Cochapata, five participants were planting coffee to withstand higher temperatures, which could be an emerging outcome (that still has to demonstrate results), as it was using FORECCSA water. |
| **Partnership**<br><br>*What continued project knowledge and skills are needed from which stakeholder partners? What local contracting with direct and indirect partners are needed to sustain project operations?* | There seem to be no partnerships in the Jubones River Basin area supporting the communities for assets maintenance. |

## Resilience[3]

In terms of climate disturbances, FORECCSA targeted highly drought-prone regions. In these areas, extended periods of drought led to crop loss, lack of food and water, and plant and animal diseases. Natural systems of the project sites differed largely by province. El Oro Province is characterized by lowland areas. Azuay and Loja provinces, where evaluated sites are located, are highland areas (part of the Andean mountains). Different types of investments were made in the communities to allow access to river water; most of the sub-basins stream towards the Jubones River. In 2020, in terms of human systems at the national level, the Ministry of Environment (former MAE) and the National Secretary of Water (former Senagua) were merged into an institution (MAATE, Ministerio del Ambiente, Agua y Transición Ecológica de la República del Ecuador). Presumably, they had less technical capacity owing to turnover, but there is no evidence of how the merger may have affected project outcomes. At the local level, mingas (communal working groups) maintain the reservoirs and public water lines by keeping them free of debris. As far as the nexus between human and natural systems, the agricultural plots generated or improved by FORECCSA were largely abandoned due to outmigration in Nabón. There is no further evidence of how FORECCSA outcomes influenced or were influenced by the intervention measures at the nexus (such as policies, skills, land-use practices, etc.).

The fieldwork findings demonstrated both positive and negative prospects in terms of resilience characteristics across the targeted outcomes (food security and water management) and their related human and natural systems. Table 3 highlights observations about these characteristics.

**TABLE 3:** Resilience by Characteristics

| Resilience characteristics | Findings |
|---|---|
| **Redundancy**<br><br>*(Creating a duplicate or back-up system to support resilience to climate disturbances if/when one option fails)* | The provision of water through the improvement or construction of water infrastructure aimed to help people achieve greater water and food security with "back-up" or secondary options in drought conditions.<br><br>In Nabón, the obstruction of a public water channel due to a landslide means that people are either left with little water for basic needs or resort to using river water as a back-up system. Those who live close to the river may also pump their water from there, even when they have access to an unobstructed public channel. The unmanaged overextraction of the river could potentially have negative environmental or health consequences. This means that in Nabón, FORECCSA water investments were not sufficient solutions to sustainably enhance water security. Conversely, in Cochapata, the reservoirs provide a valuable source of water for the population i.e. they provide enough water to irrigate around 800 ha of land. Because of the reservoirs' utility, neighbouring communities are also building their own private reservoirs.<br><br>The orchards were designed as a back-up for food security. In all sites, orchard products did not help generate sufficient income or food for consumption to be a critical back-up option for people. |

3. The AF-TERG developed a resilience analysis framework and applied it during ex post evaluation desk reviews and fieldwork. Details of the framework are available in Annex 1.

**TABLE 4: Resilience by Characteristics** (continued)

| Resilience characteristics | Findings |
|---|---|
| **Diversity**<br><br>*(Reflecting a wide and deep variety of actors and inputs working towards common goals in complexity and climate resilience)* | With the exception of Celén, the evaluated sites did not have a high percentage of Indigenous peoples, even though the project was implemented in the Andean Mountain region. Only two of 240 communities selected by FORECCSA were considered as indigenous (Celén and Saraguro).<br><br>The high level of migration observed in Nabón showed the project did not significantly improve livelihoods or provide access to alternative livelihood options. |
| **At Scale**<br><br>*(Providing the temporal or spatial scale needed for natural and/or human systems to maintain or change their functions and/or structures in the face of climate disturbances)* | One of the most significant differences between Cochapata, which had three communal reservoirs, and Nabón (and potentially Celén), which had small private investments, lies in the scale of the interventions. Almost the same number of families were targeted in Nabón and Cochapata (378 and 400, respectively). However, the size of reservoirs and water storage capacity in Cochapata (about 50,000 m3) may have helped make it relevant to the community. It is not clear whether the reservoirs contributed to a lesser economic migration from Cochapata. However, FORECCSA's water (or food) investments did not prevent outmigration from Nabón. Equally, Cochapata was the only visited site where interviewed people described an increase in agricultural productivity because of water availability and FORECCSA seeds.<br><br>In all visited sites, the fruit trees seemed to be more of a marginal benefit. For example, they provided social capital through trading, gifting, or occasional selling or consumption, rather than becoming a centrepiece of the community's food security. |
| **Dynamism (flexibility)**<br><br>*(Demonstrating flexibility – around an equilibrium – in approach and strategy towards reaching common objectives)* | On migration: see conclusion in row "at scale"<br><br>While no examples of dynamism were observed in Nabón and Celén, Cochapata exhibited dynamism several times:<br>• People are learning to store excess water from rainfall in private reservoirs for security against summer droughts.<br>• Five farmers are experimenting with the cultivation of coffee using the water they are accessing from FORECCSA investments; they observed that temperatures are getting warmer and that this crop could be easier to grow and be more profitable. |
| **Continuous Feedback Loops**<br><br>*(Supporting communication lines, access to information or partnerships for sustainability of outcomes)* | In Cochapata, FORECCSA beneficiaries organize themselves to maintain the three reservoirs through voluntary communal work (minga). Young people sometimes replace their parents in this task, allowing for generational transfer. |

The overall strategy of the outcomes was to maintain systems (and their structures and functions) for water management and food security. Thus, the resilience of FORECCSA investments can be classified as active and passive resistance on the resistance – resilience – transformation (R-R-T) typology[4]. The extension of public water lines and reservoirs amplify existing structures i.e. they offer the same function as before the intervention i.e. water provision, and are actively maintained. The drought-resistant seeds were also a form of passive resistance to an average decrease in rainfall i.e. food

4. See Annex 1 on Resilience analysis framework for more information on levels of resilience.

provision. There is no evidence of transformational or resilience elements, as neither of the evaluated assets provided additional benefits or served an additional purpose at the time of the ex post evaluation than the one intended at design. In other words, fundamental functional or structural changes were not observed in the outcome examined during the ex post evaluation.

## Impact

### Emerging Project impact

The theory of change (ToC) stipulated that increased water quality and access for irrigation, as well as increased food production in the dry season, would lead to diversification of food consumption and greater access to food. Ultimately, this would reduce vulnerability and food insecurity.

The following conclusions can be drawn regarding the potential impact of FORECCSA:

- In Nabón, increased access to water was only partial and not sustained for about half of the population. While the other half of the population had access to water, some reverted to river access, and most had out-migrated.
- In Cochapata, the reservoirs have significantly increased access to water. However, the impact of reservoirs on food security is unclear as participants did not speak of orchards or gardens as key assets. It is impossible to say whether FORECCSA had an impact on food security.
- In general, investments were not large enough to allow noticeable income growth or improved food consumption. Either that, or the investments cannot be isolated given only three days of evaluation per site, lack of access to a representative sample of respondents, and their income/consumption.

### Adaptation Fund impact

In relation to the Fund impact "adaptive capacity enhanced, resilience strengthened and the vulnerability of people, livelihoods, and ecosystems to climate change reduced", it can be concluded that:

- In Nabón, multiple shocks and vulnerability (COVID-19, economic crisis, drought, landslide) have contributed to large populations migrating out of the town. For the remaining population, FORECCSA's investments in water food security were not sustained at the time of the ex post evaluation or relevant enough to produce observable enhancement in the adaptive capacity of project beneficiaries.
- In Cochapata, resilience to drought impacts was enhanced, as water availability has increased. The food security inputs did not appear to be pivotal enough to address vulnerability. It is not possible to know if adaptive capacities were durably enhanced for Outcome 2 of the project as a whole, although participants in the evaluation stated that they knoew how to maintain either the piping or the reservoirs.

# Conclusions

The FORECCSA project was a first remarkable national learning-by-doing experience for an adaptation project with highly adaptive management to adjust implementation. This could explain why many intervention strategies were not properly recorded, systematized, or planned.

The project was highly transparent with communities and followed a participatory process. This included measures such as local diagnostic of local climate vulnerabilities, participatory definition of local adaptation measures, and transparency on budget accounts with the community. WFP replicated some apparent cost-sharing in the new project in the northern border between Colombia and Ecuador.

No discernible differences were found in the responses of men and women. That said, the small sample size of 18 in two sites cannot be defensibly analysed for gender trends.

As FORECCSA targeted landowners, the participation of young people and women was marginal.

***Sustainability:*** The fieldwork showed that sustainability of outcomes after project completion was only moderate. This result was driven by partial ownership of assets depending on the site, few resources for partnerships, and a limited impact on "decreased vulnerability." Results differed significantly between sites. Assets in Cochapata were relevant and well maintained by the community, but those in Nabón were partially unusable or abandoned.

***Resilience:*** The resilience analysis tool indicates weaker prospects for climate resilience. The resilience characteristics exhibited by the assets did not seem to influence food security in both sites or were not enough to prevent outmigration from one site. The overall strategy of the outcomes was to maintain systems (and their structures and functions) for water management and food security. Thus, the resilience of FORECCSA investments can be classified as active and passive resistance on the R-R-T typology.

***Impact:*** Increased provision of water in Cochapata addressed vulnerabilities to drought. However, water infrastructure was not able to withstand a climate shock in Nabón. Access to water was thus fully achieved in Cochapata but not in Nabón. In both sites, the investments were not large enough to allow noticeable improvement of food production or consumption.

# Lessons Learned and Corresponding Recommendations

***Lesson Learned:*** The availability of data for FORECCSA was limited as project information was not systematically recorded and stored. While data were widely available at the output level, it was more difficult to find information at the outcome level (the FORECCSA outcome sustainability survey, conducted at endline and referenced in the final evaluation, had been lost). Ex post mostly focuses on outcomes, and this survey seemed to be the only document with outcome-level data available. Therefore, the unavailability of such data was a significant quality issue for the evaluation. Further, lack of participant data led to difficulties in finding respondents. This was a major barrier, as was the lack of former or current WFP staff available or willing to accompany the evaluator to the sites.

***Recommendation:*** Improve data management systems at the IE level.

***Lesson Learned:*** The site and outcome selection took longer than anticipated, and required discussions between WFP, the evaluator, and the AF-TERG. WFP's initial selection had to be adapted by the AF-TERG to fit the evaluation requirements. Each institution used evaluation concepts (e.g. "resilience") in different ways. This conceptual language barrier between the WFP team and the AF-TERG was amplified by a Spanish-English language barrier, which further delayed the process. A similar back and forth had to be done for site selection.

***Recommendation:*** Provide better support to IEs and evaluator during outcome and site selection.

***Lesson Learned:*** Methods had to be adapted, given the reality of the field and the small number of people available e.g. the primary data-collection method was qualitative KIIs, as well as transect walks; only one FGD was held. Once in the field, it was difficult for the evaluator to find beneficiaries that were either available or willing to talk about FORECCSA.

***Recommendation:*** Allow more time to find participants and triangulate findings.

# Additional Lessons and Recommendations from the Pilot

## For Implementing Entities

***Lesson Learned:*** It was difficult to find information about the project during the ex post evaluation. Given the quantity of information generated, a better knowledge management system would also encourage greater use and utility of the project data, which would benefit ongoing and future interventions.

***Recommendation:*** Improve data and knowledge management. The IE should systematically store and safeguard information after project closure for ex post purposes and to capitalize on the lessons and information collected during the project lifecycle.

## For the Adaptation Fund

***Lesson Learned:*** While valuable sources of information, final evaluation reports were not a sufficient base for the ex post evaluation. The results framework, as evaluated, did not allow a proper evaluation of outcomes for post completion, nor did it provide sufficient data or information about possible characteristics of sustainability.

***Recommendation:*** The Fund should consider requiring its IEs to (1) demonstrate systematization and storage of the project information at completion; and (2) prepare information in a way that it is usable or easily accessible at ex post, should the Board request an ex post evaluation. For instance, the IE should make and maintain lists of surveys or participants in activities.

## For the AF-TERG on methods

***Lesson Learned:*** The training materials were available only in English, which slowed uptake and communication during the sessions. Following the training, it was difficult to identify and communicate with key informants at the local level.

***Recommendation:*** Provide future capacity-building processes for ex post evaluation and training material in the primary/official language of the country hosting the project. These measures will help increase understanding of the innovative concepts involved and AF-TERG working methods.

***Recommendation:*** Strengthen or identify local partners with the IE ahead of the ex post evaluation. This would strengthen the quality of findings and help prepare ex post fieldwork.

# ANNEX 1:
# Resilience Analysis Framework

Phase one of the ex post evaluations developed an innovative framework to assess climate resilience, as it is one of the ultimate goals of climate change adaptation. This area is pivotal to climate change adaptation yet has rarely been measured.

The resilience analysis framework covers five components:

(i) The climate disturbances (shocks and stresses)

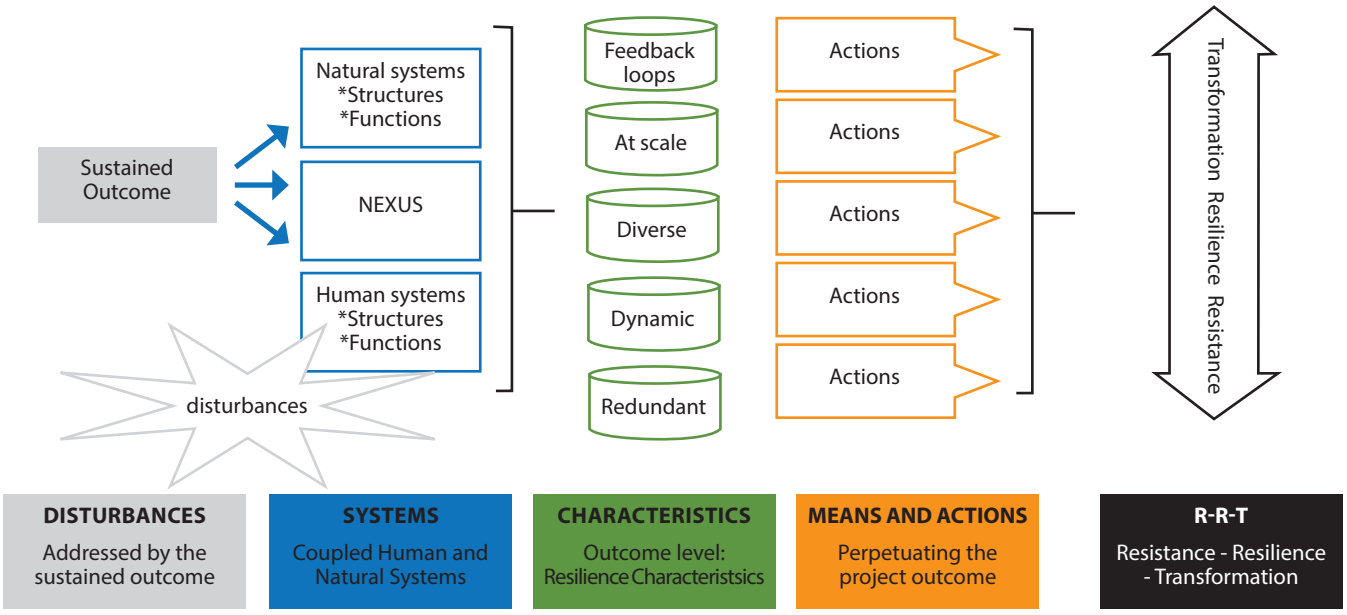
(ii) The human and natural systems (and their nexus) affected by and affecting project outcomes

(iii) The characteristics of resilience in the outcomes

(iv) The means and actions supporting outcomes (exemplifying characteristics of resilience)

(v) A typology of resistance-resilience-transformation (R-R-T) into which the overall project can be mapped based on how actions are designed to maintain or change existing structures and functions.

**FIGURE A.1: Understand ex post resilience: framing for resilience analysis**



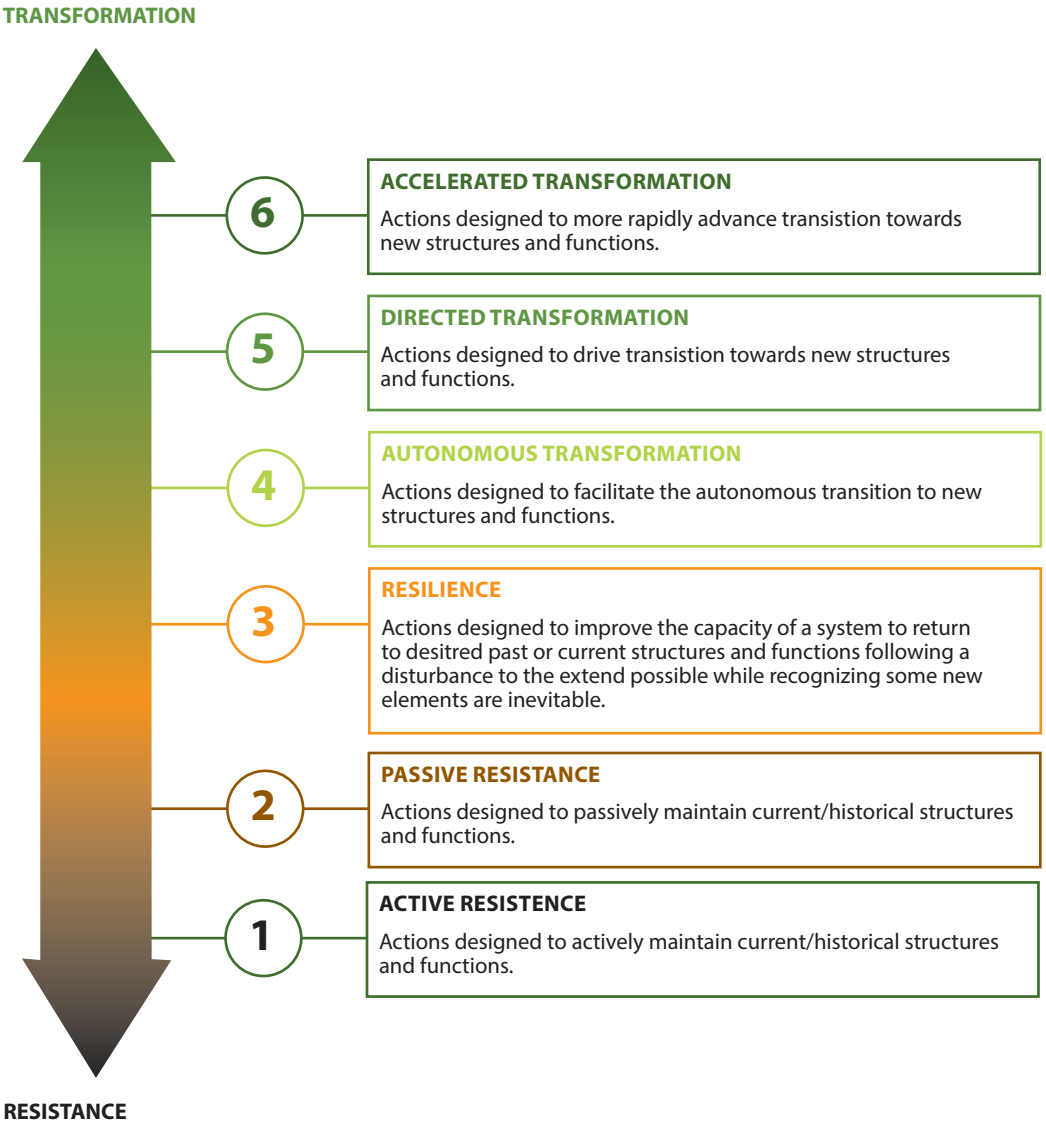
Within this structure, two analytical frameworks were suggested for use in ex post evaluations of Fund projects:

- **Resilience characteristics:** The first framework provides a set of characteristics that may be inherent to sustained outcomes to support resilience to climate disturbances. Five characteristics can be displayed by sustained outcomes in both human and natural systems, indicating how and in what ways the sustained outcomes contribute to resilience:
  - **Redundancy** (Creating a duplicate or back-up system to support resilience to climate disturbances if/when one option fails)
  - **Diversity** (Reflecting a wide and deep variety of actors and inputs working towards common goals in complexity and climate resilience)
  - **At Scale** (Providing the temporal or spatial scale needed for natural and/or human systems to maintain or change their functions and/or structures in the face of climate disturbances)
  - **Dynamism** (Demonstrating flexibility – around an equilibrium – in approach and strategy towards reaching common objectives)
  - **Continuous Feedback Loops** (Supporting communication lines, access to information or partnerships for sustainability of outcomes)

- **Resistance-Resilience-Transformation (R-R-T) Typology of adaptation actions:** The second framework can be used to categorize adaptation actions that support or bolster assets and capacities for resilience, and beyond. The R-R-T typology focuses on whether actors are passively or actively maintaining structures and functions (resistance), or whether they are seeking to fundamentally overhaul structures and functions in light of climate disturbances (accelerated transformation). At ex post, the typology allows to define where the ex post asset(s) outcome could fall, both individually and collectively. The outcome is assessed on an action-based spectrum, of six scales (Figure 2):
  - **Accelerated transformation**
  - **Directed transformation**
  - **Autonomous transformation**
  - **Resilience**
  - **Passive resistance**
  - **Active resistance**

Resilience, the third scale, can be seen as "actions designed to improve the capacity of a system to return to desired past of current structures and functions following a disturbance to the extent possible while recognizing some new elements are inevitable."

**FIGURE A.2:** Resistance - Resilience - Transformation (R-R-T scale)




Source: Peterson St-Laurent, G., Oakes, L.E., Cross, M. et al., 2021.[5]

5. Peterson St-Laurent, G., Oakes, L.E., Cross, M. et al. (2021). R-R-T (resistance-resilience-transformation) typology reveals differential conservation approaches across ecosystems and time. Communications Biology 4, 39. Available at: https://doi.org/10.1038/s42003-020-01556-2