



## IMPACT ASSESSMENT REPORT

# Republic of Colombia

Building Rural Entrepreneurial Capacities  
Programme: Trust and Opportunity  
(TOP-El Campo Emprende)

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## List of acronyms

ATE	Average Treatment Effect
ATET	Average Treatment Effect on the Treated
BP	Business Plan
COP	Colombian Peso
FGD	Focus Group Discussion
FIES	Food Insecurity Experience Scale
FRDD	Fuzzy Regression Discontinuity Design
HDDS	Household Dietary Diversity Score
HH	Household
IA	Impact Assessment
IFAD	International Fund for Agricultural Development
KII	Key Informant Interview
M&E	Monitoring and Evaluation
ODE	Office of Development Effectiveness
POs	Producer Organizations
TOP	Building Rural Entrepreneurial Capacities Programme: Trust and Opportunity
RDD	Regression Discontinuity Design
SO	Strategic Objective
ToC	Theory of Change
USD	US Dollar

## List of tables

Table 1. Group categories and conditions.....	5
Table 2. Matrix of research questions and IFAD's Economic Goal (EG), Strategic Objectives (SO), and Mainstreaming Themes (MT). .....	8
Table 3. Sample design with actual number of households surveys.....	9
Table 4. Description of impact indicators.....	11
Table 5. Characteristics of sampled households by treatment vs control. ....	15
Table 6. Program support to benefited Pos. ....	16
Table 7. POs membership and leadership .....	17
Table 8. POs activities and challenges.....	18
Table 9. TOP's impact on economic mobility.....	20
Table 10. TOP's impact on SO1 productive capacity. ....	21
Table 11. TOP's impact on SO2 Market access .....	22
Table 12. TOP's impact on resilience and adaptability climate change.....	23
Table 13. TOP's impact on nutrition .....	25
Table 14. TOP's impact on women's empowerment .....	26
Table 15. TOP's impact on financial inclusion .....	27
Table 16. TOP's impact on trust.....	28
Table 17. TOP's impact on altruism and on violence exposure. ....	30
Table 18. TOP's impact by organization levels.....	32
Table 19. TOP's impact by collective land .....	33
Table 20. TOP's impact by coca presence.....	35
Table 21. TOP's impact by conflict exposure. ....	37

## List of figures

Figure 1. Distribution of violence victims across Colombia 2000-2018 and targeting-of TOP .....	3
Figure 2. El campo Emprende (TOP) Theory of change .....	6
Figure 3. Distribution of sample design across Colombia .....	10
Figure 4. Proportion of Pos funded by municipality.....	13

# Table of Contents

Acknowledgments.....	I
List of acronyms.....	II
List of tables.....	III
List of figures.....	III
Table of contents.....	IV
1.    Introduction.....	1
2.    Theory of change and main research questions.....	3
2.1.    Background.....	3
2.2.    TOP – El Campo Emprende.....	4
3.    Impact assessment design: Data and Methodology.....	8
3.1.    Sample design.....	8
3.2.    Questionnaire and impact indicators.....	10
3.3.    Impact estimation methodology.....	12
3.4.    Qualitative methodology.....	15
4.    Profile of the project sample.....	15
4.1.    Characteristics of the sampled households.....	15
4.2.    The Status of participant Producer Organizations.....	16
4.3.    Membership and leadership.....	16
4.4.    Activities and challenges.....	17
5.    Results.....	19
5.1.    Overall impacts.....	19
5.1.1.    Economic mobility.....	19
5.1.2.    SO1: Productive capacity.....	20
5.1.3.    SO2: Market access.....	21
5.1.4.    SO3: Resilience.....	22
5.1.5.    Mainstreaming themes: nutrition, women's empowerment, and financial inclusion.....	24
5.1.6.    Project-specific theme: Trust and Altruism.....	28
5.2.    Heterogeneous impacts.....	31
5.2.1.    Heterogeneous impact by tradition of working in groups.....	31
5.2.2.    Heterogeneous impact by coca presence previous to the programme.....	34
5.2.3.    Heterogeneous impact by conflict exposure.....	36
6.    Conclusions.....	38
6.1.    General Conclusions.....	38
6.2.    Lessons learned.....	39
References.....	41
Annex 1. Qualitative Analysis.....	42
Annex 2. Maps.....	47

# 1. Introduction

The Building Rural Entrepreneurial Capacities Programme: Trust and Opportunity, abbreviated as El Campo Emprende in Spanish (and TOP in English), was implemented between 2012-2023 with financing from IFAD (43.7%), the Agricultural Ministry of Colombia (8.2%), the Spanish Fund (28.5%) and other project participants' contributions (19.6%). It intended to improve the poorest rural areas' employment, income, and living conditions, which are characterized by insecurity, inequality, and post-conflict environments. The project focused on strengthening the regions' productive associations through the development and implementation of Business Plans (BP). During its implementation, El Campo Emprende benefited over 3,486 productive associations in 203 municipalities across the country, affecting over 46,000 economically vulnerable families in Colombia.

This impact study analyses the program's effect on major economic outcomes and is conducted in line with the Results Management Framework (RMF) of IFAD's 12<sup>th</sup> replenishment period. IFAD is conducting rigorous impact assessments for 16 of its projects that are closing over 2022-2024, which are selected using regionally stratified random sampling among all projects that close during this replenishment period. The results of these 16 impact assessments will be further aggregated and projected to the overall portfolio to report on IFAD's impact effect on rural development indicators that correspond to IFAD's goal and strategic objectives.<sup>1</sup>

Colombia's rural context is often characterized by the lack of state control, precarious economic opportunities, and long-lasting inequalities. This situation has resulted in internal conflicts, illegal activities, and institutional instability, affecting thousands of farmers, and impairing rural productivity and institutional efficiency. According to the National Statistics Bureau (DANE), 12.3 millions people lived in rural areas in 2021 (24% of the national population), while 44.6% of them lived in poverty and 18.8% in extreme poverty. Rural poverty is relatively higher compared to urban poverty (37.8% and 10.3% respectively) (DANE, 2021). Thus, El Campo Emprende's context relies on the effort of national authorities to deal with the acute rural economic situation by increasing investment to generate rural development and improve the effective coordination between diverse state institutions and rural service providers.

Even though there have been relative developments in Colombia's living conditions during the last decade (the country's GDP has had an average annual growth rate of 3.4% during 2012-2022<sup>2</sup>), poverty indices in Colombia have improved relatively slowly and remain especially high in rural areas, where most of the social-tensions and illegal activities take place. Several structural factors limit the rural populations' capacity to generate sustainable and sufficient incomes, such as the low access to productive assets (land, finance, and water among others) and limited capacity-building activities to facilitate the effective use of such assets (DNP, 2010). Other factors limiting productive developments are related to the lack of a long-term strategy to promote income generation in poor-rural communities, low infrastructure levels to support market integration -especially regarding municipal roads, which are imperative for rural products' transportation into local markets-, low coverage of public and social services, and institutional instability (Perry, 2010).

El Campo Emprende sought to improve the living conditions of rural populations by supporting the formulation and implementation of business plans developed by local Productive Organizations (POs). The program had five specific objectives:

1. Increasing food security among rural communities and families exposed to poverty.
2. Facilitating rural services for fostering social and human capital accumulation.
3. Consolidating rural households' strategies for increasing financial and physical assets.
4. Planning and applying solutions for rural youth.
5. Promoting rural investments for enhancing innovation, learning, and application of knowledge.

Furthermore, the program was structured around three main components: (1) Associative social capital formation and enterprise development, (2) Development and strengthening of rural financial Assets, and (3) Knowledge management, skills, and communications.

Component 1 aimed to foster families' and productive associations' capital formation for improving rural livelihoods. The specific component's initiatives focused on enhancing food security, production, land access

<sup>1</sup> IFAD's RMF includes development indicators at multiple levels, and the IAs report on Tier II development indicators.

<sup>2</sup> World Bank, World Development Indicators. (2023). GDP per capita growth (annual %).

and management, market integration, and diminishing environmental impacts. It had three subcomponents: (1) improving food safety and productive capacity, (2) promotion and enhancement of entrepreneurship, and (3) user capacity development. The activities included support to improve productive and environmental conditions, the support<sup>3</sup> of productive associations around the territorial needs, the promotion of economic initiatives and funding of BPs with market potential, and the implementation of technical assistance in the form of workshops, in situ training, trade shows, and fairs.

The main objective of Component 2 was to strengthen the participants' income-generating activities by providing them with efficient tools to reduce their economic vulnerability. Accordingly, the component aimed to enhance access to financial services such as savings, credit, and insurance in rural areas. The implementation encompassed four sub-components: (1) financial education and related capacities -especially for households-, (2) savings incentives -including financial inclusion, and both individual and collective saving plans-, (3) obtaining insurance policies, and (4) financial innovations for sustainability -for youth groups. The activities included the funding of introductory and advanced financial education modules, the development of associative financial capacities, the provision of diverse financial learning methodologies, and the promotion of financial incentives for rural youth.

Component 3's objective was to strengthen the project's implementation processes by valuing existing skills and using communication technologies to publicize project activities and information access. For this purpose, the monitoring and evaluation of activities, and documentation of implementation lessons were promoted. Some of the component's activities included: (1) harvest of knowledge (systematization of experiences, and life stories), (2) familiarization, learning, and capacity development (assistance for women and rural youth participants, and project's staff training), (3) communication for development (information dissemination) and, (4) monitoring and evaluation (indicators and result evaluations).

The El Campo Emprende project also encompassed a gender inclusion strategy. This included actions such as seeking gender equity in the staff composition, information sharing concerning the projects' obstacles and activities among leader women, coordination with other programs for gender equity, and prioritizing women household-head groups for saving incentives, among others.

This impact assessment is designed through a direct reliance on the project's targeting criteria. As part of the targeting criteria, the associations that applied to El Campo Emprende were assigned a score between 0 and 100 points that evaluated a set of criteria. These criteria include the percentage of women members, the percentage of young members, and the number of socio-economic vulnerability conditions by member. Then, within each municipality, the associations were ranked based on this score, and only nineteen<sup>4</sup> top-scoring associations were included in an eligible list to get funding. Later, the eligible list associations were funded until the available funding was exhausted within each municipality, with 72% of the organizations receiving money.

The implementation of the project's targeting strategy provides a unique opportunity to use a Regression Discontinuity Design (RDD) that compares the associations that had a score that was just enough to be eligible for funding to the associations that obtained a score just below the ones that were supported (and barely missed the opportunity to be supported). This method provides a control group that is likely to be very similar to the ones that benefited from the program and greatly contributes to the reliability of the results. To apply the RDD methodology, in-depth questionnaires at household and productive association levels were carried out between June and August 2023. Expected impacts were evaluated using the RDD method on control and treated productive association members from the 2018 and 2019 project cohort applicants on a set of indicators identified throughout the project's Theory of Change (ToC). The IA has three primary objectives: (1) estimate the project's impacts on indicators aligned with IFAD economic goal(EG), strategic objectives (SO), and mainstreaming themes (MT), (2) generate lessons learned to formulate recommendations for future project and policy design, and (3) generate methodological insights to help improve the rigor of future impact assessments.

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<sup>3</sup> In 60% of cases, the associations were not pre-existing and the interventions helped in the creation and legal registration of the institution.

<sup>4</sup> The Terms of Reference for the TOP state that only thirteen groups per municipality could receive funding. However, the Ministerio de Agricultura de Colombia included approximately six additional groups in the list of eligible candidates, anticipating the possibility of some groups dropping out.

This report unfolds as follows: Section 2, "Theory of Change and Main Research Questions," introduces the theoretical framework and key research questions. Section 3, "Impact Assessment Design: Data and Methodology," elaborates on the sample design, impact indicators and the methodology for estimating impacts. Section 4, "Profile of the Project Sample," presents detailed profiles including characteristics of sampled. Section 5, "Results," discusses overall impacts covering economic mobility, productive capacity, market access, resilience, and mainstreaming themes such as food security, women's empowerment, and financial inclusion, alongside project-specific themes like trust and altruism, followed by heterogeneous impacts. The report concludes with Section 6, "Conclusions," summarizing the findings, their implications and lessons.

## 2. Theory of change and main research questions

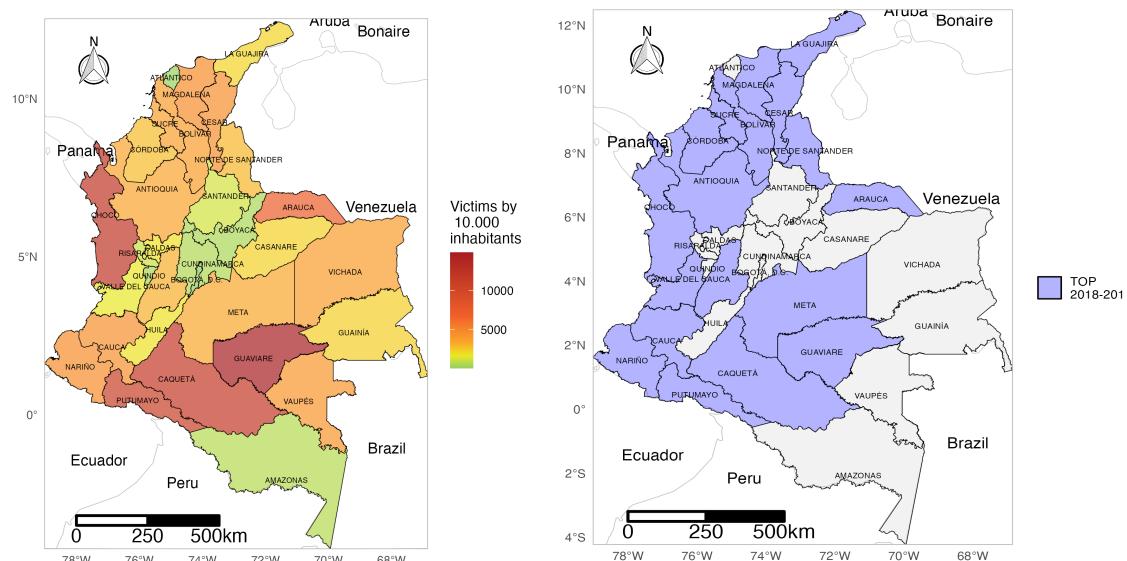
This section outlines the Theory of Change (ToC) of El Campo Emprende by focusing on the project's support to POs. The research questions and further aspects of the project's implementation, such as the targeting criteria and geographic coverage, are also explained. Essentially, the ToC is a map that outlines the expected intervention's impact by mapping the inputs, outputs, and outcomes, considering the flows between these steps and the required assumptions. Thus, unraveling the full impact story by understanding the expected implementation processes.

### 2.1. Background

In 2016, the Colombian government and the Revolutionary Armed Forces of Colombia (FARC) signed a peace agreement that ended five decades of armed conflict that resulted in the loss of more than 220,000 lives and the displacement of millions of people. This conflict left indelible scars on Colombian society as a whole and imprinted on the country's identity, affecting generations and having a significant impact on collective behavior (CEV, 2022). In this context, rural development programs play a critical role in post-conflict countries by addressing the root causes of conflict and fostering sustainable peace.

Figure 1 shows evidence that the "TOP" program was implemented in the Colombian regions more affected by armed conflict. For example, departments like Antioquia, Cauca, and Nariño, which have significant numbers of conflict victims, also have a high number of TOP participants.

Figure 1. Distribution of violence victims across Colombia 2000-2018 and targeting-of TOP.



Note: Figure 1 evidences the high coincidence between victims of violence and the presence of TOP program. The left panel illustrates the number of victims per 10,000 inhabitants averaged by department. Types of Registered Victimization Events include Terrorist Acts, Attacks, Combat, Clashes, Harassments, Threats, Crimes against Freedom and Sexual Integrity in the context of Armed Conflict, Forced Disappearance, Forced Displacement, Homicide, Landmines, Improvised Explosive Devices, Kidnapping, Torture, Recruitment of Children and Adolescents into Activities Related to Armed Groups, Forced Abandonment or Dispossession of Lands, Loss of Movable or Immovable Property, Physical and Psychological Personal Injuries, Confinement, Restriction of Mobility, Extortion, and Illegal Detention. We summed all registered victimization events from 2000 to 2018 (note that the same person can be counted multiple times if he or she is a victim of multiple acts of violence). Data source: <https://www.unidadvictimas.gov.co/es/publicacion-de-datos-abiertos/>. The right panel displays all departments of Colombia in purple if they have at least one TOP project in the department between 2018 and 2019 (the period of the study).

On the other hand, in the Colombian context there is a notable correlation between the presence of illicit crops and armed conflict. Departments like Putumayo, Guaviare, and Nariño not only have high numbers of conflict victims but also significant figures for illicit crop cultivation and forced eradication. This correlation underscores the complex relationship between illicit crop production and armed conflict, suggesting that these issues are often intertwined in the most affected regions.

Taking into account that the TOP program focuses on various aspects of rural life, including economic development, women empowerment, and resilience against climate change and violence, it is to be expected that the strategic focus ensures that aid is directed where it is most needed. The aim of the program is also to maximize its impact by aligning it with the specific needs and opportunities of each territory, thereby contributing to both immediate relief and long-term stability.

## 2.2. TOP – El Campo Emprende

POs (either already existing or formed for the project) that wanted to apply to El Campo Emprende were required to present a BP for which they wanted to receive technical and financial assistance. The application could be performed in one of three categories according to the group's composition (Table 1): i) the “General Category” (for which a minimum of 11 members per group were required, 27% of them women and 18% young<sup>5</sup>), and ii) the “Youth Category” (a minimum of 9 members per group were required, 27% of them women and all young)<sup>6</sup>. Furthermore, POs could propose to implement activities in any of the project's productive categories: artisanal production, agricultural and livestock production, agricultural and livestock processing/transformation, rural tourism, rural services, and green businesses.

Applications were then evaluated by the Ministry of Agriculture according to pre-defined vulnerability criteria that considered the group members' economic and social conditions. These criteria included the participation of young members, women members, exposure to violence, and poverty indices, among others. The best POs per municipality (cohorts varied across municipalities and years) received support to structure their BPs around the territorial needs, characteristics, and market opportunities. Subsequently, local committees (by their Spanish acronym CLEAR<sup>7</sup>s) were responsible to select a fixed number of POs per municipality for the program's implementation. Structured non-chosen groups remained on a waiting list in case eligible groups dropped from the program. Finally, before receiving project support, selected groups were required to contribute an economic counterpart equivalent to 10% or 20% of the project's cash support (depending on the group's category) to ensure buy-in and incentives for active engagement. The total cash grant given per group was COP 40 millions on average, approximately equivalent to US\$13,530 in 2018 (using the yearly average exchange rate).

<sup>5</sup> The definition of “young” for the project's application encompasses members with an age ranging between 18–24 years old.

<sup>6</sup> Additionally, in a “Women Category” (a minimum of 9 members per group were required, all women and 27% young) was created, but in the year after the call that we evaluate in this project.

<sup>7</sup> Comités locales de evaluación y asignación de recursos.

Table 1. Group categories and conditions.

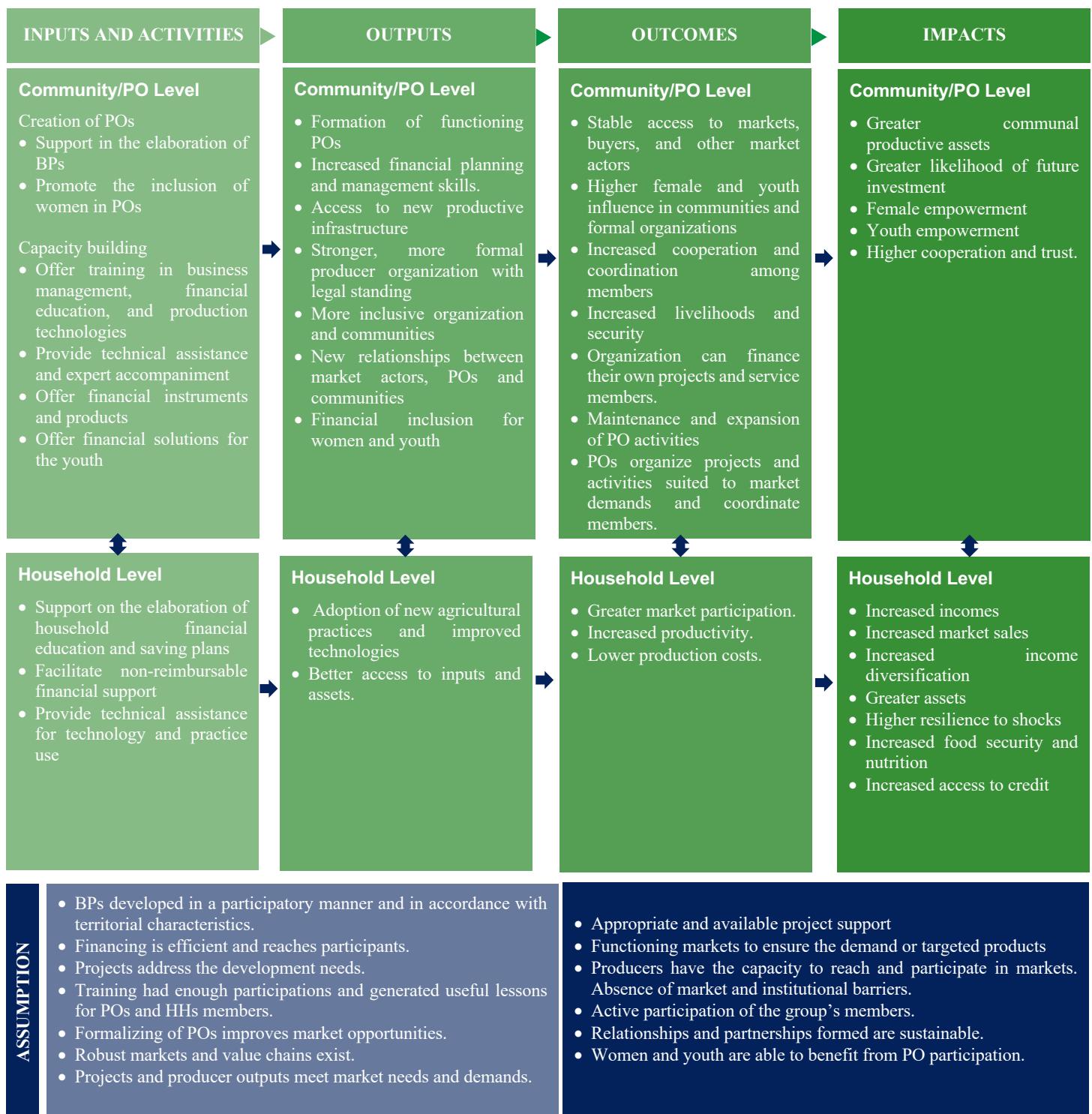
	General Category	Youth Category
Members per group	Minimum 11	Minimum 9
% rural women	Minimum 27%	Minimum 27%
% rural youth	Minimum 18%	100%
Financial grant	US\$ 13,530	US\$ 13,530
Economic counterpart	US\$ 2,700	US\$ 1,350
Total, BP	US\$ 16,230	US\$ 14,880

Note: Financial values correspond to US dollars at the average exchange rate in 2018.

The inputs and activities component of the ToC (Figure 3) lists the support provided to POs as part of El Campo Emprende. As mentioned, the project involved both financial and non-financial assistance. The latter was mainly used to strengthen PO's productive capacities by increasing the group's physical capital. This implied the purchase of various inputs and goods to be used for production purposes, for example, constructing cattle barns. These grants could also be used to provide specialized training by local experts, for instance, hiring a veterinarian to give training on how to vaccinate cattle.

Furthermore, the POs received constant non-financial support, such as technical assistance and human capital formation. This included training in business management, financial education, and production technologies, as well as technical assistance and continuous expert support. They also benefited from improved financial instruments and products. Moreover, at the household level, financial education, saving plans, and assistance in production were provided. El Campo Emprende also provided support through territorial teams and local service providers to guarantee that POs were effectively accompanied throughout the implementation of their BPs. Participant groups were required to fulfill a series of commitments: (1) participating in the project's activities -financial education, technical training, and associativity-, (2) establishing saving plans, and (3) social accountability through local comptrollers (Contralorías Sociales).

Figure 2. El campo emprende (TOP) Theory of change.



These inputs and activities were expected to lead to a set of outputs. At the community and association level, the formulation of functioning POs was expected, with members that have improved production knowledge, social capital, physical capital, and management skills. At the same time, the POs were expected to be stronger and more inclusive with improved relations with market actors and communities. Also, women were expected to be actively involved in the project's participation and to benefit from financial inclusion (particularly for female-headed households), whereas groups under the youth category were expected to receive improved financial instruments. At the household level, improved knowledge of technologies and practices was expected, as well as access to inputs and assets.

Regarding the project outcomes at the community level, the establishment of POs was expected to promote the generation of stable access to markets, with improved coordination between POs, buyers, and other market actors. Past studies have shown that membership in participatory associations can encourage social capital formation (Isham, 2002), promote technology adoption (Manda et al, 2020) and improve bargaining power (Markelova et al., 2009). Additionally, better production skills and inclusive organizations are expected to develop improved livelihoods, and socio-economic security, and increase the cooperation between communities and PO members. Also, because of the project's inclusion criteria, the participation and influence of women and youth in their communities and formal organizations were expected to increase. Finally, at the household level, productivity increases were expected to foster the adoption of new agricultural practices, enhance market participation, and increase marketing skills.

Ultimately, these outcomes are foreseen to translate into higher-level impacts. Thanks to an expansion of POs activities better suited to market demands, higher quantity and quality of products sold are expected to create a virtuous cycle in which the group's success drives the participation of its members, who at the same time, use the project's knowledge to improve their household production and living conditions. Hence, the various impacts reinforce each other and are intended to increase income, income diversification, market sales, assets, access to credit, resilience, and food security and nutrition at the household level. Complemented with technical assistance, this should translate into higher household resilience to both economic and environmental shocks. Finally, better-quality market participation and financial inclusion, are expected to translate into women's and youth's empowerment by promoting their bargaining power and physical capital. In fact, previous projects in East Africa and India (Hendricks, 2019), Ethiopia (Oxfam, 2012), and the Philippines (Arslan et al., 2018) have shown that group membership and active inclusion can enhance women's empowerment indicators.

The achievement of the outputs, outcomes, and impacts rests on multiple assumptions. First, adopting improved practices and technologies depends on the project's support being appropriate and available. Plus, functioning markets are necessary to ensure sufficient market demand for the targeted products (with effective value chains for incorporating production improvements), and the lack of market barriers is essential for producers to participate in market transactions. The products/outputs of POs need to meet the market needs, and the availability of functioning roads and social stability is essential. Regarding the PO's social structure, the active participation of the group's members along POs objectives, and sustainable partnerships formed within the associations and with community actors, are imperative factors for the project's success. Finally, women and youth participants must be able to benefit from PO participation and receive similar returns to other members to guarantee their inclusion and active group participation.

Table 2 below lists the research questions that will be answered by the IA of El Campo Emprende project, organized along IFAD's economic goal, strategic objectives, and mainstreaming themes.

Table 2. Matrix of research questions and IFAD's Economic Goal (EG), Strategic Objectives (SO), and Mainstreaming Themes (MT).

Did the project [...] among participants?	Economic goal: Economic mobility	SO1: Productive capacity	SO2: Market access	SO3: Resilience	Mainstreaming Themes: gender, youth, nutrition
Increase productive capacities, income and assets	X				
Increase resilience to climate shocks				X	
Improve dietary diversity and food security					X
Improve access to markets and other rural infrastructures			X		
Reduce vulnerability				X	
Increase women's decision making and control of income/asset					X
Increase social capital and inclusion					X

### 3. Impact assessment design: Data and Methodology

This section describes the sample design, questionnaires, and outcome variables. It also elaborates on the methodology that will be used for estimating the project's quantitative attributable impacts, as well as its main identification assumptions. The statistical methodology employed is a Fuzzy Regression Discontinuity Design (FRDD) with an Instrumental Variable (IV) approach.

#### 3.1. Sample design

The sample design is based on and facilitated by El Campo Emprende's implementation structure. Four different calls for participation were executed in 2014, 2018, 2019, and 2020 that invited POs to prepare BPs and apply for project support. We used 2018's and 2019's calls to identify treated and control groups (which were surveyed in 2023) for a couple of reasons. First, the project has a very slow start and supported a very small number of POs in 2014. It was restructured with revised and strengthened implementation criteria in 2018 and most investments happened after that. Moreover, the time lapse between the 2014 call and the data collection is considered too long to capture the needed information for the IA. The POs that received support during the 2018 and 2019 calls are expected to avoid this problem and provide sufficient time lapse between participation and data collection to estimate average project impacts. The POs that received support after the 2020 call, on the other hand, would not have had enough time for all impact to materialize, especially considering the fact that they would have been significantly affected by the COVID19 pandemic restrictions. Furthermore, in the monitoring and evaluation data provided by the Ministry of Agriculture, only the calls implemented in 2018 and 2019 included all information needed from all applicant groups (those selected and not selected), which is essential for our strategy to find a reliable counterfactual. Finally, through these calls, 2,674 associations in 96 municipalities applied to the program, representing a significant sample for choosing treated and control associations.

Sample size calculations for household-level questionnaires determined that covering 2,460 surveys would give us sufficient power to detect a minimum 15.3% impact on the Gross Farm Income variable (more details on power calculations can be found in the IA Plan (Martinez-Gonzales et al., 2023). Once the POs to be sampled were identified using the RDD approach, the households to be surveyed were randomly selected among the full list of PO members. The sample design was stratified by two PO-level factors: the proportion of women and a poverty proxy.<sup>8</sup> Additionally, 354 PO-level questionnaires (applied to association leaders), 12 Focus Group Discussions (FGD) with individuals involved in the project's implementation, and 15 Key Informant Interviews (KII) were conducted.

In total, we selected 354 groups in 42 municipalities, corresponding to 177 control and 177 treatment groups (Table 3). On average, we chose 4 treated and 4 control POs per municipality. The logic of the RDD approach relies on selecting treated and control groups (POs in our case) right around the cut-off point of selection/targeting criteria. The cut-off point is the number of POs selected per each municipality based on available resources. The methodology relies in the assumption that the POs that were right above the cut-off point and were selected to be participants can be compared to the POs that barely missed this opportunity as they are very similar to each other along many observable and unobservable characteristics. It is important to note that the score threshold used to determine the eligibility of POs varied across territorial units. The calls for participation in 2018 selected the top 11 POs in each municipality, while the calls in 2019 selected the top 13 POs, which were determined by the availability of funding to support groups. The availability of control groups under the Youth Category was limited, as the best 3 youth groups per municipality in 2018, and 4 groups in 2019, were selected regardless of their rank among the other categories. Thus, from the 354 selected groups, only 24 correspond to the Youth category (on average 1.5 treated/control POs per municipality).

The spread of our sample described in Table 3 compares through number of treated and control groups in the different municipalities. Moreover, the spatial distribution of the overall sample is depicted in Figure 3.

Table 3. Sample design with actual number of households surveys.

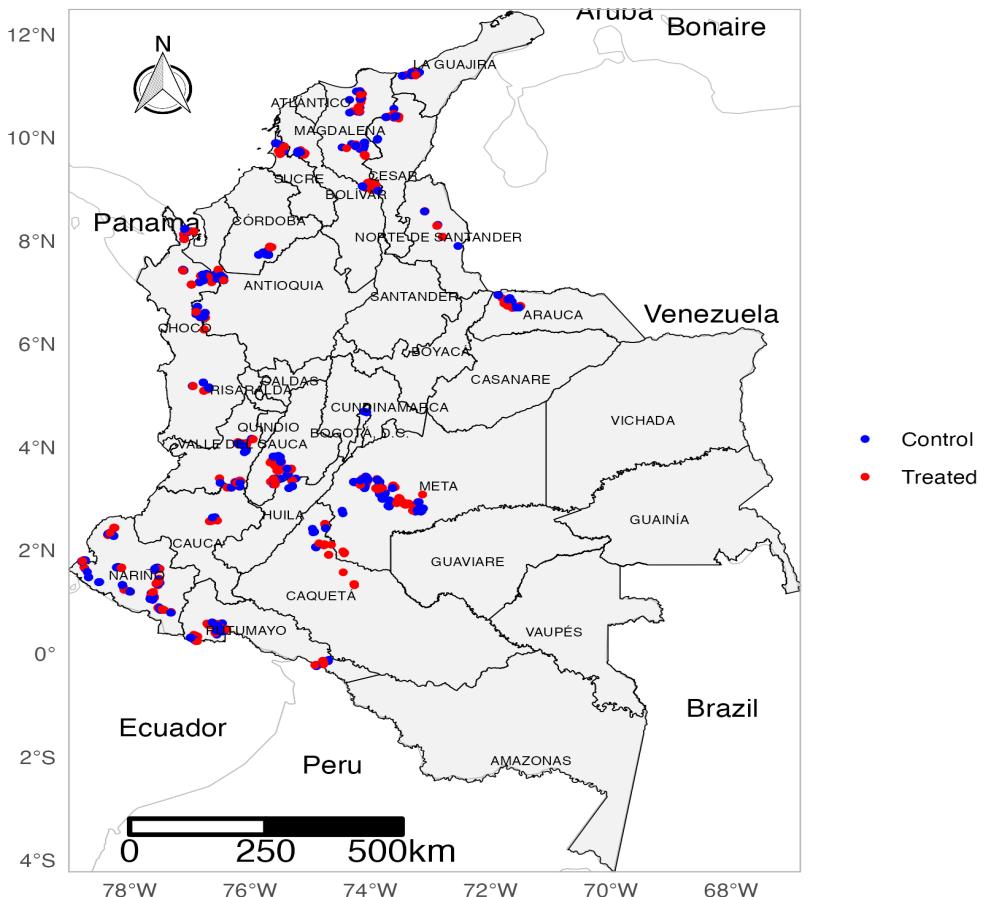
	Treated	Control	Total
N. Municipalities	42	42	84
N. Groups	177	175	352
N. Households*	861	1345	2206
Avg. Score	29.5	21.8	7.7

\* The total number of surveys conducted was 2,468. Here we only included the number of households in the analysis after data cleaning and adjustments for the RDD. Removed surveys correspond to participants in the youth category because all of them were treated.

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<sup>8</sup> We used the median of the SISBEN, which is a multidimensional poverty score used in Colombia to focalize public policy.

Figure 3. Distribution of sample design across Colombia.



### 3.2. Questionnaire and impact indicators

Both a household and group questionnaire were administered using the CAPI Software *Survey Solutions*. Data collection was carried out by the survey firm SEI. The survey was conducted between June and July 2023.

The full list of impact indicators is presented in Table 4. All monetary values refer to annual values for the prior 12 months to the survey collection, and all crop questions refer to the 2022/2023 agricultural season.

Table 4. Description of impact indicators.

Indicator	Description	Unit
<b>Economic Goal (EG)</b>		
Gross household income per capita	Total gross income is based on the method developed by the team of the Rural Income Generating Activities (RIGA) project, which aggregates value of production plus cash income to make the income of rural households comparable across countries. The sources of income are crop production, livestock production, self-employment activities, wage employment, transfers (private and public) and other income sources in the last 12 months.	Million Local Currency Unit (LCU or COP)
Gross income from crop production per capita	It is the sum of the value of sales of crop produce, the value of sales of by-products and the value of own production consumed (production excluding by losses and gifts) in the last 12 months.	Million LCU
Gross income from fish, livestock & livestock products (live, slaughter & products) per capita	It is the sum of the value of sales of fish, livestock, the value of sales of slaughtered livestock, the value of sales of by-products (including milk and other dairy products), the value of own consumption of slaughtered livestock and the value of own consumption of by-products in the last 12 months.	Million LCU
Gross transfers (private and public) per capita	The sum of gross private transfers (remittances, transfers from individuals) and public transfers (pensions, social transfers)	Million LCU
Household asset index	Index of durable assets calculated using principal component analysis (PCA) and normalized from 0 to 1. Durable assets include TV set, air conditioner, sewing machines, refrigerators, washing machine, vaccum cleaner, smart phones, cars, and computers.	Index 0-1
Household's agricultural asset index	Index of agricultural assets calculated using PCA and normalized from 0 to 1. Agricultural assets include hand hoes, sprayer, ox plough, ridger cultivator, motorised pump, grain mill, tractor / tiller, livestock stall poultry cage, barn (storage house, granary) boats.	Index 0-1
Livestock assets index (tropical livestock unit)	Index of livestock assets calculated by converting livestock numbers to a common unit. Livestock assets include number of cattle animals owned, number of sheep owned, number of goats owned, number of horses owned, number of donkeys owned, and number of poultry animals owned.	Continuous
<b>Productive capacity (SO 1)</b>		
Total value of crop production per ha	The total value of the harvested quantity of cultivated crops, valued at the market price in the last 12 months. Per hectare value is obtained by dividing this value by the total hectares of harvested land.	Million LCU/ha
Total agricultural inputs cost	The total value of production inputs, including purchased and non-purchased quantities. This includes labor costs, and costs of fertilizers, fungicides, pesticides, herbicides, and seeds.	Million LCU
<b>Market access (SO 2)</b>		
Market participation for crops	This variable takes the value 1 if household sold crops in the last 12 months and 0 otherwise.	Binary
Market participation for fish and livestock meat	This variable takes the value 1 if household sold fish or livestock meat in the last 12 months and 0 otherwise.	Binary
Annual value of crop sales	Total revenues from crop sales in the last 12 months.	Million LCU
Annual value of livestock sales (milk, other dairy, live animals, meat, and other livestock products)	Total revenues from sales of all livestock activities (milk, other dairy, live animals, meat, and other livestock products) in the last 12 months.	Million LCU

Share of crop sales in total crop production value	Share of crop sales in total crop production value expressed between 0 and 100	Percent 0-100
Share of fish and livestock sales in total value of production	Share of fish and livestock in total production value expressed between 0 and 100	Percent 0-100
<b>Resilience (SO 3)</b>		
Gross income diversification (Gini Simpson index)	It is equal to $1 - \sum \alpha_i^2$ where $\alpha_i$ is the gross income share from the $i$ th household income source in the last 12 months.	Index 0-1
Number of experienced shock	This variable sums the number of reported experienced shocks in the last 5 years.	Continuous
Household recovered from worst climatic shock (Yes=1 No=0)	This variable takes the value 1 if household reported to be at the same level or better than before experiencing the worst climatic shock (drought/frost/flood) and 0 otherwise.	Binary
<b>Food security and nutrition</b>		
Household Dietary Diversity Score (HDDS)	A 0-12 scale index (from 0 low dietary diversity to 12 high dietary diversity) based on the consumption of 12 food groups in the past week.	Index 0-12
Food Insecurity Experience Scale (FIES)	A 0-8 scale index (from 0 full food secure to 8 full food insecure) based on eight questions regarding food insecurity in the last 12 months, also adopted by SDGs (2.1.2).	Index 0-12

### 3.3. Impact estimation methodology

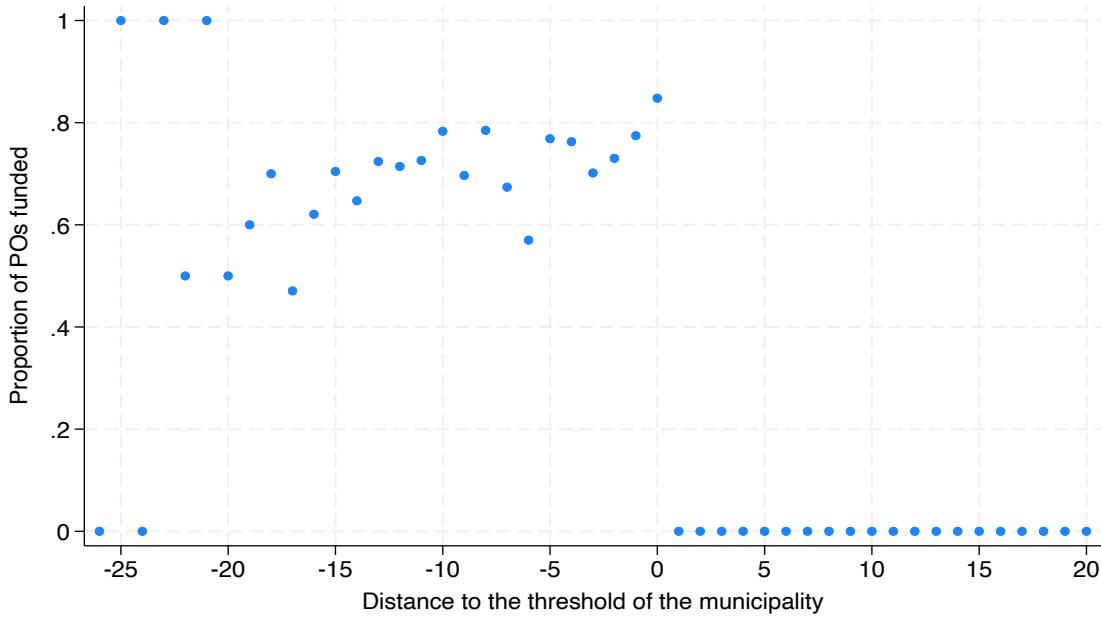
To assess a project's impact on a specific indicator for a population sample, one would have to know the indicator's values with and without the project implementation at the same point in time for all the analyzed individuals. The average differences between these two values would be equivalent to the Average Treatment Effect on Treated (ATET). However, only one of these two scenarios is observed (in this case, the project is implemented), so the indicator's values in the absence of the project (called counterfactual) are hypothetical. Hence, quasi-experimental estimation models are based on the selection of a control group that is as similar as possible to the treatment group in terms of probability of receiving treatment based on observable characteristics. The comparison between the treated and chosen counterfactual group gives the project's average treatment effects (Austin and Stuart, 2015).

The Fuzzy Regression Discontinuity Design (FRDD) is a quasi-experimental method that uses a regression discontinuity to estimate causal effects by choosing comparable treatment and control groups. It is mainly used when the assignment of treatment depends partially (but not completely) on a continuous variable (called running variable) and when there is a discontinuity in the outcome indicator around the threshold that determines whether a unit receives the treatment or not. The main advantage of this strategy is that, although treated and non-treated individuals may be different in observed and unobserved characteristics (the treatment's assignment is non-random), individuals very close to the running variable's threshold should be very similar and hence comparable. They may slightly differ in the running variable (and its correlates), but we can control for this difference in the regression. Therefore, the outcome differences between these individuals are attributable to the treatment, and not to other factors.

In the context of El Campo Emprende, we use the fact that POs applicants received a score based on a set of socioeconomic vulnerability criteria. As part of the targeting criteria, the POs that applied to El Campo Emprende were assigned a score between 0 and 100 points that evaluated a set of criteria. These criteria include the percentage of women and young members, as well as the number of socio-economic vulnerability conditions per member. The terms of reference for the TOP program stipulated that funding would be available only for the top thirteen POs per municipality. However, anticipating potential dropouts, the Ministerio de Agricultura de Colombia selected approximately six additional POs per municipality.

Within each municipality, the Ministerio de Agricultura de Colombia ranked the POs based on these scores. On average, the nineteen top-scoring associations were selected as potential candidates for funding, and 72% of eligible organizations were funded. Then, these POs were funded until the available resources within each municipality were exhausted. Figure 4 illustrates the proportion of funded POs in relation to their distance from the municipality's threshold.

Figure 4. Proportion of POs funded by municipality.



Note. This graph represents the proportion of funded POs (Y-axis) in relation to the normalized distance from the eligibility threshold of the municipality (X-axis). The normalization accounts for varying cutoffs used to determine the eligible group in each municipality. Negative values on the X-axis indicate a position below the score required to be eligible for funding, while positive values indicate a position above it. POs with a negative score for funding are those considered eligible. Points at zero on the Y-axis represent municipalities where no POs were funded despite being eligible.

Since only a portion of POs was chosen to receive the program's support per municipality, this provides a unique opportunity to compare the POs that had a score just enough to receive support (treated group), with the POs that obtained a score just below and barely missed the opportunity to be supported (control groups). As both sets of POs obtained analogous scores, they are very similar to each other in terms of the project's targeting criteria except for the fact that some received the treatment. Hence, given that the treatment assignment is almost random near this score threshold, predetermined socio-economic characteristics are similar between both groups.

We particularly use an FRDD approach since the selection as potential candidates for funding of program is highly correlated with but not necessarily equivalent to the reception of the treatment (with a correlation coefficient of 0.80 around the cutoff). This is mainly explained by the fact that not all eligible POs (POs that received assistance to structure their BPs) received the treatment. For instance, the program identified a larger number of eligible groups than the available funding could support, anticipating the possibility of some groups dropping out. Moreover, some POs dropped out of the program for personal or security reasons.

So far, the comparison between treated and control groups for a specific outcome would be equivalent to the effect of the program's eligibility (Intention To Treat Effect – ITTE) and not to the treatment effect (Average Treatment Effect – ATE). To approximate the ATE better we employ an Instrumental Variable (IV) approach to instrument the treatment participation. Formally, we estimate an IV two-stage regression. In the first stage, we regress the actual participation in the project, i.e. treatment, on the instrumental variable (the structuring of BPs) and the eligibility criteria:

$$T_i = \alpha_0 + \gamma D_i + \alpha_1 x_i + \alpha_2 x_i * D_i + \varepsilon_i \quad (1)$$

$T_i$  is a dichotomous variable indicating whether household  $i$  belongs to POs funded by TOP – El Campo Emprende, whereas  $D_i$  indicates if the PO of which the household  $i$  belongs was included in the eligible list to

get funding from TOP – El Campo Emprende. Hence, the coefficient  $\gamma$  indicates the probability jump of being treated upon the score's threshold. This is the proportion of list eligible and treated households. The continuous score variable (running variable) determining the program's eligibility is  $x_i$ . Its inclusion allows us to control for a linear relationship between the score and the treatment probability, while its interaction with the treatment eligibility ( $x_i * D_i$ ) allows for flexibility in this relation over both sides of the threshold. Finally,  $\alpha_0$  is the intercept (constant) and  $\varepsilon_i$  is the error term denoting the effect of non-accounted factors on  $T_i$ .

Having estimated the equation (1), we use the predicted value of  $\widehat{T}_i$  to determine the effect of the treatment compliance over the set of outcome indicators ( $y_i$ ) defined in Table 4:

$$y_i = \beta_0 + \tau \widehat{T}_i + \rho_1 x_i + \rho_2 x_i * D_i + \rho \vec{c}_i + u_i \quad (2)$$

The inclusion of the instrumented treatment  $\widehat{T}_i$  in equation (2) enables us to determine the coefficient  $\tau$ , which captures the impact of receiving the treatment (rather than eligibility) on the outcomes. Similarly, the inclusion of  $x_i$  allows us to control for the relation between the score and the outcome, while its interaction with the  $D_i$  allows for flexibility in this relation over both sides of the threshold. Moreover,  $\vec{c}_i$  is a vector of control variables,  $\beta_0$  is the intercept (constant) and  $u_i$  is the error term (all non-accounted factors affecting  $y_i$ ). The included control variables are: head of household characteristics such as sex, age, and literacy; household member characteristics including whether the household member is the head of the household, sex, total number of individuals in the household, and total number of female members in the household; controls at the group level encompass the head of group, number of members, and number of female members.

Since the RDD uses an arbitrary treatment assignment near the score threshold, it provides an exogenous treatment variation, which makes it one of the most robust estimation strategies. However, due to the fact that it compares individuals near the threshold, which are a small portion of all applicants, the estimated treatment effect corresponds to a Local Average Treatment Effect (LATE) and not an Average Treatment Effect on the Treated (ATET). Hence, we cannot know how the treatment affected individuals with lower/higher scores. Moreover, as not all eligible individuals were treated, the estimated effect reflects the program's impact on compliant individuals only. Although this does not pose any problems for the internal validity of the results (referring to the unbiasedness of estimates), it affects the external validity (the extrapolation of the effects to other contexts).

The main identification condition for the application of the FRDD methodology is that in the treatment's absence, any individual would have had the same outcome if they were located close enough to any side of the score's threshold. Formally, if we denote  $Y_{0i}$  as individual  $i$ 's outcome, had the treatment not been implemented,  $D_i$  as a dichotomous variable indicating the treatment,  $x_i$  as the running variable's score,  $\bar{x}$  as the score threshold, and the up/down limit rows indicating whether individual  $i$  approaches the score threshold from the left/right side. This assumption is equivalent to:

$$\lim_{x_i \uparrow \bar{x}} (Y_{0i} | D_i = 0) = \lim_{x_i \downarrow \bar{x}} (Y_{0i} | D_i = 1)$$

In essence, this means that control and treatment individuals located close enough to the score's threshold would have had the same outcomes in the absence of the project. Equivalently, this implies that the only factor differentiating the RDD-selected treated and control groups is the treatment. We partially test the identification condition by analyzing the following factors:

- The absence of other programs sharing the same eligibility criteria as the score used by the project.
- The absence of factors affecting individuals on one side of the threshold only.

Other RDD assumptions can be verified by testing:

- The non-manipulation of the score near the threshold.
- The local continuity in predetermined variables near the threshold, such as gender and age.

We will discuss and check formally the identification assumption and other RDD assumptions and conduct other robustness checks in the results section. This helps us ensure the accuracy of the estimation strategy.

### 3.4. Qualitative methodology

In addition to the quantitative causal analysis, qualitative fieldwork was conducted to identify mechanisms illustrating the reasons behind some of the results. This work included 15 semi-structured interviews with territorial coordinators and 12 focus groups involving 102 individuals from 50 associations. The interviews and focus groups centered on topics such as the evaluation of technical assistance and training, value chains and market access, perceptions of youth and women's participation, perceived impacts, and recommendations. A detailed analysis of the key aspects highlighted by participants and territorial coordinators, who were responsible for implementing the program in each region, can be found in Annex 1.

## 4. Profile of the project sample

In this section, various household and POs characteristics are presented. Descriptive statistics on household composition, education, livelihoods, women's empowerment, and food consumption are presented. This along with benefited PO characteristics regarding the grant's usage, membership, leadership, activities, and challenges, provides an overview of the project participants, enriching the interpretation of results presented in the next chapter.

### 4.1. Characteristics of the sampled households

Table 5 contrasts the sampled program's eligible and control households on a set of characteristics. These characteristics are grouped around: (1) household composition and education, and (2) Asset ownership. It is important to note that the difference between treated and control mean values doesn't correspond to the treatment effects since we use the groups in the eligible list to get funding instead of funded groups. In Chapter 5, we control for compliance rates to isolate the impact effects.

Table 5. Characteristics of sampled households by treatment vs control.

Indicator	Treatment	Control
<b>Household composition and education</b>		
Household Size	3.87	3.82
Dependency ratio	64.85	62.74
Female household head	32.47	27.48
Household member with a disability	1.1	1.11
Education of household head in years	7.97	7.53
School enrolment rate (% of school-age household members)	86.81	86.96
<b>Asset ownership</b>		
- Productive asset index (2018)	1.09	1.19
- Household asset index (2018)	1.64	1.6
- Livestock asset index (2018)	0.79	0.83

Details of household composition and education suggest that treatment and control households are relatively similar. The resemblance of both groups regarding predetermined characteristics is a first insight that the identification assumption is likely to be fulfilled. As can be observed in Table 5, the household size and dependency ratios are very similar among both groups, although the proportion of households led by females is slightly lower for controls (27.48%) than for treated (32.47%). In addition, the percentage of households that reported having any members with disability was 64.85% for treated and 62.74% for controls -defined as any

individual having trouble seeing, speaking, walking, hearing, concentrating, dressing, and washing<sup>9</sup>. Finally, the household head's average education years and enrolment rates were very similar (around 8 education years and 87% enrolment rates for both groups). Regarding asset index, the Household asset index was higher for treated households (1.64) than for controls (1.60).

## 4.2. The Status of participant Producer Organizations

Table 6 shows that the average grant size provided to POs is US\$ 13,530. In addition to the grant, members of the POs contribute an average of US\$ 2,700 towards their business plans. This member contribution is halved to US\$ 1,350 for young POs. On the other hand, the most common grant uses were related to the acquisition or improvement of equipment (164), property, and infrastructure (109). This suggests that a significant portion of POs invested in improving their physical capital, which is a fundamental factor in achieving the expected impacts. Furthermore, 35% of the groups claimed to use the grant to hire services (veterinarian, miller, etc), which could have stimulated local economies. Further uses were related to recruiting and training new members, and the “other” category, which is probably associated with the acquisition of agricultural inputs and production-related costs.

Table 6. Program support to benefited Pos.

Indicator	Value
Grant size (\$)	US\$ 13,530
Member contribution for business plan (\$)	US\$ 2,700*
<b>Grant uses (frequency):</b>	
- Acquisition/improvement of equipment	164
- Acquisition/improvement of property or infrastructure	109
- Hiring of Services (e.g. Veterinarian, Miller, etc.)	73
- Training new members	23
- Recruiting new members	12
- Other	93

Note: This is the member contribution for POs in the general category. For young POs, the contribution was US\$1,350. The sample size is 176. The dollar sign (\$) corresponds to US dollars at the average exchange rate in 2018.

## 4.3. Membership and leadership

Table 7 presents details on the PO's composition and leadership roles. The average number of members was around 12 for both treated and control organizations. This number is higher than in 2018 (around 13 members per group), although it is still in accordance with the program's target range. Moreover, the primary explanations given for members leaving POs in both treated and control groups were related to natural reasons (relocation, passing away, etc.), unhappiness with the group's organization, unhappiness with incomes generated by the group, and involvement in other activities. The majority of these are imperative factors related to teamwork challenges that have affected the group's cohesion in previous programs. Other reasons for members leaving were migration to other groups, dismissal due to lack of participation, and incapacity to pay membership fees.

Regarding reasons for leaving Pos, it's noteworthy that treated groups have a higher frequency of members leaving due to natural reasons, such as relocation this category includes members who left the POs due to circumstances beyond their control, such as relocating to a different area or passing away. Additionally, some members may have left because they were dissatisfied with how the PO was organized and operated. This could be related to issues such as internal conflicts, ineffective leadership, or disagreements over decision-making

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<sup>9</sup> The questions were adopted from the Washington Group on Disability Statistics, see: <http://www.washingtongroup-disability.com/washington-group-question-sets/short-set-of-disability-questions/>

processes within the group. This could indicate that the program's support may have led to an increase in the overall membership of the PO, including older members who might have left due to natural causes.

Table 7. POs membership and leadership.

Indicator	Treatment	Control
<b>Number of members 2022 (average):</b>		
Total	11.95	14.25
Male	5.51	7.43
Female	6.44	6.82
Age 15-28	2.92	2.91
<b>Number of members 2018 (average):</b>		
Total	12.17	11.99
Male	5.36	6.23
Female	6.80	5.76
Age 15-28	3.72	3.30
<b>Reasons for leaving POs (frequency):</b>		
- Natural reasons (relocated, passed away, etc.)	62	56
- Unhappy with group's organization	53	40
- Unhappy with income from group	49	33
- Wanted to be involved in other activities	43	38
- Expelled due lack of participation	38	19
- Changed to new group	30	25
- Expelled as unable to pay membership fee	14	9
<b> Democratically elected leader (%)</b>	73.9	65.9
<b>Leadership roles held by women (%)</b>	92.6	89.4

Note: Sample size 176 treatment groups and 179 control groups.

Lastly, when it comes to leadership within the POs, the data indicates that treated POs have a higher percentage of democratically elected leaders (73.85%) compared to control POs (65.92%). This suggests that the program may have facilitated a more democratic and inclusive leadership structure within the organizations. Moreover, leadership roles held by women are significantly higher in treated POs (92.61%) compared to control POs (89.38%), indicating that the program has been successful in promoting women's leadership roles within these rural organizations. Given the social context in which the program was implemented and that these roles are selected democratically, these shares indicate high proportions of women's participation in the groups' activities.

#### 4.4. Activities and challenges

Table 8 provides a breakdown of the types of activities engaged in by POs in both the treatment and control groups. The most common activity in both groups is "No production", with frequencies of 84 and 108 for the treatment and control groups, respectively. This is followed by "Production/processing of livestock" and "Production/processing of crops." Interestingly, the treatment group has a higher frequency of engaging in the "Trade of agricultural products" (18 vs. 10) and "Trade of nonagricultural products" (9 vs. 1), suggesting that the program may have had some impact on diversifying income-generating activities.

Table 8 also indicates that a higher percentage of POs in the treatment group have received loans since 2018 compared to the control group (4.54% vs. 1.67%). This could imply that the program has been somewhat successful in facilitating access to financial resources, aligning with its objective of consolidating rural households' strategies for increasing financial and physical assets.

Table 8. POs activities and challenges.

Indicator	Treatment	Control
<b>Activities (frequency)</b>		
- No production	84	108
- Production / processing of livestock (cattle, sheep, guinea pigs, etc...)	44	37
- Production / processing of crops	21	23
- Trade of agricultural products	18	10
- Production / processing of fish	11	9
- Trade of nonagricultural products	9	1
- Crafts and other manufactures	4	3
<b>Received loan since 2018 (%)</b>	4,54%	1,67%
<b>Main challenges (frequency)</b>		
- Elevated input costs	126	115
- Climate stress factors	70	57
- Lack of road infrastructure	75	47
- Buyer identification	48	37
- Members coordination	62	62
- Delayed payments	28	24
- Meeting established quality requirements by buyers	41	64
- Others	123	109

On the other hand, the most frequently cited challenge for both groups is “Elevated input costs”, followed by “Climate stress factors” and “Lack of road infrastructure”. An important result is that around half of the surveyed groups reported a lack of productive activities throughout the year 2022. This was harshly influenced by the Covid-19 outbreak and the elevated input costs, identified as the biggest POs’ difficulty. However, the treatment group reports these challenges at a higher frequency, particularly the lack of road infrastructure (75 vs. 47). Thus, both factors increased considerably the costs of production and impaired POs’ capacities. Additionally, this could indicate areas where the program needs to focus its efforts to achieve its objectives more effectively.

Finally, the control group has a higher frequency of challenges related to “Meeting established quality requirements by buyers” (64 vs. 41), while “Members coordination” is equally challenging for both groups (62 vs. 62). This could suggest that while the program may have helped in some areas, it has not significantly addressed the issue of quality requirements and internal coordination within the POs.

## 5. Results

In this section, we present the findings from the estimation of Equation 2, which employs the FRDD to evaluate the causal impact of the 'TOP-El Campo Emprende' program on various dimensions of rural development. We will systematically delve into the outcomes across key indicators, starting with economic mobility, followed by an assessment of productive capacity, market access, and resilience. Furthermore, we will explore the broader societal impacts by examining indicators related to gender, youth, nutrition, and trust and sociability. This structured approach allows us to provide a comprehensive understanding of the 'TOP-El Campo Emprende' program's multifaceted influence on rural communities and their overall well-being.

Before delving into the results of our estimations, we will first address the fundamental assumptions that underpin the RDD methodology. First, as far as we know there is no evidence of alternative programs sharing the same eligibility criteria as the score used by the TOP program, thereby eliminating the risk of treatment effect confounding from external programs. Second, there is no evidence to suggest the presence of factors that would selectively affect individuals on only one side of the eligibility threshold, ensuring that the treatment and control groups are comparable in the absence of the intervention. Third, the scoring process for eligibility is systematic and based on a set of predefined socioeconomic vulnerability criteria, negating the possibility of score manipulation near the threshold.

### 5.1. Overall impacts

#### 5.1.1. Economic mobility

Table 9 shows the TOP program's effectiveness in improving the economic well-being of rural communities and productive groups. Specifically, the program has substantially increased gross total income per capita by approximately 34%<sup>10</sup>, equivalent to 1.6 million of COP (USD 387.4), and net total income per capita by approximately 48%, equivalent to 1 million of COP (USD 449.7). The results also show that gross income from enterprise activity increased significantly by approximately 46%, highlighting the strong focus of the program on entrepreneurship. In addition to income, the program has also significantly affected other financial aspects. Gross income from other sources increased by about 79%, statistically significant at the 5% level. This could be the dominant channel through which the participants receive additional income for their involvement with POs, for example, through cooperative sales or shared resources that lead to new income-generating activities. The fact that approximately 60% of the POs were explicitly created to apply for the program suggests that the participants gained access to new income-generating activities they were previously excluded from. This is a crucial aspect, as it not only indicates an increase in income but also suggests a structural change in how income is generated, making it more sustainable and less dependent on traditional or single channels.

Qualitatively, the impacts are mirrored and expanded upon. Enhanced productive capacity was a common theme, with participants appreciating the program's practical workshops and support in project formulation, as noted in multiple focus groups. This hands-on approach has broadened economic participation, especially in rural areas, leading to socio-economic stability. The program has been pivotal in technical and business skills development, significantly benefiting regions like Sierra Nevada and Cauca by enhancing production capacity and establishing sustainable business models.

On the other hand, the TOP program has also shown a positive impact on total wages earned, with a statistically significant increase of 35.5%. In line with this, the Focus Groups Discussions (FGD) revealed that one of the most significant impacts of the TOP program occurred in job creation. This achievement is particularly noteworthy because it extends beyond the immediate participants to affect the broader community positively.

Table 9 also shows the impact of the TOP program on various asset indicators, including the 'Productive asset index,' 'Household asset index,' and 'Livestock asset index'. The table also explores the program's effect on land ownership and the number of crops cultivated per household. The results show a statistically significant increase of 0.26 standard deviations in the 'Household asset index' which represents 0.26 times the standard deviation of the control group. Importantly, this significance remains even when controlling for baseline asset levels and various household characteristics in our regressions. This suggests that the program has not only been successful

<sup>10</sup> We interpret ATET on inverse hyperbolic sine transformation as effects in percentage. Technically it should be interpreted in log points, and reading it as a percentual change is correct for small variations but less so as the ATET increases.

in increasing immediate income but also in enabling households to make long-term investments in assets. The acquisition of assets like machinery, as mentioned in the FGD, can lead to increased production efficiency and product quality, setting the stage for sustainable economic growth. The increase in both income and assets paints a promising picture of the program's comprehensive impact on economic betterment.

As noted by specific focus groups, value addition and market access have seen transformative impacts, particularly enhancing local economic activities and expanding market reach. The program's support has led to the adoption of new marketing strategies and expansion into new markets, with remarkable success stories among avocado and bean producers. This indicates a clear impact on economic status and productive capacity, supported by training that has enabled participants to improve production and engage more effectively with markets.

A crucial aspect often mentioned in interviews, that could explain the increase in income among participating households is their greater ability to manage the restrictions imposed during the pandemic lockdown. Unlike the control group, various focus groups reported that they maintained or even increased their production during this period. This resilience not only indicates better preparation and adaptability in the face of global health crises but also underscores the effectiveness of the TOP in strengthening the productive and economic capacities of rural households.

Table 9. TOP's impact on economic mobility.

Indicator	ATET	C. Mean	Observations
<b>Income</b>			
Gross total income per capita	34.04**	9.06	2206
Net total income per capita	48.32**	7.04	2206
Total wages earned	35.53*	1.88	2206
Gross income from crop production	-3.07	1.16	2206
Gross income from fish and livestock production	7.32	0.97	2206
Gross income from enterprise	46.23*	0.53	2206
Gross income from transfers	8.01	0.72	2206
Gross income from other sources	79.43***	0.14	2206
<b>Endline Assets</b>			
Productive asset index	0.02	1.33	2206
Household asset index	0.26**	2.5	2206
Livestock asset index	0.00	1.53	2206
Tropical livestock units	30.69	1.98	2206
Own land in ha.	32.34	4.37	2206
Number of land/plot per household	-7.12	0.8	2206
Household has land/plot (Yes=1, No=0)	-0.08	0.64	2206

Note: Impacts are reported in percent change for continuous variables, in raw coefficient for dummy (to be multiplied by 100 to obtain the impact in percentage points) and in standard deviation for indices. Counterfactual mean indicates potential outcome participant households would have had if they had not benefited from the programme and it is expressed as the inverse hyperbolic sine transformation for monetary variables, per cent for the dummy variables and original unit/score for all indices. Asterisks indicate the level of statistical significance: \* at 10 per cent; \*\* at 5 per cent; \*\*\* at 1 per cent.

### 5.1.2. SO1: Productive capacity

Table 10 presents several indicators to assess the impact of the TOP programme on the productive capacity of its participants. The table is divided into two main categories: Productivity metrics and Cost metrics. No statistically significant changes are observed in any of the variables listed in the table. This lack of statistical significance could be attributed to the impact of the COVID-19 pandemic, which increased the cost of inputs. This was one of the main concerns expressed by interviewees during the study.

Table 10. TOP's impact on SO1 productive capacity.

Indicator	ATET	C. Mean	Observations
<b>Productivity</b>			
Total value of agricultural production	0.57	2.18	2206
Total value of agricultural production per ha.	6.81	1.51	2206
Total value of crop production	-6.02	1.21	2206
Total value of crop production per ha.	1.01	0.87	2206
Net income from crop production	19.03	0.5	2206
<b>Costs</b>			
Total agricultural input costs	-5.95	0.84	2206
Cost of organic fertilizers	23.16	0.07	2206
Cost of inorganic fertilizers	10.27	0.16	2206
Cost of pesticides	17.86	0.06	2206
Cost of herbicides	-26.99	0.09	2206
Cost of fungicides	-10.65	0.04	2206
Cost of seeds	-18.97	0.12	2206
Cost of labor	-2.61	0.62	2206

Note: Impacts are reported in percent change for continuous variables, in raw coefficient for dummy (to be multiplied by 100 to obtain the impact in percentage points) and in standard deviation for indices. Counterfactual mean indicates potential outcome participant households would have had if they had not benefited from the programme and it is expressed as the inverse hyperbolic sine transformation for monetary variables, per cent for the dummy variables and original unit/score for all indices. Asterisks indicate the level of statistical significance: \* at 10 per cent; \*\* at 5 per cent; \*\*\* at 1 per cent.

### 5.1.3. SO2: Market access

In Table 11, the focus is on assessing the impact of the TOP program on market access, which is divided into two primary categories: sales and market participation. Sales indicators do not show any significant improvement. Successfully increasing sales in markets presents new challenges related to legal norms and taxes that can limit revenue growth.

From a qualitative perspective, the improvement in market access was significantly highlighted, with systematic praise for the program's support in facilitating access to new markets. Moreover, the training provided has been pivotal not only in enhancing the production of participants but also in enabling them to embrace new marketing strategies, penetrate new markets and improve knowledge about market price variability. Specifically, the successful entry into the "mercados campesinos" program and the understanding of the public procurement law, which mandates that a percentage of the state's food purchases must come from small rural economies, have been frequently cited as significant achievements. This targeted support has empowered POs to systematically access new market opportunities and has been instrumental in promoting the economic sustainability of rural communities. Additionally, the program has provided essential tools for knowledge and adherence to food production standards, facilitating the entry of producers into more formal markets. This emphasis on compliance with production norms has further empowered POs, enabling them to systematically access new market opportunities.

Qualitative results also brought to light some indirect effects that may not be entirely beneficial. POs faced challenges related to their lack of legal constitution, which hindered their ability to participate in formal programs and access benefits. After joining TOP, they managed to legalize their association, which opened new challenges and opportunities, such as tax obligations and complexities in commercialization but improved income. The COVID-19 pandemic's impact was a significant hurdle for many associations, affecting their stability and planned activities. Some even considered liquidation due to these unforeseen challenges.

FGDs also highlighted the importance of understanding the dynamics of an association for its successful operation. Issues like lack of motivation in sales, unfamiliarity with market price variability, and the challenges of forming associations with individuals not connected to their social or familial environment were identified as key obstacles. These insights underscore the need for comprehensive support and training to improve the stability and performance of the associations. The program has been effective in this regard, contributing to easier commercialization, higher incomes, and greater independence for the associations.

Table 11. TOP's impact on SO2 Market access.

Indicator	ATET	C. Mean	Observations
<b>Sales</b>			
Total value of sales- fish, crops, livestock and self-employment	20.60	2.32	2206
Annual value of fish and livestock sales	11.34	0.68	2206
Annual value of crop sales	2.94	0.82	2206
Annual value of livestock sales	-41.81	0.24	2206
<b>Market participation</b>			
Share of agricultural sales in total agricultural production value	7.32	0.28	2206
Share of livestock and fish and products sales in total prod value	-1.28	0.26	2206
Market participation – sales of fish, livestock, crop (Yes=1, No=0)	0.004	0.72	2206
Market participation for crop (Yes=1, No=0)	-0.02	0.39	2206
Market participation for fish and livestock (Yes=1, No=0)	-0.04	0.38	2206

Note: Impacts are reported in percent change for continuous variables, in raw coefficient for dummy (to be multiplied by 100 to obtain the impact in percentage points) and in standard deviation for indices. Counterfactual mean indicates potential outcome participant households would have had if they had not benefited from the programme and it is expressed as the inverse hyperbolic sine transformation for monetary variables, per cent for the dummy variables and original unit/score for all indices. Asterisks indicate the level of statistical significance: \* at 10 per cent; \*\* at 5 per cent; \*\*\* at 1 per cent.

#### 5.1.4. SO3: Resilience

Table 12 provides insights into the TOP program's impact on resilience and adaptability to climate change. One of the most striking findings is the significant reduction in the number of total shocks experienced by the participants in -16.48% with respect to average of 2.27 shocks in the households of the control group. This reduction is mainly in the number of climate shocks, which decreased by 26.12%. Given that there is no reason to expect that actual shocks differ between treatment and control groups, this reduction in the number of shocks experienced can be attributed to the participants' increased resilience, where they may perceive fewer events as "shocks" because they are better equipped to manage and mitigate their impact. This effect is consistent with the TOP's objectives in terms of increased resilience to environmental challenges, a crucial aspect for rural communities often at the frontline of climate change impacts.

Table 12. TOP's impact on resilience and adaptability climate change.

Indicator	ATET	C. Mean	Observations
<b>Income diversification:</b>			
Gross income diversification (Gini Simpson Index)	-0.02	0.36	2206
<b>Number of shocks experienced:</b>			
Number of shocks experienced	-16.48	2.27	2206
Number of climate shocks experienced	-26.12**	0.76	2206
Number of non-climate shocks experienced	-11.62	1.51	2206
<b>Ability to recover from shocks:</b>			
Ability to recover from shocks (Yes=1, No=0)	-0.04	0.51	1760
Ability to recover from climate shocks (Yes=1, No=0)	-0.04	0.47	1195
Ability to recover from non-climate shocks (Yes=1, No=0)	-0.05	0.39	1443
<b>Impact of COVID-19:</b>			
Income from livestock affected by COVID-19 (Yes=1, No=0)	-0.08**	0.22	2206
Income from crops affected by COVID-19 (Yes=1, No=0)	-0.05	0.25	2206
Livestock activities affected by COVID-19 (Yes=1, No=0)	-0.02	0.29	2206
Crop activities affected by COVID-19 (Yes=1, No=0)	-0.04	0.27	2206

Note: Impacts are reported in percent change for continuous variables, in raw coefficient for dummy (to be multiplied by 100 to obtain the impact in percentage points) and in standard deviation for indices. Counterfactual mean indicates potential outcome participant households would have had if they had not benefited from the programme and it is expressed as the inverse hyperbolic sine transformation for monetary variables, per cent for the dummy variables and original unit/score for all indices. Asterisks indicate the level of statistical significance: \* at 10 per cent; \*\* at 5 per cent; \*\*\* at 1 per cent.

Table 12 also highlights the program's effectiveness in mitigating the economic repercussions of the COVID-19 pandemic. Specifically, there is a significant reduction of 8 percentage points in the probability of losing income from livestock because of the COVID-19 pandemic. This impact is aligned with household perceiving a reduction in the number of shocks experienced, and it is particularly relevant given the TOP program's mission to support various rural entrepreneurship forms, including livestock farming. It appears that the program's comprehensive approach, including financial education, savings incentives, and support for business plans, contributed to economic resilience during unprecedented challenges like the pandemic.

Qualitatively, a consensus emerges across focus groups about the program's pivotal role in boosting economic resilience and adaptability, particularly highlighted during the COVID-19 pandemic. The promotion of cooperative work, savings initiatives, and financial literacy has fundamentally strengthened economic management and crisis response capabilities among participants. Upon analyzing the reasons for increased resilience, interviewees and territorial coordinators emphasized that one of the central elements contributing to greater resilience was the program's fundamental characteristic of promoting teamwork. This emphasis on collaborative efforts has led to increased social capital, which is closely related to resilience. The program's focus on fostering strong community ties and collective problem-solving approaches has not only enhanced the ability to withstand economic and environmental shocks but has also cultivated a supportive network that bolsters overall community resilience.

Moreover, the ability of associations and community members to adapt to pandemic-induced challenges, such as movement restrictions and market access limitations, showcases the program's success in fostering adaptability. Notably, communities demonstrated significant adaptability by maintaining operations and navigating through the pandemic, utilizing virtual platforms for sales and communication, which indicates a robust improvement in their capacity to adapt to sudden changes and sustain livelihoods under challenging conditions.

The emphasis on community support and unity, as seen in initiatives like communal kitchens (*olla comunitaria*) and the sharing of production (such as eggs, beans, and animals) among associates, has been essential in building a supportive environment, crucial for resilience during tough times. This collective approach to overcoming

hardships, which extends to sharing resources not only among the program's associates but also with other community members, exemplifies the program's effectiveness in fostering a sense of community and mutual support, which is fundamental for resilience.

### **5.1.5. Mainstreaming themes:nutrition, women's empowerment, and financial inclusion**

The TOP project aimed to improve the livelihoods of families in extreme poverty in rural areas, in part through improvements in food security and nutrition. The impacts of the project on food security and nutrition indicators are presented in Table 13. Although the TOP program targeted food insecure households, the results show no significant effects of TOP on the Food Insecurity Experience Scale (FIES) score.

Table 13 also provides insights into the TOP program's impact on food consumption and the Household Dietary Diversity Score (HDDS). The HDDS is measured as the sum of dummies for the consumption of twelve groups of foods. On average, households on the control group consumed 9.9 groups of foods. The TOP program demonstrates a statistically significant increase of 0.45 standard deviations in HDDS, which represents 0.26 times the standard deviation of the control group, which is a strong indicator of improved nutrition. The results also suggest that the TOP program had a positive impact on the consumption of specific food groups. The consumption of white tubers and roots increased by 5 percentage points. Additionally, meat and milk product consumption increased significantly by 8 and 12 percentage points, respectively. The increased consumption of meat, milk, and milk products could be associated to previous results about the increase in revenues previously analyzed.

The results align well with the project's specific objectives to increase food security and nutrition and improve the quality of life for rural families. The reduction in the number of shocks experienced, as indicated in previous tables, may also relate to this improvement in food security, as families may be better equipped to maintain a diverse diet even in the face of challenges.

Qualitative findings from FGD reinforce these outcomes, presenting a strong consensus on the program's contribution to stabilizing food resources and enhancing food security, especially evident during the pandemic. Dietary diversity within the TOP program has notably improved due to the active involvement of participants in projects such as pisciculture, chicken rearing, and egg production. This engagement has provided families with direct sources of nutrition and additional income streams, significantly enhancing their nutrition. The distribution of chickens exemplifies the program's success in integrating livestock initiatives. This approach not only offers immediate nutritional benefits but also contributes to long-term sustainability by providing families, particularly those led by women, with a steady supply of food and income.

Importantly, the project's focus on women has led to direct improvements in household food conditions, granting them access to essential resources needed to enhance their families' dietary needs. This strategy underscores a critical insight: programs that promote rural development with a focus on women can reinforce nutritional improvements, as women often play a decisive role in determining the nutritional levels of the family. By empowering women within these communities, the program has effectively leveraged their pivotal position in managing household diets, ensuring that the benefits of increased food security translate directly into better nutrition for all family members.

Table 13. TOP's impact on nutrition.

Indicator	ATET	C. Mean	Observations
<b>Subjective food insecurity:</b>			
Worried about food (Yes=1, No=0)	-0.02	0.77	2206
Unable to eat healthy and nutritious food (Yes=1, No=0)	0.00	0.72	2204
Ate only a few food (Yes=1, No=0)	-0.02	0.79	2205
Skipped meals (Yes=1, No=0)	-0.01	0.58	2204
Ate less food than wanted (Yes=1, No=0)	0.01	0.69	2204
Run out of food (Yes=1, No=0)	-0.04	0.4	2205
Hungry but did not eat (Yes=1, No=0)	-0.03	0.47	2204
<b>Consumption:</b>			
Cereals (Yes=1, No=0)	0.00	0.99	2206
White tubers and roots (Yes=1, No=0)	0.05*	0.93	2204
Vegetables (Yes=1, No=0)	0.00	0.98	2206
Fruits (Yes=1, No=0)	0.06	0.77	2206
Meat (Yes=1, No=0)	0.08**	0.85	2206
Eggs (Yes=1, No=0)	0.02	0.91	2204
Fish and other seafood (b)	0.02	0.48	2203
Legumes, nuts and seeds (Yes=1, No=0)	0.05	0.82	2206
Milk and milk products (Yes=1, No=0)	0.12***	0.67	2204
Oils and fats (Yes=1, No=0)	0.01	0.92	2205
Sweets (Yes=1, No=0)	0.00	0.95	2206
Spices, condiments, and beverages (Yes=1, No=0)	0.02	0.71	2204
<b>Food security:</b>			
HDDS	0.45**	9.98	2206
Food Insecurity Experience Scale Score	-0.15	4.56	2206

Note: Impacts are reported in percent change for continuous variables, in raw coefficient for dummy (to be multiplied by 100 to obtain the impact in percentage points) and in standard deviation for indices. Counterfactual mean indicates potential outcome participant households would have had if they had not benefited from the programme and it is expressed as the inverse hyperbolic sine transformation for monetary variables, per cent for the dummy variables and original unit/score for all indices. Asterisks indicate the level of statistical significance: \* at 10 per cent; \*\* at 5 per cent; \*\*\* at 1 per cent.

Promoting women empowerment is one of the key objectives of IFAD. Table 14 provides a comprehensive overview of the TOP program's impact on a range of indicators from income and sales to decision-making and asset ownership. The results show that the program had a statistically significant positive impact of 45.16% on female wage income in non-agricultural employment. Other indicators related to income are positive, but not statistically significant.

Additionally, the FGD findings further enrich these quantitative results. For example, women in some POs were consistently active in the project and often brought their children to meetings, indicating a family-oriented approach to enterprise. The FGD also revealed that women felt empowered, with increased confidence and autonomy in decision-making. They also gained valuable experience and skills, contributing to their constant and committed focus on their activities. The training in finance and accounting was particularly noted as valuable, enhancing their ability to manage money at both the enterprise and household levels.

Additionally, women's involvement in leadership and administrative roles marks a systemic shift towards recognizing and valuing women's contributions in organizational and financial management. Their engagement in labor-intensive tasks and organizational responsibilities signifies a broader trend towards active participation, leadership, and increased responsibility within their communities. This shift is further evidenced by the consensus among focus groups on the importance of including women in productive activities and decision-making processes, challenging initial reservations around their participation.

In other words, women earn more, participate more in enterprises, feel more empowered, gain valuable skills, and influence the next generation through active and consistent participation. The program has contributed to breaking down traditional gender roles, as evidenced by the positive impact on dynamics within groups, where women's participation has been described as a significant advancement towards gender inclusion.

Table 14. TOP's impact on women's empowerment.

Indicator	ATET	C. Mean	Observations
<b>Income:</b>			
Female gross income	16.82	1.34	2073
Female crop income	2.04	0.50	2073
Female wage income	30.45	0.54	2073
Female wage income in agricultural employment	-17.87	0.12	2073
Female wage income in non-agricultural employment	45.16*	0.42	2073
Female other income	18.97	0.05	2073
Female transfer income	24.45	0.36	2073
Female enterprise income	31.09	0.17	2073
<b>Sales:</b>			
Female total sales	-1.48	0.71	2073
Female value of livestock sales	-37.73	0.17	2073
Female crop sales	7.33	0.37	2073
<b>Productivity:</b>			
Output per ha in female-operated land (Pesos/hectare)	10.61	0.18	2073
<b>Female participation in decision making:</b>			
Female participation in household decision-making (Yes=1, No=0)	0.01	0.76	2073
Female participation in income generation (Yes=1, No=0)	0.01	0.72	2073
Female participation in enterprise activity (Yes=1, No=0)	0.05	0.24	2073
Female participation in sales activity (Yes=1, No=0)	-0.04	0.41	2073
Female participation in crop activity (Yes=1, No=0)	0.01	0.23	2073
<b>Share of income:</b>			
Proportion of total income under female decision-making	-4.33	0.36	2073
Proportion of sales value under female decision-making	-6.73	0.50	2073
Proportion of enterprise income under female decision-making	5.40	0.24	2073
<b>Assets:</b>			
Female ownership of durable assets	-0.26	0.33	2073

Note: Impacts are reported in percent change for continuous variables, in raw coefficient for dummy (to be multiplied by 100 to obtain the impact in percentage points) and in standard deviation for indices. Counterfactual mean indicates potential outcome participant households would have had if they had not benefited from the programme and it is expressed as the inverse hyperbolic sine transformation for monetary variables, per cent for the dummy variables and original unit/score for all indices. Asterisks indicate the level of statistical significance: \* at 10 per cent; \*\* at 5 per cent; \*\*\* at 1 per cent.

Financial inclusion was an important focus of the TOP program, as it was a key mechanism to facilitate the development of business plans. Table 15 presents the impacts of the TOP program on several indicators of financial inclusion. Although various indicators of financial inclusion are positive, they are not statistically significant. Only the likelihood of having a loan rejected is statistically significant, and its reduction by 3 percentage points reflects a positive impact of the program. The lack of statistically significant effects in other variables can be better understood when considering the types of training and assistance received by the groups. The FGD show that while the training covered essential topics like financial management, savings, livestock management, and veterinary care, the feedback from the associations indicates that the training sessions were not comprehensive enough and lacked ongoing technical support.

First, the training sessions were often described as too short and sometimes conducted late into the program. This could have limited the participants' ability to absorb and implement the knowledge fully, affecting the program's impact on financial inclusion metrics like bank account ownership, savings, and loan applications. Secondly, the training was often limited to legal representatives, leaving other members needing more crucial information. This could have led to a lack of collective understanding and action, which might explain the absence of a statistically significant impact on loan applications and approvals.

Another factor to consider is the common distance to access any formal bank for many of the participants. This can explain why even those who received adequate training may not have been able to access the financial system: they are facing a different constraint, which relates to the physical access to banks. It is also possible that participants made progress in other, more informal forms of financial inclusion such as savings groups. Hence a recommendation relevant to the future implementation of the program is to adapt the type of financial training to what is available (formal only when there are banks close enough) and a recommendation for future evaluations is to broaden the perspective of financial inclusion to (non-predatory) informal forms of savings as well.

Table 15. TOP's impact on financial inclusion.

Indicator	ATET	C. Mean	Observations
Financial inclusion <sup>11</sup> (Yes=1, No=0)	0.01	0.63	2206
Had a bank account (Yes=1, No=0)	0.03	0.55	2206
Had savings during 2022 (Yes=1, No=0)	0.02	0.16	2206
Applied to loan (Yes=1, No=0)	-0.04	0.3	2206
Loan received (Yes=1, No=0)	-0.03	0.24	2206
Loan rejected (Yes=1, No=0)	-0.03*	0.06	2206
Number of loans applied (a)	-14.96	0.29	2206
Number of loans rejected (a)	-56.47	0.06	2206
Number of loans received (a)	-13.34	0.24	2206

Note: Impacts are reported in percent change for continuous variables, in raw coefficient for dummy (to be multiplied by 100 to obtain the impact in percentage points) and in standard deviation for indices. Counterfactual mean indicates potential outcome participant households would have had if they had not benefited from the programme and it is expressed as the inverse hyperbolic sine transformation for monetary variables, per cent for the dummy variables and original unit/score for all indices. Asterisks indicate the level of statistical significance: \* at 10 per cent; \*\* at 5 per cent; \*\*\* at 1 per cent.

<sup>11</sup>Proportion of those with some form of financial inclusion: having a bank account, savings, or having applied for credit.

### 5.1.6. Project-specific theme: Trust and Altruism

In addition to the observed effects on economic mobility, productive capacity, market access, and resilience, the 'TOP-El Campo Emprende program also aimed to strengthen key components of social capital among POs. We evaluated the program's impact on building trust and promoting altruism among community members. These elements are crucial for the sustainable development of organizations as they enhance collaboration and social cohesion, which are vital for the long-term success of any community initiative.

Table 16 shows the impact of the TOP program on trust in various dimensions, particularly in organizational settings. The table shows that significantly less participant household believe most people would try to be fair (a decrease of 9 percentage points for the treatment group), and have less trust in organizations such as: national government (-9 percentage points), churches (-7 percentage points), banks (-4 percentage points), ONG's (-7 percentage points) and women's organizations (-11 percentage points). Additionally, there is a decrease in the number of organizations that people believe in and in the number of people who manifest trust in at least one organization, which fell by 4 percentage points.

Table 16. TOP's impact on trust.

Indicator	ATET	C. Mean	Observations
<b>Trust Index:</b>			
Trust Organizational Index	-0.10	0.01	2206
Trust Individual Index	-0.08	0.02	2206
<b>Trust:</b>			
Believe most people would try to be fair (Yes=1, No=0)	-0.09**	0.46	2039
Trust in family (Yes=1, No=0)	-0.01	0.89	2206
Trust in neighbors (Yes=1, No=0)	-0.03	0.53	2206
Trust in known people (Yes=1, No=0)	0.05	0.56	2206
Trust in unknown people (Yes=1, No=0)	-0.02	0.17	2206
Trust in churches (Yes=1, No=0)	-0.07*	0.69	2206
Trust in the army and police (Yes=1, No=0)	-0.05	0.34	2206
Trust in national government (Yes=1, No=0)	-0.09**	0.41	2206
Trust in local government (Yes=1, No=0)	-0.01	0.29	2206
Trust in political parties (Yes=1, No=0)	0.00	0.15	2206
Trust in banks (Yes=1, No=0)	-0.04**	0.44	2206
Trust in women's organizations (Yes=1, No=0)	-0.10**	0.53	2206
Trust in ONGs (Yes=1, No=0)	-0.07*	0.57	2206
Trust at least one organization (Yes=1, No=0)	-0.04*	0.91	2206
Number of trusted organizations	-17.59***	2.7	2206

Note: Impacts are reported in percent change for continuous variables, in raw coefficient for dummy (to be multiplied by 100 to obtain the impact in percentage points) and in standard deviation for indices. Counterfactual mean indicates potential outcome participant households would have had if they had not benefited from the programme and it is expressed as the inverse hyperbolic sine transformation for monetary variables, per cent for the dummy variables and original unit/score for all indices. Asterisks indicate the level of statistical significance: \* at 10 per cent; \*\* at 5 per cent; \*\*\* at 1 per cent.

These results, indicating a decline in trust towards both external entities and within the community, necessitate further investigation to comprehend the underlying causes. Trust is a challenging concept to measure, and efforts to refine this measure and replicate these results in similar projects in other countries are needed. Despite the quantitative data suggesting a decrease in trust towards external organizations (churches, banks, ONG's) and a general skepticism within the community, this does not necessarily reflect the internal dynamics of the productivity organizations created by the program.

Qualitative information on trust presents a more positive perspective on social organization and teamwork facilitated by the initiative, despite numerous challenges. It is also important to note that perceptions on this subject varied across different focus groups, reflecting a range of experiences from improvements in mutual trust

through shared struggles and collaborative efforts to issues of trust caused by internal and external threats. The diverse impacts highlight the complexity of building trust within community projects, indicating that while the program has facilitated some positive interactions, it simultaneously underscores the need for improved communication, equitable decision-making, and stronger support mechanisms.

On the positive side, FGD highlighted improvements in organization, collaboration, and social cohesion. These observations indicate that the program has successfully promoted a cultural shift towards community association and cooperative efforts. Furthermore, some groups have noted a cultural shift towards association and cooperative efforts, leading to improved project implementation and community development. This positive evaluation of teamwork has also been acknowledged as a crucial factor in enhancing resilience, especially during the pandemic, showing how collective efforts have been fundamental in navigating challenges.

However, the teamwork aspect and its influence on trust have encountered internal and external challenges. Internally, issues such as financial mismanagement and inadequate conflict resolution have arisen. Decision-making coordination, particularly regarding financial matters, has emerged as a significant internal factor affecting trust. Groups have reported disparities in member effort and disagreements over financial management, underscoring the need for clearer communication and more equitable decision-making processes. Additionally, external factors play a significant role, with some individuals being more accepting than others of adhering to the procedural and bureaucratic requirements demanded by state programs. This creates tensions, primarily because rural areas often find it challenging to comply with certain instructions and paperwork. Moreover, there's a prevailing tradition of conducting activities based on familiar practices. Despite the initial fostering of trust through collaborative and economic activities, coordinators from various regions observed that maintaining this trust was challenging due to operational and financial management difficulties.

The qualitative analysis suggests that the decline in trust may be attributed not only to internal organizational challenges but also to external threats. The trust within communities has been compromised by factors such as exploitation by external agents and extortion, as highlighted in experiences where suppliers increased costs, leveraging the state program, and in a case of extortion in an area with the presence of armed illegal groups. Additionally, specific instances where association members were defrauded, particularly in youth groups, have further strained trust levels. These challenges have impacted not only the levels of trust but also the overall cohesion and integrity of community groups.

In summary, while the TOP program has initiated positive changes towards improved social organization and teamwork, the varying degrees of trust affected by internal conflicts, financial management issues, and external threats emphasize the need for enhanced support mechanisms and training on conflict resolution. These findings suggest that building and sustaining trust effectively requires a concerted effort to address both the internal dynamics and external pressures facing rural productive organizations.

Results on the impact of the TOP program on two additional dimensions: altruism and exposure to violence were also analyzed (Table 17). The Altruism Index is an aggregate measure of various altruistic behaviors. The coefficient for this variable is negative but is not statistically significant<sup>12</sup>.

The second part of the table focuses on conflict exposure, in particular violence from armed groups. The table shows that around 52% of people in the control group were exposed to the armed conflict's violence (which confirms that the project targeted well some of the most vulnerable and exposed communities). However, none of the conflict exposure indicators are statistically significant, suggesting that the treatment does not have a discernible impact on individuals' exposure to violence.

Furthermore, the FGD participants emphasized the critical role of trust, cooperation, and teamwork in the success of an association. They frequently cited trust as a cornerstone for cooperation and healthy relationships, while also highlighting the importance of transparency, good communication, and a sense of belonging for fostering trust within an organization. Interestingly, the group-oriented nature of the projects somewhat forced individuals to work collectively, a practice that was not common in many communities. This forced collaboration may explain the deterioration of relationships between people, indicating that while the program may be succeeding

<sup>12</sup> Among the individual indicators of altruism, two variables show a statistically significant negative impact: 'Do you give up your seat on the bus for a standing stranger?' shows a statistically significant decrease of 10 percentage points, and 'Do you offer to take care of pets or plants without being asked?' shows a decrease of 8 percentage points. On the other hand, the behavior 'Do you point out a cashier's mistake when given too much change?' shows an increase of 8 percentage points among the treated.

in some areas, it faces significant challenges in building and maintaining trust within the community. These findings are pivotal for the program's long-term effectiveness and sustainability, especially if social capital and community cohesion are among its key objectives. The nuanced impact of group dynamics on trust underscores the complexity of fostering social capital, particularly in settings where community members are not accustomed to collective action.

Table 17. TOP's impact on altruism and on violence exposure.

Indicator	ATET	C. Mean	Observations
<b>Altruism and sociability:</b>			
Altruism Index	-0.08	0.02	2206
Do you exchange a bill for change with strangers? (Yes=1, No=0)	0.00	0.61	2206
Do you help strangers carry their belongings (books, packages, etc.)? (Yes=1, No=0)	-0.01	0.61	2206
Do you give rides to strangers in your car or motorcycle? (Yes=1, No=0)	-0.02	0.36	2206
Do you offer to take care of pets or plants without being asked? (Yes=1, No=0)	-0.08*	0.51	2206
Do you help strangers push their stalled cars or motorcycles? (Yes=1, No=0)	-0.02	0.78	2206
Do you give money to strangers in need (or who ask for it)? (Yes=1, No=0)	0.00	0.86	2206
Do you give up your place in line for someone else (in the supermarket, bank, etc.) (Yes=1, No=0)	-0.02	0.83	2206
Do you point out a cashier's mistake when given too much change? (Yes=1, No=0)	0.08**	0.45	2206
Do you offer help to people with disabilities or the elderly? (Yes=1, No=0)	0.00	0.90	2206
Do you give directions to strangers on the street? (Yes=1, No=0)	0.02	0.84	2206
Do you donate goods or clothing to organizations or people in need? (Yes=1, No=0)	-0.03	0.72	2206
Do you give up your seat on the bus for a standing stranger? (Yes=1, No=0)	-0.10**	0.68	2206
Do you lend items to neighbors whom you don't know well? (Yes=1, No=0)	-0.04	0.68	2206
Do you help acquaintances with their move? (Yes=1, No=0)	-0.05	0.72	2206
<b>Conflict exposure:</b>			
Was exposed to the violence of the armed conflict (Yes=1, No=0)	0.00	0.52	2206
Have you lost a family member due to armed conflict? (Yes=1, No=0)	-0.00	0.29	2206
Have you or a family member been mistreated by armed forces? (Yes=1, No=0)	-0.03	0.31	2206
Have you or a family member received threats from the armed forces? (Yes=1, No=0)	-0.06	0.31	2206
Have you or a family member suffered acts of violence from the armed forces? (Yes=1, No=0)	0.02	0.28	2206
Have you or a family member witnessed acts of violence from the armed forces? (Yes=1, No=0)	0.01	0.34	2206

Note: Impacts are reported in percent change for continuous variables, in raw coefficient for dummy (to be multiplied by 100 to obtain the impact in percentage points) and in standard deviation for indices. Counterfactual mean indicates potential outcome participant households would have had if they had not benefited from the programme and it is expressed as the inverse hyperbolic sine transformation for monetary variables, per cent for the dummy variables and original unit/score for all indices. Asterisks indicate the level of statistical significance: \* at 10 per cent; \*\* at 5 per cent; \*\*\* at 1 per cent.

## 5.2. Heterogeneous impacts

Following the estimation of the overall impact of the TOP program, the analysis delves into the impact of the intervention across various sub-groups. Considering that conflict, the presence of coca cultivation, and the tradition of working in groups can influence social capital outcomes, we analyze differences in the impact on selected outcomes among sub-groups defined by variations in these factors.

### 5.2.1. Heterogeneous impact by tradition of working in groups<sup>13</sup>

We find that the benefits of the project tend to be concentrated in areas with low (prior) membership in organizations. One reason why the benefits may be higher among those who were not used to work in group could relate to the idea of untapped potential. It is plausible that some activities require cooperation to generate gains, and the project aimed at making people work together and learning to cooperate. This should lead to more benefits in areas which were less used to cooperate initially.

Table 18 shows that the number of shocks experienced was significantly lower in areas with high membership in organizations, indicating that a tradition of working in groups could contribute to better resilience against external shocks. Households in areas with low membership in organizations showed a greater increase in the HDDS score, suggesting improvements in dietary diversity. Female crop income experienced a significant increase in areas with high membership in organizations, pointing towards positive impacts on women's economic welfare in regions with a higher tradition of collective work probably typical of more traditional contexts (As confirmed by a lower initial average).

Participants in areas with a less prevalent tradition of collaborative work tend to experience a negative impact of the intervention on altruism and trust (Table 18). This phenomenon is observed consistently across heterogeneity analyses, whether considering associativity or the use of collective lands. We hypothesize that this occurs due to a learning curve associated with collective work. In contexts where the habit of working together is not well-established, the initial phase of adopting collective decision-making processes can be particularly challenging. Participants who are unaccustomed to making decisions collectively may value the economic benefits of collaborative efforts but struggle with the learning process involved in managing collective decisions and resolving conflicts. This adjustment period highlights the complexities of transitioning from individual to collective action, underscoring the importance of supporting participants through this transition to harness the full potential of collective efforts.

<sup>13</sup> To create the subsamples corresponding to participants in municipalities with high and low levels of membership in organizations, the value of this variable was taken from the National Agricultural Census (2014). This database is available at the level of each productive unit and contains georeferenced locations. The average of this variable at the municipal level was calculated, and the sample was divided based on the median value.

For the identification of households on collective and private lands, the household GPS locations were cross-referenced with the shapefiles of the collective territories of Afro-descendant and Indigenous communities. See annex 2 .

Table 18. TOP's impact by organization levels.

	High membership in organizations (n=1032)		Low membership in organizations (n=1174)	
	RD+IV	Mean	RD+IV	Mean
<b>Economic Goal</b>				
Gross total income (millions of COP) per capita	14.74 (0.171)	9.62	51.48** (0.170)	8.61
Net total income (millions of COP) per capita	9.44 (0.237)	7.63	85.97*** (0.195)	6.63
Total wages earned (millions of COP)	-21.37 (0.197)	2.43	116.65*** (0.208)	1.51
Gross income from crop production (millions of COP)	36.40 (0.225)	1.04	-25.43 (0.241)	1.25
Gross income from other sources (millions of COP)	36.88 (0.073)	0.16	119.51*** (0.051)	0.12
Productive asset index	0.18 (0.141)	1.10	-0.12 (0.150)	1.19
Household asset index	0.25 (0.177)	2.65	0.27* (0.140)	2.37
Share of crop income	13.94 (0.049)	0.18	-38.99 (0.056)	0.21
Agricultural income (millions of COP)	42.99 (0.247)	1.88	-24.92 (0.249)	2.45
Gross income from crop production (millions of COP)	36.40 (0.225)	1.04	-25.43 (0.241)	1.25
<b>Resilience</b>				
Number of shocks experienced	-8.05 (0.343)	2.32	-25.67* (0.308)	2.22
Gross income diversification (Gini Simpson Index)	0.05 (0.033)	0.35	-16.66* (0.033)	0.37
<b>Nutrition and Food Security</b>				
HDDS	0.40 (0.287)	10.16	0.46** (0.213)	9.82
FIES	-0.17 (0.358)	4.79	-0.17 (0.392)	4.35
<b>Women empowerment</b>				
Female crop income (millions of COP)	114.9*** (0.135)	0.43	-62.74** (0.161)	0.57
Female involved in household decision-making (Yes=1 No=0)	0.02 (0.055)	0.78	-1.61 (0.049)	0.75
Female participation in income generation (Yes=1 No=0)	0.02 (0.056)	0.74	-1.21 (0.055)	0.70
Female participation in self-employment activity (Yes=1 No=0)	0.07 (0.072)	0.27	3.85 (0.057)	0.21
<b>Social capital</b>				
Trust Organizational and Individual Index	-0.08 (0.092)	0.02	-0.19** (0.096)	0.01
Trust Organizational Index	-0.05 (0.085)	0.01	-0.14 (0.090)	0.01
Trust individual Index	-0.05 (0.090)	0.05	-0.12 (0.076)	0.00
Believe most people would try to be fair	-0.21*** (0.075)	0.48	0.42 (0.056)	0.44
Trust in women's organizations	-0.08 (0.071)	0.56	-12.29* (0.067)	0.50
Altruism index	-0.05 (0.102)	0.03	-0.11 (0.099)	0.02

Note: Impacts are reported in percent change for continuous variables, in raw coefficient for dummy (to be multiplied by 100 to obtain the impact in percentage points) and in standard deviation for indices. Counterfactual mean indicates potential outcome participant households would have had if they had not benefited from the programme and it is expressed as the inverse hyperbolic sine transformation for monetary variables, per cent for the dummy variables and original unit/score for all indices, such as HDDS, FIES, asset indices, and trust and altruism indices. Asterisks indicate the level of statistical significance: \* at 10 per cent; \*\* at 5 per cent; \*\*\* at 1 per cent.

The comparison between participants in collective versus private lands (Table 19) shows better economic outcomes on private lands and a negative impact on trust. However, it is important to approach this comparison with caution due to the relatively small sample size of households in collective lands, which includes only 275 individuals.

Table 19. TOP's impact by collective land.

	Collective lands (n=275)		Private lands (n=1923)	
	<b>RD+IV</b>	<b>Mean</b>	<b>RD+IV</b>	<b>Mean</b>
<b>Economic Goal</b>				
Gross total income (millions of COP) per capita	7.50 (0.230)	9.53	37.54** (0.134)	9.06
Net total income (millions of COP) per capita	21.79 (0.276)	7.87	52.56** (0.172)	6.97
Total wages earned (millions of COP)	-13.42 (0.299)	2.53	50.76** (0.167)	1.82
Gross income from crop production (millions of COP)	-27.30 (0.317)	1.13	1.67 (0.179)	1.18
Gross income from other sources (millions of COP)	28.89 (0.088)	0.09	94.02*** (0.048)	0.14
Productive asset index	-0.23* (0.132)	0.86	0.06 (0.116)	1.20
Household asset index	0.65*** (0.239)	2.44	0.16 (0.103)	2.51
Share of crop income	-25.91 (0.067)	0.19	-14.49 (0.041)	0.20
Agricultural income (millions of COP)	-19.09 (0.394)	1.72	2.25 (0.189)	2.25
Gross income from crop production (millions of COP)	-27.30 (0.317)	1.13	1.67 (0.179)	1.18
<b>Resilience</b>				
Number of shocks experienced	-11.43 (0.344)	2.49	-16.03 (0.257)	2.24
Gross income diversification (Gini Simpson Index)	-0.01 (0.044)	0.41	-0.02 (0.027)	0.36
<b>Nutrition and Food Security</b>				
HDDS	0.99** (0.434)	9.68	0.31* (0.164)	10.02
FIES	-0.81** (0.357)	6.14	-0.18 (0.288)	4.34
<b>Women empowerment</b>				
Female crop income (millions of COP)	-5.18 (0.170)	0.43	-6.99 (0.119)	0.51
Female involved in household decision-making (Yes=1 No=0)	-0.09 (0.090)	0.83	2.03 (0.040)	0.76
Female participation in income generation (Yes=1 No=0)	-0.18* (0.097)	0.77	4.19 (0.044)	0.71
Female participation in self-employment activity (Yes=1 No=0)	0.01 (0.097)	0.40	4.04 (0.048)	0.22
<b>Social capital</b>				
Trust Organizational and Individual Index	-0.06 (0.106)	0.21	-0.15** (0.075)	-0.01
Trust Organizational Index	-0.04 (0.100)	0.16	-0.10 (0.071)	-0.01
Trust individual Index	0.03 (0.149)	0.15	-0.11* (0.065)	0.00
Believe most people would try to be fair	-0.26*** (0.099)	0.49	-6.02 (0.050)	0.46
Trust in women's organizations	-0.00 (0.104)	0.69	-10.94** (0.052)	0.50
Altruism index	0.09 (0.169)	-0.21	-0.11 (0.074)	0.05

Note: Impacts are reported in percent change for continuous variables, in raw coefficient for dummy (to be multiplied by 100 to obtain the impact in percentage points) and in standard deviation for indices. Counterfactual mean indicates potential outcome participant households would have had if they had not benefited from the programme and it is expressed as the inverse hyperbolic sine transformation for monetary variables, per cent for the dummy variables and original unit/score for all indices, such as HDDS, FIES, asset indices, and trust and altruism indices. Asterisks indicate the level of statistical significance: \* at 10 per cent; \*\* at 5 per cent; \*\*\* at 1 per cent.

### 5.2.2. Heterogeneous impact by coca presence previous to the program<sup>14</sup>

Table 20 reveals that the economic benefits of the program are significantly concentrated in areas with coca production, indicating that these regions may harbor untapped potential previously overshadowed by a focus on coca-related activities.

In contrast, the decline in social capital is more pronounced in areas without coca production. These findings echo those previously discussed regarding the comparison between areas with high and low levels of organizational involvement. Research in Colombia has identified that areas involved in coca production often exhibit higher levels of organization, likely due to the necessity of navigating the complexities associated with coca cultivation, an environment where informal norms play a crucial role (Ramírez, 2011). Likely, these areas are more accustomed to group work and conflict resolution, which might explain why negative impacts on social capital are observed only in non-coca areas.

In regions with a history of coca production, the prevailing informal norms and established social fabric may contribute to both economic success and the preservation of social capital. The presence of coca cultivation might have cultivated a community dynamic conducive to collective action, which, when steered towards positive economic initiatives through the TOP program, bolsters both economic outcomes and social cohesion.

Additionally, to these general trends, it is noteworthy that improvements in food security, as gauged by the HDDS, are evident in areas with coca production. This enhancement implies that economic gains, alongside transitions to new agricultural activities, may translate into more diverse and secure food sources for these communities.

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<sup>14</sup> For the identification of households in areas with coca presence prior to the program, the georeferencing of the households was cross-referenced with shapefiles containing coca presence (with a resolution of 1km<sup>2</sup>). Coca information was added at the vereda (neighborhood or sector) level, considering that the dynamics of the coca economy affect all inhabitants of the vereda. Thus, even if a household does not exactly match a coca polygon, if they are located in a vereda with coca presence, they are classified within the group influenced by the coca economy, including the collective territories of Afro-descendant and Indigenous communities.

Table 20. TOP's impact by coca presence.

		Coca (n= 1221)		No Coca (n= 977)
	RD+IV	Mean	RD+IV	Mean
<b>Economic Goal</b>				
Gross total income (millions of COP) per capita	70.87*** (0.166)	8.53	-1.51 (0.154)	10.02
Net total income (millions of COP) per capita	83.51*** (0.223)	6.76	13.86 (0.184)	7.48
Total wages earned (millions of COP)	60.77** (0.184)	2.13	-10.15 (0.199)	1.62
Gross income from crop production (millions of COP)	13.10 (0.167)	0.90	-3.47 (0.272)	1.55
Gross income from other sources (millions of COP)	94.72** (0.056)	0.14	54.05 (0.059)	0.14
Productive asset index	0.08 (0.128)	1.04	-0.01 (0.161)	1.30
Household asset index	0.34** (0.136)	2.57	0.03 (0.141)	2.41
Share of crop income	-2.38 (0.035)	0.16	-20.99 (0.066)	0.25
Agricultural income (millions of COP)	5.39 (0.200)	1.74	11.66 (0.264)	2.85
Gross income from crop production (millions of COP)	13.10 (0.167)	0.90	-3.47 (0.272)	1.55
<b>Resilience</b>				
Number of shocks experienced	-9.17 (0.305)	2.23	-24.04 (0.298)	2.32
Gross income diversification (Gini Simpson Index)	-0.06* (0.032)	0.36	0.06* (0.033)	0.37
<b>Nutrition and Food Security</b>				
HDDS	0.64*** (0.209)	9.99	0.11 (0.277)	9.97
FIES	-0.14 (0.304)	4.48	0.08 (0.412)	4.64
<b>Women empowerment</b>				
Female crop income (millions of COP)	4.78 (0.126)	0.41	19.75 (0.183)	0.61
Female involved in household decision-making (Yes=1 No=0)	0.01 (0.053)	0.75	5.71 (0.052)	0.79
Female participation in income generation (Yes=1 No=0)	0.02 (0.057)	0.70	5.15 (0.052)	0.75

Female participation in self-employment activity (Yes=1 No=0)	-0.01 (0.061)	0.25	17.26** (0.068)	0.22
<b>Social capital</b>				
Trust Organizational and Individual Index	-0.12 (0.096)	-0.03	-0.19** (0.094)	0.07
Trust Organizational Index	-0.09 (0.090)	-0.03	-0.13 (0.090)	0.06
Trust individual Index	-0.02 (0.079)	-0.04	-0.16* (0.087)	0.09
Believe most people would try to be fair	-0.10 (0.067)	0.44	-8.81 (0.063)	0.49
Trust in women's organizations	-0.15** (0.066)	0.52	-10.64* (0.061)	0.53
Altruism index	-0.01 (0.092)	0.08	-0.19* (0.102)	-0.05

Note: Impacts are reported in percent change for continuous variables, in raw coefficient for dummy (to be multiplied by 100 to obtain the impact in percentage points) and in standard deviation for indices. Counterfactual mean indicates potential outcome participant households would have had if they had not benefited from the programme and it is expressed as the inverse hyperbolic sine transformation for monetary variables, per cent for the dummy variables and original unit/score for all indices, such as HDDS, FIES, asset indices, and trust and altruism indices. Asterisks indicate the level of statistical significance: \* at 10 per cent; \*\* at 5 per cent; \*\*\* at 1 per cent.

### 5.2.3. Heterogeneous impact by conflict exposure

A notable difference in impacts on economic outcomes between municipalities with high and low levels of conflict becomes evident, with those experiencing lower conflict demonstrating significant improvements in gross total income, net total income, and total wages earned. This variation suggests that areas with less conflict were more capable of capitalizing on the economic opportunities afforded by the program. People in low conflict area lost slightly more in the Trust Organizational and Individual Index (despite starting with lower values of trust), but the difference is not large.

Table 21. TOP's impact by conflict exposure.

		High conflict (n=1052)		Low conflict (n=1154)	
	<b>Economic Goal</b>	<b>RD+IV</b>	<b>Mean</b>	<b>RD+IV</b>	<b>Mean</b>
Gross total income (millions of COP) per capita	22.87 (0.161)	10.32	46.10** (0.184)	8.11	
Net total income (millions of COP) per capita	43.02 (0.229)	8.19	56.78** (0.215)	6.17	
Total wages earned (millions of COP)	16.99 (0.210)	2.18	56.69** (0.205)	1.66	
Gross income from crop production (millions of COP)	4.13 (0.202)	1.25	-12.68 (0.260)	1.07	
Gross income from other sources (millions of COP)	98.19** (0.069)	0.16	58.32 (0.052)	0.12	
Productive asset index	-0.01 (0.148)	1.11	0.03 (0.141)	1.19	
Household asset index	0.24 (0.168)	2.53	0.24* (0.144)	2.47	
Share of crop income	-26.97 (0.050)	0.21	-14.29 (0.057)	0.19	
Agricultural income (millions of COP)	4.66 (0.244)	2.18	-4.24 (0.246)	2.15	
Gross income from crop production (millions of COP)	4.13 (0.202)	1.25	-12.68 (0.260)	1.07	
<b>Resilience</b>					
Number of shocks experienced	-8.96 (0.302)	2.26	-28.45* (0.336)	2.27	
Gross income diversification (Gini Simpson Index)	-0.01 (0.032)	0.37	-0.03 (0.035)	0.36	
<b>Nutrition and Food Security</b>					
HDDS	0.36 (0.283)	10.03	-0.445* (0.224)	9.94	
FIES	-0.42 (0.351)	4.92	-0.0226 (0.398)	4.22	
<b>Women empowerment</b>					
Female crop income (millions of COP)	32.99 (0.147)	0.57	-34.71 (0.156)	0.44	
Female involved in household decision-making (Yes=1 No=0)	0.02 (0.057)	0.78	-0.00 (0.048)	0.75	
Female participation in income generation (Yes=1 No=0)	0.04 (0.060)	0.72	-1.91 (0.051)	0.72	

Female participation in self-employment activity (Yes=1 No=0)	0.02 (0.072)	0.27	7.60 (0.055)	0.21
<b>Social capital</b>				
Trust Organizational and Individual Index	-0.08 (0.096)	0.07	-0.19** (0.093)	-0.03
Trust Organizational Index	-0.08 (0.091)	0.05	-0.11 (0.085)	-0.03
Trust individual Index	-0.06 (0.089)	0.10	-0.09 (0.077)	-0.05
Believe most people would try to be fair	-0.14** (0.064)	0.48	-5.00 (0.066)	0.45
Trust in women's organizations	-0.04 (0.069)	0.55	-14.00** (0.066)	0.51
Altruism index	-0.06 (0.103)	0.00	-0.11 (0.098)	0.05

Note: Impacts are reported in percent change for continuous variables, in raw coefficient for dummy (to be multiplied by 100 to obtain the impact in percentage points) and in standard deviation for indices. Counterfactual mean indicates potential outcome participant households would have had if they had not benefited from the programme and it is expressed as the inverse hyperbolic sine transformation for monetary variables, per cent for the dummy variables and original unit/score for all indices, such as HDDS, FIES, asset indices, and trust and altruism indices. Asterisks indicate the level of statistical significance: \* at 10 per cent; \*\* at 5 per cent; \*\*\* at 1 per cent.

## 6. Conclusions

### 6.1. General Conclusions

This report presents the results of an ex-post impact assessment of the TOP, an IFAD-funded project, which was implemented between 2014 and 2020 in zones affected by armed conflict in Colombia. The results show remarkable success in enhancing the economic mobility of rural communities and productive groups. The program has significantly increased gross total income per capita and net total income per capita. This increase is not just a one-time boost but indicates a structural change in income generation, making it more sustainable. The program has also positively impacted asset accumulation, increasing the household assets. However, the program did not show statistically significant changes in productive capacity, possibly due to the impact of the COVID-19 pandemic on input costs.

The program has also been effective in improving market access and increasing the total value of sales. Despite some challenges brought about by the COVID-19 pandemic and new tax obligations, the program has been instrumental in overcoming pre-existing barriers to market participation. In terms of resilience, the program has reduced the number of total shocks experienced by participants, enhancing their ability to adapt to environmental and economic challenges. Women have also increased both enterprise income and decision-making power over enterprise income. In other words, women earn more, participate more in enterprises, feel more empowered, gain valuable skills, and influence the next generation through active and consistent participation. The program has contributed to breaking down traditional gender roles, as evidenced by the positive impact on dynamics within groups, where women's participation has been described as a significant advancement towards gender equality. The program also improved household dietary diversity, which was driven by the higher consumption of specific food groups, such as white tubers and roots, meat, and milk products.

The TOP program presents mixed impact on various outcomes at the association level. On the positive side, many associations reported that their expectations were met, citing benefits such as economic resources, training, and the innovation of participating in projects. These associations acquired heavy machinery, raw materials and received training that enriched their knowledge. The program also significantly impacted employment, quality

of products, and economic capital, which are crucial for the long-term sustainability of these associations. However, the program also faced several challenges. One of the most significant issues was the need for continuous support and supervision in the use and execution of resources. The internal difficulties among members that hindered the progress of the business plans also reflect the importance of relationship management. A better understanding of how the program affects trust is key to ensuring the sustainability of the various positive socio-economic outcomes demonstrated in this report, addressing both internal dynamics and external pressures faced by rural productive organizations. The pandemic added another layer of complexity, affecting mobility, increasing operational costs, and even leading to the premature closure of some projects. These challenges highlight the need for more flexible and adaptable project planning and the importance of addressing potential conflicts constructively to ensure the effective functioning of the associations.

The heterogeneous analysis highlights that the Impact of the program on various outcomes is highly dependent on the pre-existing ability to work together. In areas with low prior organizational membership and no communal lands, significant benefits were observed in economic gains, dietary diversity, and women's incomes, suggesting that the program successfully activated the benefits of collaborative work in areas where farmers were less able to reap the benefits of such projects. However, these same areas experienced a negative impact on altruism and trust, considered a transitional phase as participants learn to work collectively. Additionally, economic benefits were significantly concentrated in areas with coca production. Places with coca may have had projects with high untapped potential, unused because of the prior focus on coca-related activity. More informal norms can also contribute to economic success and prevent the negative effects on social capital. By contrast, zones with high exposure to violence—not always correlated with coca presence—did not show a positive impact, unlike places with low violence exposure where the program succeeded in creating new economic opportunities. Hence it does seem like a violent environment is an obstacle to the benefits of the program.

## 6.2. Lessons learned

The impact assessment of the TOP program offers several valuable lessons that can inform the design and implementation of future initiatives.

One key insight relates to economic mobility. The program contributed significantly to increasing household income, particularly through the expansion of enterprises, wage employment, and other diverse income sources. Collective work emerged as a critical factor behind these gains. Evidence suggests that when initiatives also address barriers related to high production costs and limited market access, especially in remote areas, they can further support pathways out of poverty and enhance economic mobility.

In terms of market access, while the program did not lead to measurable improvements in total sales or production levels of crops, fish, and livestock, participating producer organizations reported tangible benefits from gaining entry to new market channels such as 'mercados campesinos' and public procurement schemes. This indicates that when programs include systematic commercialization strategies and long-term support to sustain production, they can more effectively translate new market access into sustained income growth.

Regarding financial inclusion, the program had no positive effect and, in some cases, contributed to declining trust in banks. Geographic isolation and restrictive lending criteria continue to limit access to formal financial services. However, experience from the program shows that supporting alternative credit mechanisms, such as informal savings groups or Rotating Savings and Credit Associations (ROSCAs), can be a more feasible pathway for improving financial access in rural and remote areas.

The program also made a notable contribution to resilience. It strengthened participants' capacity to manage and absorb shocks, and collective work again played a key role in building this adaptive capacity. This suggests that fostering collaboration within communities can have significant implications for enhancing resilience.

On the topic of farmer organizations and social capital, the program's experience highlights that building trust and productive collaboration among farmers is not automatic, it requires time and specific support. In areas where collective action is not a traditional practice, trust tended to erode over time. This points to the potential benefits of incorporating training on conflict resolution and on managing external threats that can undermine trust, as these elements can help reinforce the sustainability of collective productive organizations.

The implementation of the program also revealed important lessons about rural practices and institutions. Rural economic exchanges often rely on informal systems that may not align with the standardized

procedures and paperwork typically required by public programs. When programs impose requirements designed from an urban perspective, they can create frustration and barriers to participation. Evidence indicates that adopting more flexible administrative processes and reducing bureaucratic demands can improve program accessibility and effectiveness in rural settings.

Finally, the experience of the TOP program in post-conflict areas shows that economic benefits are achievable not only in areas with minimal prior conflict but also in regions previously influenced by illegal economies. These results suggest that rural programs can facilitate the transition to legal economies. However, sustaining these gains may require a deeper institutional commitment and a better understanding of the unique obstacles faced by communities in post-conflict contexts.

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## Annex 1. Qualitative Analysis

**Results from: 15 semi-structured interviews conducted with territorial coordinators and 12 focus groups with 102 individuals from 50 associations.**

The qualitative analysis is organized as follows:

Positive Economic Impacts and Increased Productive Capacity	42
Resilience and Adaptation	43
Food Security Improvements	43
Challenges with Financial Inclusion and Banks	44
Boosting Participation of Women and Youth	44
Benefits of the Organization(social and entrepreneurial organization)	45
Organizational Problems	45
Impact on trust	46

### Positive Economic Impacts and Increased Productive Capacity

The main findings indicate that the "TOP-El Campo Emprende" program has had a positive impact on economic mobility and productive capacity, with notable improvements in **market access and resilience**. However, there are significant areas where impacts vary, such as the sufficiency of resources, sector-specific **challenges**, empowerment of *women in non-traditional sectors*, and the long-term sustainability of the benefits. The consensus largely revolves around the appreciation for **practical training** and initial support, while differential impacts are more pronounced in the adequacy of resources and the **long-term sustainability** of economic improvements.

#### a. Enhanced Productive Capacity:

- The positive impact on economic status and **productive capabilities**, especially through practical workshops, was a common theme across multiple groups. This suggests a widespread appreciation of the program's hands-on approach and support in project formulation (Common across various groups).
- The program has led to increased involvement of rural communities in economic activities.. Business plans and guidelines for rural promoters have significantly enhanced productive capacities and financial assets, moving communities towards socio-economic stability. This suggests a broad consensus on the program's effectiveness in improving organizational and financial structures.
- In the Sierra Nevada and Cauca regions, the program has facilitated significant economic advancements by implementing **technical and business skills** development. This has enabled communities to enhance their production methodologies and establish more sustainable business models, particularly in agriculture and artisan work, leading to increased income and economic stability.
- The improvement in production capacity and the ability to assess production costs and needs have been particularly noted in the Cauca region. The involvement of **technical and socio-business promoters** has played a crucial role in enhancing the sustainability and economic viability of community units, indicating that the program's approach has been effective in fostering sustainable growth.
- Across the board, the program has significantly improved economic conditions and productive capacities in targeted areas. This has been effective in enhancing local business operations and enabling community growth **suggesting that the impacts are widespread and not confined to a single area**.

#### b. Value Addition and Market Access:

- The transformative impact on local economic activities and improvement in market access was notably highlighted by FGD, indicating a significant positive outcome from the program in this group (Highlighted by specific groups).
- Training provided to participants has improved production and marketing, enabling them to adopt **new marketing strategies and access new markets**. This improvement is echoed in the experiences of communities in Tolima, where agricultural productivity and market engagement have seen growth.

#### c. Sector-Specific Impacts and Empowerment:

- Specific support in areas like pisciculture was particularly highlighted in Choco, reflecting a targeted impact in these sectors. The empowerment of women in non-traditional roles was a notable point in some FGD, showing the program's effort in gender inclusivity, though it came with its own set of challenges.

#### d. Challenges and Insufficient Resources:

- The challenge of insufficient resources was specifically noted in some FGD, indicating a particular concern in these groups about the gap between the program's offerings and participants' needs.
- e. **Learning Curve and Economic Transition:**
- The transition to new economic activities and the associated learning curve were specifically discussed in some groups, suggesting that this experience might not be universal but significant for the groups involved.
- f. **Mixed Feelings on Long-term Sustainability:**
- Mixed feelings about the long-term benefits and sustainability were expressed in some FGD, pointing to an uncertainty that may not be widespread across all groups but is significant where it occurs.
- g. **Logistical and Operational Issues:**
- Logistical challenges like transport for products and inputs were specifically mentioned in remote areas, impacting the efficiency and cost-effectiveness of operations. Similarly, some groups highlighted inadequate training for project management and unexpected operational costs, pointing to the need for improved preparatory measures and operational planning (Specific to certain groups but indicative of broader operational challenges).

#### Resilience and Adaptation:

The main findings across the focus groups reveal a significant consensus on the program's role in enhancing economic resilience and **adaptability** among participants, particularly **during the COVID-19 pandemic**. While the emphasis **on community support and cooperative work** is a common theme, there are differential impacts in how each group adapted to the pandemic and managed challenges in unfamiliar contexts. The collective effort towards maintaining operations and the strategies developed to navigate the pandemic underscore the program's success in fostering resilience and adaptability among rural populations.

- Enhancement of Resilience:**
  - The program significantly contributed to enhancing resilience among participants, particularly through the promotion of **cooperative work, savings accounts, and financial education**. This approach helped build a foundation for better economic management and crisis handling, crucial for resilience during challenging times. This aspect was especially underscored during the COVID-19 pandemic indicating a common recognition of the program's positive impact on resilience.
- Adaptability During Pandemic:**
  - Despite facing challenges, associations and community members showed a remarkable ability to adapt. Some groups found new ways to sustain their operations and continue production, despite significant difficulties such as movement restrictions and limited market access.
  - Participant communities and associations have shown improved resilience and adaptability, especially evident during the COVID-19 pandemic. They adapted to new working conditions and market demands, maintaining business operations and utilizing virtual platforms for communication and sales. This indicates a significant improvement in the communities' ability to adjust to sudden changes and sustain their livelihoods under challenging conditions.
- Community Support and Unity:**
  - The focus on unity and communal efforts, exemplified by initiatives like the *olla comunitaria* (communal kitchens), fostered a supportive community environment that is essential for resilience during challenging times. This was particularly evident during the COVID-19 pandemic, suggesting a widespread value placed on communal support in building resilience.
- Resilience in Unfamiliar Contexts:**
  - The need to find additional funding and manage activities in unfamiliar contexts, such as handling soil and nutrients, highlighted the resilience and adaptability of participants. Resilience was not only about enduring hardships but also about adapting to new roles and responsibilities.

#### Food Security Improvements

The focus group discussions reveal a **strong consensus** on the program's contribution to **food security**, particularly through initiatives like **livestock distribution and support for agriculture and pisciculture**. These efforts provided both immediate and sustainable benefits, helping to stabilize food resources and enabling families to maintain food security **even during challenging times like the pandemic**. The impact on food security appears to be a widely recognized and significant outcome of the "TOP-El Campo Emprende" program across the different communities involved.

- The program directly contributed to food security by distributing chickens, which provided a dual benefit: a direct source of food and an opportunity for income generation through the sale of eggs. This approach helped stabilize food resources within the community and offered an economic buffer during times of crisis, such as the pandemic. This finding was particularly

- highlighted by one group, indicating that the integration of livestock into the program had tangible benefits on food security.
- Food security was further enhanced by supporting agriculture and pisciculture. This not only allowed families to sustain themselves during difficult times but also contributed to longer-term food security by developing sustainable food production systems. The program's support for direct food production activities like fish farming had a significant positive impact, particularly noted during the pandemic (Common among several groups).
- San Vicente discussed the program's contribution to **food security** through projects like fish farming and poultry. This indirectly impacts **women** and youth by providing food and income, highlighting the importance of continued support post-pandemic to maintain these initiatives.

#### Challenges with Financial Inclusion and Banks

Financial inclusion and access to banking services remain significant challenges. There is a consensus on the need for better **access to credit for collective entities** and improved financial education to enhance financial management capabilities. However, the extent of these challenges varies, with specific regional hurdles such as **bureaucratic processes and geographical barriers** exacerbating the difficulties faced by rural POs.

##### a. **Limited Access to Credit for Collective Entities:**

- One interview pointed out a significant issue where banks did not grant credits to associations but rather to individuals. This practice has limited access to the financial market for associative entities, affecting the financial management and growth potential of Productive Organizations (POs). This indicates a common challenge across the board, where **financial institutions' policies adversely impact collective rural enterprises**.
- Financial inclusion remains a challenge, with communities facing difficulties in accessing banking services and credit. While all groups managed to open bank accounts, the lack of administrative discipline and comprehensive financial records has hindered their ability to secure loans. This underlines the need for enhanced financial education and support to improve financial inclusion and management.

##### b. **Bureaucratic obstacles and Geographical Barriers:**

- In regions like Cauca, groups faced significant challenges in opening bank accounts and accessing loans due to bureaucratic hurdles and geographical barriers. These challenges impact their financial management and access to credit, suggesting that financial inclusion issues are exacerbated by local administrative and infrastructural constraints.

Focus group participants voiced concerns regarding the program's approach to financial inclusion and organizational support. Additionally, some focus group participants reported difficulties in accessing financial services and credits, which curtailed their ability to invest in and expand their productive activities.

#### Boosting Participation of Women and Youth

The principal findings reveal a strong consensus on the positive impact of the "TOP-El Campo Emprende" program on boosting the participation of women and youth. The differential impacts are observed in the extent and nature of women's involvement across different communities. There is a clear trend towards **empowering women through leadership and administrative roles**, as well as a recognition of the unique **challenges** they face, particularly in **balancing multiple responsibilities**. These insights suggest a positive shift towards gender inclusivity and youth engagement in rural development projects, although continued support and **recognition of their specific needs** and challenges remain crucial.

##### a. **Positive Inclusion of Women and Youth:**

- Across the focus groups, there is a consensus on the **positive view** of the inclusion of women and youth in the program, despite initial withdrawals. This suggests a general agreement on the importance of involving these groups in productive activities and decision-making processes.
- The establishment of Productive Organizations (POs) has facilitated community engagement and leadership, particularly among women and youth, leading to a more organized and effective approach in project implementation and economic activities. This suggests a common benefit across different regions, with a particular emphasis on **empowering underrepresented groups**.

##### b. **Women in Leadership and Administrative Roles:**

- Women's involvement in roles like treasury and secretariat was highlighted as particularly beneficial. Their meticulous approach to finance and administration underlines the systemic shift **towards valuing women's contributions in organizational and financial management**.
- In some FGD, the significant role of women in sustaining the association was noted, particularly in labor-intensive tasks and organizational responsibilities. This indicates a shift towards more

active participation and leadership roles for women within the community, highlighting a pattern of empowerment and increased responsibility.

#### Benefits of the Organization(social and entrepreneurial organization)

While there is a general consensus on the benefits of improved organization and collaboration fostered by the "TOP-El Campo Emprende" program, there are also notable **challenges**, particularly in **coordination, management, and financial aspects**. The program **has successfully promoted social cohesion, teamwork, and entrepreneurial skills**, although the impacts vary across different communities and areas of focus.

##### **1. Increased Collaboration and teamwork**

- Associations benefited from increased collaboration and support, which enhanced **social cohesion** and entrepreneurial skills among members. This was a recurring theme in some groups, indicating a widespread **appreciation of the program's role in enhancing teamwork and social bonds**.
- The program facilitated strengthening of organizational and productive capacities.
- The project has led to the development and strengthening of social and entrepreneurial organization structures, improving **community cohesion and collective management skills** among members.
- The project has fostered stronger social and entrepreneurial organizations across the board, leading to better project implementation and community development. This indicates that the program has had a significant impact on enhancing the structural and **operational capacities of community groups**.

##### **2. Formation and Formalization of Associations:**

- The formation and formalization of associations were seen positively across several groups, **fostering a sense of community** and improving organizational skills. However, other groups reported internal conflicts and a lack of clear guidance, indicating differential impacts across communities (Varied experiences, but overall positive).
- In Cauca the program has fostered social and business organization, leading to **the improved formalization** and sustainability of community groups. This organizational strengthening has led to an increased focus on training and market access, **underscoring the importance of collective action for successful commercialization**.

##### **3. Sense of Community and Teamwork:**

- Despite initial challenges, there was a strong sense of achievement in forming and maintaining the organizations. Some groups **highlighted the fostering of community organization and cooperation, citing teamwork and mutual support as significant benefits**. This indicates that the social cohesion fostered by the program **has been crucial for project sustainability and community resilience**.
- The formation and strengthening of community organizations have been central to the program's success. These organizational structures have facilitated better project management, increased **community participation, and enhanced collective decision-making processes**, showcasing the program's effectiveness in building cohesive community frameworks.

##### **4. Challenges in Coordination and Management:**

- While the formation and operation of associations were generally seen as beneficial, some groups **faced challenges**, especially in **coordinating among members** with individual jobs and responsibilities. This suggests that while there are organizational benefits, they come with challenges in teamwork and management.
- Some participants highlighted organizational benefits, such as legal formalization and learning opportunities. However, they also reflected on **operational challenges and insufficient continuous support, indicating mixed outcomes in strengthening social and entrepreneurial organization aspects**.

#### Organizational Problems

While there are some differential impacts based on specific focus group experiences, the overarching themes include widespread challenges in **commitment, communication, and management within the organizations**. These issues are compounded by logistical and operational hurdles, indicating a strong need for enhanced training, better resource allocation, and more effective supervision and support structures to address these organizational problems effectively.

##### **1. Common Organizational Challenges:**

- Organizations faced general challenges such as lack of commitment and participation from members, difficulties in internal communication, and issues in resource management and allocation. This theme appears to be a common thread across various groups, indicating a widespread issue within the program (Widely acknowledged across focus groups).

## 2. Internal Disputes and Management Flaws:

- Internal disputes, **mismanagement of funds**, and lack of transparency were particularly noted in some regions, underscoring the need for better organizational structure and management within associations. (Common in several groups but with varying degrees of intensity).
- Some FGD highlighted organizational challenges in maintaining cohesion and commitment among group members. Issues such as **mismanagement** of funds and **lack of adherence to project guidelines** have underscored the need for stricter oversight and alignment with project objectives. This points to a broader issue of maintaining group unity and project fidelity.

## 3. Lack of Long-term Commitment and Cohesion:

- A notable problem was the **formation of associations primarily for resource acquisition**, leading to a lack of long-term commitment and potential dissolution. This issue, combined with internal conflicts and management problems points to a crucial **need for ongoing support in capacity building and conflict resolution** (Highlighted by multiple groups, indicating a pattern of weak organizational commitment).

## 4. Guidance and Support Deficiencies:

- Significant organizational problems were identified in a group, including **internal conflicts, lack of proper guidance, and inadequate support from supervisory bodies, leading to fragmentation within groups**. The absence of consistent and effective supervision has resulted in misunderstandings and project misalignments, highlighting a critical area for program improvement (Particularly emphasized in one group but relevant to other groups as well).
- One group reported organizational challenges related to project management and coordination, impacting the efficiency and effectiveness of project delivery. This suggests that there were significant hurdles in implementing the projects as planned, **requiring adjustments** and improvements in project management strategies. This indicates a need for enhanced project management frameworks and better coordination mechanisms.
- There were difficulties in integrating diverse groups, managing collective resources, **and adapting projects to meet specific community needs**. These organizational challenges have affected the cohesion and efficiency of group activities, indicating a need for strategies that accommodate diversity and ensure effective resource management.

### Impact on trust

Trust impacts varied significantly across the different focus groups, with some indicating **improvements through shared struggles and collaborative efforts**, while others highlighted severe **trust issues** stemming from resource **management conflicts, internal disputes, and external threats**. The differential impacts suggest that while the program has facilitated some positive community interactions, there is a **clear need for improved communication, equitable decision-making, and stronger support mechanisms** to address trust issues effectively.

### 1. Trust Issues Due to Resource Management and different expectations:

- Conflicts over resource allocation and management led to significant trust issues within communities. The FGD discussions highlight a need for **clearer communication and more equitable decision-making** processes to mitigate these trust issues.
- FGD discussions indicate underlying trust issues, as inferred from challenges and tensions described, affecting community cohesion and cooperation. The lack of **coherent action and unity among project members** points towards these trust issues.
- Trust issues were a significant concern in one group, where internal enmities and dissatisfaction with the program's follow-through were evident. The lack of adequate support and guidance from the program led to disillusionment and strained relationships among participants.
- The project fostered collaboration and collective action, which positively impacted trust among community members. However, challenges in financial management and project implementation tested the trust within communities and between community members and project staff. This suggests that while **the program has potential to build trust, operational challenges may undermine these efforts**.
- In Tolima, trust among community members and between communities and project coordinators was strengthened due to transparent and participative processes. Nevertheless, maintaining this trust, especially amidst financial management issues, remains a challenge, pointing to a need for continued transparency and improved financial handling.
- The program has had a varied impact on trust within communities. Improved collaboration and trust resulted from **joint economic activities and shared goals**. However, financial mismanagement and **inconsistent participation** have tested this trust, indicating areas for further attention and strengthening.
- In Cauca, the initiative generally strengthened community trust, particularly through **collaborative efforts to overcome challenges** and improve project outcomes. Yet, financial

management and project execution issues tested this trust, underlining the importance of transparency and accountability in sustaining trust levels.

- Lastly, one territorial coordinator noted that the project enhanced cooperation among community members, thereby improving trust levels. However, this trust also faced challenges due to organizational issues, suggesting that while trust has been positively influenced, there is still room for improvement in handling organizational matters.

## 2. Impact of External Threats on Trust:

- In one municipality trust within the community was notably affected by external security concerns **like extortion**, which not only impacted work conditions but also personal lives. This reflects the complex nature of trust dynamics that are influenced by both internal organizational challenges and external threats.

### Other issues

#### 1. Marketing and Market Access Challenges:

- There remains a significant issue with the marketing of products and access to markets, which critically affects the income and sustainability of the organizations. This problem was noted across various discussions, indicating that while progress has been made, considerable obstacles still hinder the full economic mobility and productive capacity expected from the program (Common challenge across focus groups).

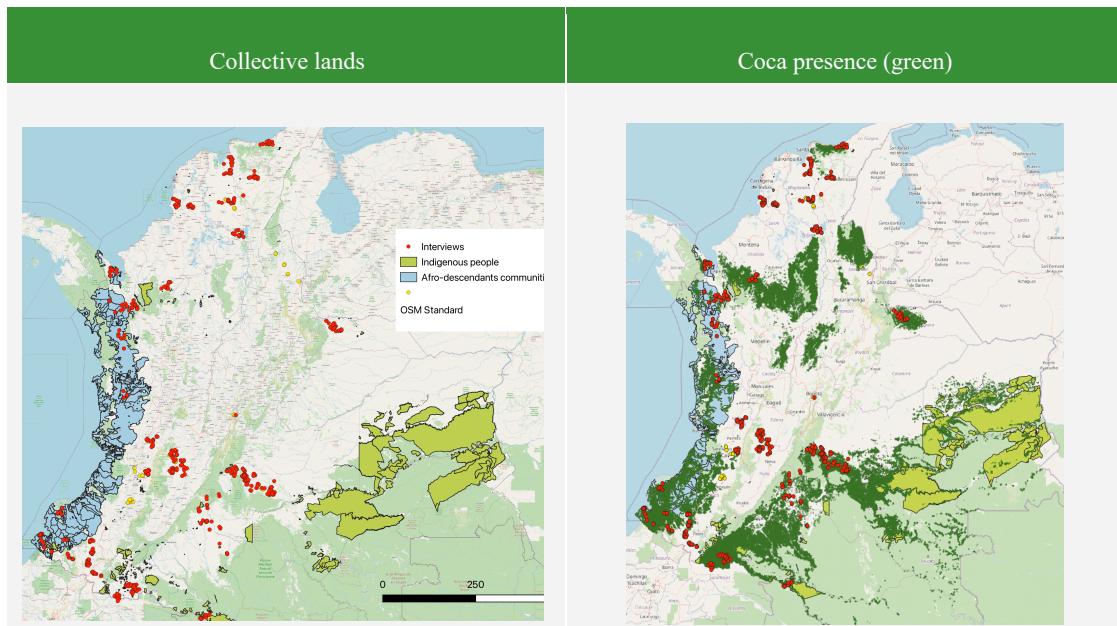
#### 2. Market Fluctuations and Logistical Difficulties:

- Broader issues such as market fluctuations and logistical difficulties were highlighted. These challenges impact the organizations' ability to sell products and sustain their businesses effectively, reflecting the complex nature of implementing rural development programs. This suggests that while the program has had positive impacts, external market forces and logistical constraints remain significant barriers to success.

#### 3. Barriers to Program Access and Regulatory Compliance:

- Key issues include difficulties in accessing the program due to lack of information or short notice, as well as challenges faced by associations in meeting regulatory requirements like INVIMA certification. These barriers to entry underline the need for improved communication and support from the program to ensure broader and more equitable access. This indicates a gap in the program's outreach and assistance efforts, particularly in helping organizations navigate regulatory landscapes and program entry requirements.

## Annex 2. Maps



Note: Collective lands: data source national land agency, [https://www.datos.gov.co/Agricultura-y-Desarrollo-Rural/Consejos-Comunitarios/sdz8-smbv/about\\_data](https://www.datos.gov.co/Agricultura-y-Desarrollo-Rural/Consejos-Comunitarios/sdz8-smbv/about_data). Coca presence: Quantification of hectares of existing coca crops as of December 31st each year across the national territory. Information compiled for the years 2001 to 2022; data source: <https://www.datos.gov.co/Justicia-y-Derecho/Detecci-n-de-Cultivos-de-Coca-hect-reas-/acs4-3wgp>



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