THE HALO TRUST

Post-Clearance Assessment:

Nariño and La Unión, Antioquia Department, Colombia

A project funded by the US Department of State

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Contents

List of Acronyms

AOO	Area of Operations.
CHA	Confirmed Hazardous Area.
EOD	Explosive Ordnance Disposal.
EORE	Mine Risk Education.
ERW	Explosive Remnant of War.
FARC-EP	Revolutionary Armed Forces of Colombia (Fuerzas Armadas Revolucionarias de Colombia – Ejército del Pueblo); the longest standing NSAG in the world, who in late 2016 signed a historic peace deal with the Colombian government after more than five decades of internal conflict.
GIS	Geographic Information Systems.
HMA	Humanitarian Mine Action.
IDP	Internally Displaced Person.
IED	Improvised Explosive Device.
IMSMA	Information Management System for Mine Action.
NSAG	Non-State Armed Group; the largest of these in Colombia are the FARC-EP and the ELN, although others exist and have existed through the country.
NTS	Non-Technical Survey, the process by which HALO identifies minefields and confirms safe land.
OAS	Organisation of American States, the international body which monitors HALO's mine action operations.
OACP	The Colombian national mine action authority, Office for the High Commissioner for Peace, formally known as Descontamina Colombia.
QA	Quality Assurance.
SHA	Suspected Hazardous Area.
SOP	Standard Operating Procedures, HALO's internal control documents, which cover demining, survey, medical processes, and other topics.
UXO	Unexploded Ordnance.

Annexes:

Annex A – Survey forms

Annex B – Vereda list

Annex C – Case Studies

Appendices:

Appendix 1 - “Socio-economic impact assessment of humanitarian demining in the municipalities of Nariño and La Unión, Antioquia, Colombia” (Translated version) – Professor Raúl Castro Rodríguez & Professor Jorge Armando Rueda Gallardo, Los Andes University*.

Figures:

*Full report is available upon request – mail@halocolombia.org

1. Introduction

1.1 Executive summary

The following report summarizes the key findings of the post-clearance assessment of the municipalities of Nariño and La Unión in the department of Antioquia, Colombia conducted by The HALO Trust in partnership with Professors Raúl Castro Rodríguez and Jorge A. Rueda, of the Universidad de los Andes Economics Department, Bogotá between 2019 and 2020.

Thanks to $161,300 of funding provided by The Office of Weapons Removal and Abatement in the U.S. State Department's Bureau of Political-Military Affairs (PM/WRA), HALO was able to return to the first municipalities declared as landmine free by a civilian organization in Colombia, to conduct an in-depth investigation into the causal link between HALO's humanitarian mine clearance activities, supported by The Department of State (DOS) from 2013 to 2016, and socio-economic development in both municipalities.

In accordance with the grant award, the following objectives were established;

- Establishment of a reconstructed baseline through a desk-based study;
- Post-intervention survey conducted in 75 veredas (48 in Nariño and 27 in La Unión);
- At least 600 household interviews conducted of direct and indirect beneficiaries of clearance, as well as households previously surveyed during non-technical survey (NTS);
- A detailed report of findings to be delivered to the DOS and the national mine action authority, AICMA,[1] upon completion of the project;
- A presentation workshop of the project findings is to be delivered in Colombia for key stakeholders (national and local authorities, other mine action operators, and the U.S. Embassy).

In addition to the investigation into socio-economic change, HALO has investigated to what degree the principal goals and objectives, as set by the DOS during initial intervention in Nariño and La Unión, have been achieved. The principal goals and objectives were:

- To protect victims of conflict and restore access to land and infrastructure;
- Return of land and infrastructure to productive use;
- Provide a safe environment for the Colombian habitants and returnees in urban and rural areas, thus facilitating the return of internally displaced people to their hometowns, normalization of local socio-economic conditions to enable repatriation, resettlement and the rehabilitation of the country.

Information was collected through desk based research, as well as household surveys and key informant interviews in both municipalities, to establish the level of socio-economic development generated as a result of humanitarian demining. A comparison was drawn between three specific target groups: direct beneficiary households, indirect beneficiary households and a control group (households located in

1 Acción Integral Contra Minas Antipersonal – formally known as Descontamina Colombia.

veredas[2] where no contamination was identified). It is important to note that no contamination was identified in the municipality of La Unión, which allowed HALO to measure level of socio-economic development between a municipality affected by IED (improvised landmines) contamination (Nariño) and a municipality where there was only suspicion of IEDs (la Unión) reported. This in turn has allowed HALO to identify the benefits of intervention through non-technical survey (NTS) and compare them with the benefits seen as a result of the removal of explosive remnants of war (ERW) through manual clearance.

Through this investigation, HALO has successfully established that there is a strong causal link between socio-economic development and humanitarian demining intervention in Nariño and La Unión. This link is demonstrated in six principal areas:

i. **Productive land use:** including cleared land and increased agricultural productivity;

ii. **Economic benefit:** through increases to property value and increased monthly income;

iii. **Social benefit:** increased connectivity within communities, return of internally displaced persons (IDPs) and reduction in levels of fear;

iv. **Municipal economic growth:** principally through the collection of property tax;

v. **Implementation of development projects:** improvements in the standard of living through municipal and third party investment in rural community projects;

vi. **Employment**: hiring of local staff from Nariño.

Through the process of land release as a result of manual clearance and NTS, HALO has created the conditions that allow for sustainable socio-economic growth in both municipalities, where rural communities no longer live in fear of accidents caused by ERW. Though the level of socio-economic development is more clearly visible in Nariño, where IEDs were identified and subsequently cleared, noteworthy benefits of HALO's intervention in La Unión were reported.

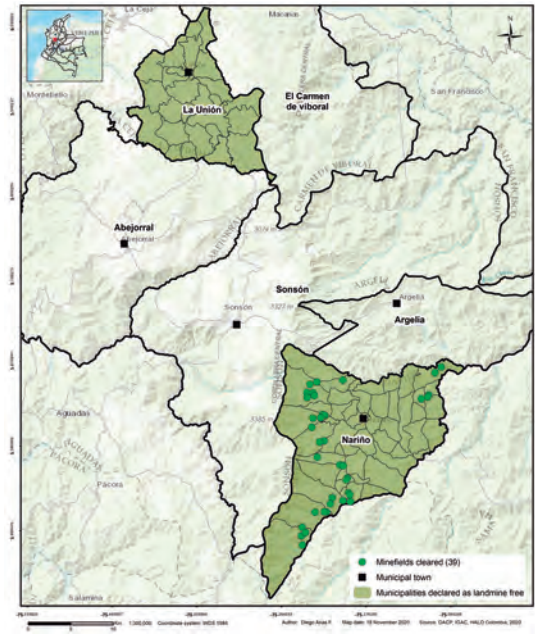
1.2 Project context

This post-clearance assessment is the first of its kind to be undertaken at a municipal level by a humanitarian demining organization in Colombia. Smaller, outcome level studies have been conducted previously, though this is the first HALO post-clearance project to have received dedicated funding from the DOS. The municipalities of Nariño and La Unión were selected for this study due to the amount of time (four years) elapsed between their declaration as landmine free and the implementation of this project. During this four year period, no humanitarian mine action operations were undertaken in either municipality, with the exception of the removal of one isolated item of ERW in early 2019. The study of socio-economic development in a post-clearance environment will allow for a clearer, more evidenced based conclusions as to the benefits of humanitarian demining in regions affected by conflict in rural Colombia.

2 A *vereda* is an administrative division within a municipality. It represents an important geographical demarcation for HALO survey and demining operations in Colombia.

The municipal town of Nariño, Antioquia.

Conflict history



Nariño was an area of strategic importance for the Fuerzas Armadas Revolucionarias de Colombia–Ejército del Pueblo (FARC-EP), who used it as both a north-south corridor and a crossing point from east to west, which allowed them to launch offensive operations from the department of Caldas into Antioquia. The FARC-EP began to lay mines in Nariño in 2000, mainly at the high points of veredas, to protect their camps and to impede the use of access roads by the military.

The municipality of La Unión was identified and assigned by the government as a high-priority municipality for civil humanitarian intervention. HALO was tasked with ensuring it to be free from the suspicion of landmine contamination beyond all reasonable doubt. During non-technical survey, where 100% of households were interviewed, no ERW was identified.

As of September 2020, there were 11,935 recorded landmine accidents across Colombia, 24% of which occurred in the department of Antioquia, affording it the accolade of the department with the highest number of accidents nationally.[3] More specifically in Nariño and La Unión, there have been 35-recorded accidents caused by ERW (29 in Nariño and six in La Unión[4]), of which 21 involved civilians.

3 AICMA downloadable spreadsheets, accessed October 2020.

4 As a result of the accidents that occurred in La Unión, military demining took place to remove the threat. No further minefields were identified.

Key demographics

The municipalities of Nariño and La Unión are located in the south of the department of Antioquia, with Nariño sharing a border with the department of Caldas. Nariño covers a geographical area of approximately 317 km^2 and La Unión an area of 198 km^2. The nearest large city is Medellin, approximately 58 km from La Unión and 146 km from Nariño. The principal economic activity in both Nariño and La Unión is agriculture though the cultivation of coffee, sugar cane, beans, corn and fruits in Nariño, and potatoes, vegetables and flowers in La Unión. Both municipalities also undertake pastoral activities, predominantly the raising of cows for dairy and meat.

The general population identifies as mestizo (mixed race) with no official indigenous reserves in either municipality.

The topography in both municipalities is mountainous with altitudes varying from 1,450 to 3,350 meters above sea level in Nariño and 2,100 to 2,700 meters above sea level in La Unión. Both municipalities receive ample levels of precipitation and sunlight, providing excellent growing conditions for a variety of crops.

The key population demographics (as at 2018[5]) are listed in the table below:

	Nariño[6]	La Unión[6]
Population (total)	10,135	21,475
% male	51.1%	48.9%
% female	49.4%	50.6%
# of households	4,216	7,281
% of population in urban areas	31%	59%
% of population in rural areas	69%	41%
% basic needs not met	15.5%	6.6%

Figure 1: Key population demographics.

Historic demining operations

In 2013, through support from the DOS, The HALO Trust began its first humanitarian demining operations in Colombia in the municipality of Nariño (grant S-PMWRA-12-GR-1060). In October 2016, thanks to continued funding from the United States, HALO achieved the historic milestone of declaring Nariño and La Unión landmine-free, making them the first municipalities in Colombia to be declared as such by a civilian organization. This intervention set the conditions for local rural communities to live in a formally declared landmine-free environment, enabling socio-economic development and the safe return of internally displaced persons (IDPs).

5 The most recent national census was undertaken by the department of national statistics (DANE) in 2018.

6 http://www.antioquiadatos.gov.co/index.php/anuario-estadistico-2018

Jorge Daza, a deminer funded by the DOS (S-PMWRA-12-GR-1060 – Q5 report), was the first civilian deminer to find a landmine in Colombia on September 20, 2013, while clearing El Morro minefield on the outskirts of Puerto Venus (visible in the background). The mine was identified and destroyed approximately 10m (30ft) behind the photographer. A total of 121 improvised landmines were identified and safely destroyed between 2013 and 2016 in the municipality of Nariño.

During the three years of operations in Nariño, HALO was successful in identifying 39 minefields with a total of 83,504 m^2 of suspected hazardous land reported. In total, HALO cleared 113,962 m^2 of hazardous area[7], the equivalent of more than 16 football fields. During clearance and EOD activities, HALO safely destroyed 192 explosive devices (121 improvised landmines, 64 small arms ammunition and seven items of UXO). NTS was conducted across the municipality of La Unión, though through HALO's investigations, no explosives or minefields were identified.

The operations conducted in these two municipalities paved the way for HALO's expansion in Antioquia to the municipalities of Carmen de Viboral, San Rafael, Abejorral and Sonón. The success achieved in Nariño created the conditions for this regional expansion and subsequent operations in Meta and Tolima departments in 2016.

Economics expert – Professor Raúl Castro Rodríguez

A crucial aspect to this project has been the support provided by Los Andes University Professor, Raúl Castro Rodríguez. Professor Castro is a specialist in micro-economics who has been teaching economic evaluation of social projects at Los Andes since 1992. His experience working with organizations such as

7 The cleared area is greater than the identified area due to expansion of minefields during clearance, based on evidence encountered during the demining process.

USAID, UNDP and the Inter-American Development Bank has been essential in maintaining an objective approach to this project and the development of data collection surveys as well as the analysis of the information gathered. The full report provided by Professor Castro (translated into English) can be seen at Appendix 1.

1.3 Key goals and objectives

The primary project goal, as described in the project proposal to the DOS, was **to investigate the causal link between HALO's humanitarian mine clearance activities and socio-economic development in the landmine-free municipalities of Nariño and La Unión, Antioquia.** This aligns with the U.S. Government's emphasis on monitoring and evaluation of foreign assistance projects as outlined in the Memorandum for Heads of Federal Departments and Agencies: Monitoring and Evaluation (M&E) Guidelines for Federal Departments and Agencies that Administer United States Foreign Assistance.[8]

During the first years of operations in Colombia, DOS funded projects to support humanitarian demining in southern Antioquia, during which time HALO focused on working toward the following key goals and objectives set by the DOS:

- **To protect victims of conflict and restore access to land and infrastructure;**
- **Return of land and infrastructure to productive use;**
- **Provide a safe environment for the Colombian habitants and returnees in urban and rural areas, thus facilitating the return of internally displaced people to their hometowns, normalization of local socio-economic conditions to enable repatriation, resettlement and the rehabilitation of the country.**

The extent to which these objectives were met are detailed in the conclusions section (section 5) of this report.

1.4 Methodology

Given that this is the first study of this kind to be conducted in Nariño and La Unión, there was very little data available relating to the socio-economic development as a direct result of humanitarian demining. Furthermore, Nariño was the first municipality that HALO starting working in, in Colombia, and as the focus at the time was on identification of minefields and their subsequent clearance, relatively little socio-economic data was recorded. In order to gather this data, household surveys were designed and implemented and two Community Outreach (CO) teams were deployed across both municipalities. The data collected through household surveys allowed for micro-level context and invaluable information on each group's previous and current socio-economic situations.

8 Memorandum for Heads of Federal Departments and Agencies: Monitoring and Evaluation Guidelines for Federal Departments and Agencies that Administer United States Foreign Assistance – Office of Management and Budget, Mick Mulvaney (Director), January 11, 2018.

In order to understand how the municipalities have developed as a whole, it was important to consider the macro-level development. A series of key-informant interviews with vereda presidents, local authorities, development organizations as well as HALO staff allowed for the collection of this information. Additionally HALO, Professor Castro, and his team conducted thorough desk investigations as to historic and current socio-economic information.

The assessment was broken down into four key phases. Details of each phase are described below:

1.4.1 Phase 1: Planning and training

Municipal authority support

Prior to the deployment of teams to the field to collect data, a significant amount of planning was required to ensure the best use of time as well as cooperation with from the local authorities. Given that HALO is well known in the region for being a demining organization, HALO wanted to avoid concerns from the community that teams were searching for minefields or that there was any threat to the community. HALO met with the Mayor of Nariño in early September to discuss the project and ensure that the correct permissions were in place to allow HALO to return to Nariño and begin data collection later in the year.

HALO met with the local Mayor of Nariño, Carlos Marín, to discuss the post-clearance assessment project.

Once approved by the Mayor of Nariño, HALO contacted the local radio station. A message was recorded and subsequently broadcast, informing residents of the municipality that HALO was returning and would be making household visits. A similar exercise was conducted in early 2020 in La Unión. In the majority of cases, residents had heard that HALO was working in Nariño and understood the reason for the visit to their homes. This was a vital step in ensuring compliance and support from the local people of Nariño and La Unión and allowed for data collection to take place without any major complications.

Survey form development and field deployment planning

In September 2019 HALO, in collaboration with the Los Andes professors, began the design of a household survey form, initially for direct beneficiary households. The process of developing the form lasted approximately four weeks, and once finalized, condensed versions were generated for the indirect and control groups. Examples of the survey forms used during this assessment can be seen at Annex A. Once finalized, the survey forms were uploaded into the digital data collection platform, Fulcrum. By using Fulcrum, the data collected was easily digitized and downloadable in a variety of formats, including Excel, making the data cleaning and analysis simple and efficient.

In addition to the household survey forms, two additional data collection forms were designed, one for key informants and another for development projects. The addition of these forms allowed for data collection of key information that contributed to the baseline as well as macro-level data, not attainable through household survey.

HALO established a field deployment plan, allocating the appropriate amount of time to each of the 75 veredas that would be surveyed over a projected six-month period. Various factors were considered in this planning, including the level of clearance undertaken (and previous related contamination), geographic location, accessibility and population density, all of which influenced the amount of time required to conduct the necessary survey. A full list of the veredas that were surveyed, the level of contamination identified and level of survey conducted in each vereda can be seen at Annex B.

Building a baseline

One of the greatest challenges to this project was the lack of baseline data from which to measure socio-economic change. In 2013, HALO's principal focus was to get teams into the field to begin NTS and manual clearance. At the time, little thought was given to collecting socio-economic data from beneficiaries and the details provided in minefield reports were basic and on occasion incomplete or incorrect. Furthermore as this type of study has not been conducted before in Nariño and La Unión, the historic socio-economic information available was relatively limited.

Drawing upon previous experience from other programs and pre-existing methodologies for such situations[9] HALO was able to overcome this issue. HALO and the Los Andes professors adopted two key approaches to reconstructing a baseline: tertiary historic data research and retrospective questioning during household survey.

HALO conducted a thorough investigation to establish a "snapshot" of socio-economic conditions prior to arrival in Antioquia in 2013 that consisted of investigating reputable sources such as university economic studies of the region, municipal development plans and publicly available statistics from the Colombian government. The information gathered during this process provided invaluable information for the general conditions in Nariño and La Unión and was the basis for many of the questions that were included in the household surveys.

However, more qualitative data regarding the social living conditions in Nariño and La Unión during the conflict was not attainable through a desk exercise. Certain information that pertains to micro-level data,

9 "Reconstructing baseline data for impact evaluation and results measurement" – Michael Bamberger, The World Bank, November 2010.

such as levels of fear within the community regarding ERW, property values of land contaminated with IEDs and other artefacts as well as the sense of connectivity between communities had to come from a primary source. To achieve this, many of the questions in the household survey were time sensitive, carefully tailored to allow HALO to gather retrospective information regarding such issues. For example, survey participants were asked "How fearful were you of ERW prior to HALO's arrival in the municipality?" with two follow up questions of "How fearful were you after the municipality was declared landmine free in 2016?" and "How fearful of ERW are you today?" The information gathered from these primary sources (beneficiary households and community members) allowed for more precise data on indicators that are more relevant to mine action.

NOTE: By gathering retrospective information in this manner, one is dependent on the memory of the person being surveyed, so there is a margin of error that needs to be considered. Every effort was made to reduce the level of bias in respondents answers (neutral, non-leading questions and ensuring not to push the respondent to certain answers), though poor memory or respondents answering un-truthfully was a possibility. These factors were considered during the data cleaning phrase of the project. Answers were compared with respondent averages, and those found to be significantly exaggerated or diminished were removed.

Training

The community outreach (CO) teams were comprised of previously trained and accredited non-technical survey personnel, 75% of whom are from the municipality of Nariño. Training was provided by the program M&E officer at the Antioquia location base in Sonsón. Teams were trained on M&E general practices as well as appropriate interview techniques for data collection. The main focus of the training was the socialization of the household survey forms, as well as administrative requirements for data management.

1.4.2 Phase 2: Data collection

The data collection phase of the project was projected to last for six months; however, due to the four-month operational stand-down as a result of COVID-19, was extended in order to allow for teams to collect the necessary data. In order to mobilize the CO teams, and to avoid any additional pressure on existing operations, two 4x4 vehicles were rented for the duration of the data collection phase.

Prior to field deployment, the CO teams received a visit from the Los Andes professors, who have extensive experience in socio-economic data collection. During the visit, HALO staff were able to have their doubts clarified and questions answered by the professors. The professors joined the two teams for a full day of data collection in the field and were provided with subsequent feedback to improve their interview techniques.

Professors Leonardo Garcia (far right) and Jorge Rueda (second from the right) accompanied the CO teams on the first day of deployment.

Bringing the professors to the field and allowing them to see, first hand, how teams interacted with the community was essential in increasing the professors' understanding of the mine action context.

HALO conducted a short pilot period of approximately three weeks to ensure that the household survey forms were well received and understood by members of the community. The feedback from the pilot period generated a number of important changes to the surveys, with adjusted versions being implemented from January 2020. The staff survey was also conducted during this phase of the project.

1.4.3 Phase 3: Data analysis

The responsibility for the analysis of the data collected by the CO teams fell predominantly with the Los Andes professors. Prior to analysis, the data was sent to the HALO headquarters Monitoring, Evaluation and Learning (MEAL) team to be standardized and organized into easily accessible Excel documents. Data standardization consists of correcting minor errors, disparities, or missing data to ensure it can be easily and methodically analyzed.

In addition to the analysis conducted by the Los Andes professors, the MEAL team at HALO's headquarters conducted their own analysis. By doing so HALO was able to analyze the data from both the economist's perspective as well as from the mine action perspective. This was an important step to test hypotheses and generate results relevant to the mine action sector.

1.4.4 Phase 4: Final report production

The final phase of the project was the production of the final report and socialization of findings with key stakeholders. As outlined in the project proposal one of the project outcomes was to ensure that

the discoveries made during this assessment are shared with the DOS, the wider mine action sector in Colombia, and other key stakeholders.

As part of their role in this project, the Los Andes professors have created their own report based on the data collected by HALO. A translated version of the economist's report can be seen in Appendix 1. The production of this report takes into consideration the analytical findings of both HALO and the Los Andes professors.

1.5 COVID-19

In early 2020, the international community was hit by the COVID-19 pandemic, which affected the implementation of this project. In late March 2020 all HALO operations were suspended, and staff were returned to their municipality of origin. HALO's priority is the safety and wellbeing of its staff, and during these uncertain times every precaution has been taken to safeguard the health of all HALO personnel and the communities in which the organization operates. Operations were suspended for three and half months until early June, where limited operations were able to re-start, including the data collection in Nariño for this project. There were however, instances where access to certain veredas in La Unión was not permitted by local communities for those who were not native to La Unión. Fortunately this had relatively little impact on the assessment as teams were able to collect information for the control group in surrounding veredas with very similar socio-economic conditions and history.

During the operational stand down, HALO sought to find ways to ensure that personnel were engaged, and continued professional development while it was not possible to conduct field operations. In order to minimize the impact on all donor projects, in addition to ensuring that non-essential staff expended their annual leave entitlement, HALO developed and distributed an extensive series of virtual training materials that allowed staff to remain active, as well as comply with national authority regulations dictating the necessity for retraining after sustained periods of operational stand downs. Through combining informative media and interactive training, HALO reduced the amount of time needed for retraining, from more than a week to just a couple of days.

HALO developed a series of biosecurity policies and protocols, dictating the measures that would be taken upon restarting operations in light of the current COVID-19 pandemic. The new protocols were shared with the local authorities in Nariño and La Unión, permitting teams to return to work in mid-June. Considering the high number of staff who are from Nariño, it was possible to continue data collection without having to work around regulations for inter-municipal travel. Where members of the trained CO teams were unable to travel to Nariño, existing NTS staff were assigned to help support the members of the teams native to Nariño.

2. Investigation Results

2.1 Summary

The results detailed in the following section are based on the information provided by community members as well as information gathered from the municipal and departmental authorities and national databases.

In total, 699 household surveys were conducted as well as key informant interviews with vereda presidents and members of the municipal mayor's offices. The analysis of the data collected was conducted by the Los Andes professors as well as internally through HALO's MEAL department in Scotland and the M&E officer on the Colombia program. The results described below are a combination of the analysis provided by all parties.

Survey sample

In order to establish the level of socio-economic development generated through humanitarian demining activities, it was necessary to collect information from three different target groups: direct beneficiaries, indirect beneficiaries and a control group (residents of veredas where no contamination was identified).

During data collection, CO teams ensured that all directed beneficiary[10] households of cleared minefields were surveyed. It is important to note that the number of direct beneficiaries surveyed during this project did not correspond to the number of direct beneficiaries initially reported when clearance was under way. The definitions for beneficiaries at that time were not well established and inaccurate figures were reported by survey staff when the minefields were initially identified. The direct beneficiaries surveyed under this project refers to those who CO teams considered direct beneficiaries under the current standard beneficiary definitions.

Information was also collected from indirect beneficiary[11] households. Teams were instructed to collect data from indirect beneficiary households at an equal or greater level than the information collected for direct beneficiary households. That is to say that if five direct beneficiary households were surveyed in one vereda, five or more indirect beneficiary households in the same vereda must be surveyed.

For the control group, considering there were significantly more veredas where no contamination was identified than were those with contamination, teams were instructed to survey as many households as possible in each vereda in one to two days, dependent on accessibility, population density and location.

A total of 699 household surveys were conducted across Nariño and La Unión; 78 with direct beneficiary households, 191 with indirect beneficiary households and 430 with control group households.

10 Direct beneficiaries are classified as those who would or do use the previously contaminated land on a regular basis.

11 Indirect beneficiaries are classified as the remaining population of a vereda who are not classified as direct beneficiaries.

2.2 Demographics

2.2.1 Conflict victims

Of the households interviewed, 76% (532 individuals) of the respondents reported that they were registered victims of the conflict. In order to obtain support from the government, victims of the conflict in Colombia are required to register with the National Victims Unit. The registry for victims has a number of distinct categories, ranging from sexual assault and murder victims, victims of displacement as well victims of ERW. To date in Colombia there are over 8,553,000 registered victims[12] of the internal conflict.

The number of victims registered for reasons of forced displacement reached 7.9 million people by the end of 2019[13]. Of the respondents interviewed during survey, 79% (549 individuals) reported that either they or someone in their immediate family had been displaced. 91% of respondents who had been displaced reported that the principal reason for being displaced was a "the threat or risk to their life or physical integrity caused by the armed conflict", with the remaining 9% citing other reasons such as lack of work or natural disaster. More details on displacement can be seen in section 3.1.

2.2.2 Age, gender and household composition

Teams gathered information from both men and women, and information was collected from one person of each household.

Respondent Gender	Direct Beneficiary	Indirect Beneficiary	Control
Male	42%	74%	47%
Female	58%	26%	53%

Figure 2: Respondent disaggregation by gender.

By collecting information from both men and women, HALO sought to eliminate any response bias caused by traditional gender roles in Colombia.

Survey participants were also asked to provide information on the composition of their households, that is to say, who is currently residing in the household, generating the following results:

	Direct Beneficiaries		Indirect Beneficiaries		Control	
Age	Men	Women	Men	Women	Men	Women
< 18	36	37	93	55	208	219
18 – 60	79	66	163	157	415	380
61 and over	14	8	41	30	119	113
Total	**111**	**129**	**297**	**242**	**724**	**712**
	240		**539**		**1,436**	

Figure 3: Current household composition.

12 https://cifras.unidadvictimas.gov.co/

13 https://www.refworld.org.es/pdfid/5e69300f4.pdf

In total, the information collected through the 699 household surveys represent a population of 2,215 people (1,150 men and 1,065 women) across both municipalities. In addition to gathering data related to current household composition, direct beneficiary households were asked to provide information on the historic composition of their households over four distinct periods in time: before the presence of IEDs (prior to 2000), during the presence of IEDs (2001-2016), immediately after the municipality was declared as landmine free (2016-2019) and current day (2020). The results obtained are as follows:

	Before IEDs		IEDs present		Immediately after handover		Current	
Age	**Men**	**Women**	**Men**	**Women**	**Men**	**Women**	**Men**	**Women**
< 18	58	57	49	63	41	59	36	37
18 – 60	105	78	103	75	90	72	79	66
61 and over	3	5	5	8	9	6	14	8
Total	**166**	**140**	**157**	**146**	**140**	**137**	**129**	**111**
	246		**306**		**277**		**240**	

Figure 4: Historic household composition of direct beneficiary households.

The reason this information was gathered was to assess as to whether the presence of IEDs, and their subsequent clearance, had any effect on the size of the household. As shown above, the presence of mines had relatively little impact on household composition, with the size of direct beneficiary households actually increasing during the time when IEDs were present. The reason for the subsequent decrease can be largely attributed to urban migration and increased freedom of movement when the FARC-EP were expelled from Nariño in 2009.

The details of the heads of household are captured in the table below:

	Direct Beneficiary HH	Indirect Beneficiary HH	Control HH	Average
% Male	75%	70%	75%	73%
% Female	25%	30%	25%	27%
Average Age	52	54	52	52.7
% born in the municipality	79%	74%	79%	77%
% lived in municipality entire life	80%	77%	80%	79%

Figure 5: Head of household demographics.

2.2.3 Education

Survey respondents were asked about the level of education of the head of household, generating the following results:

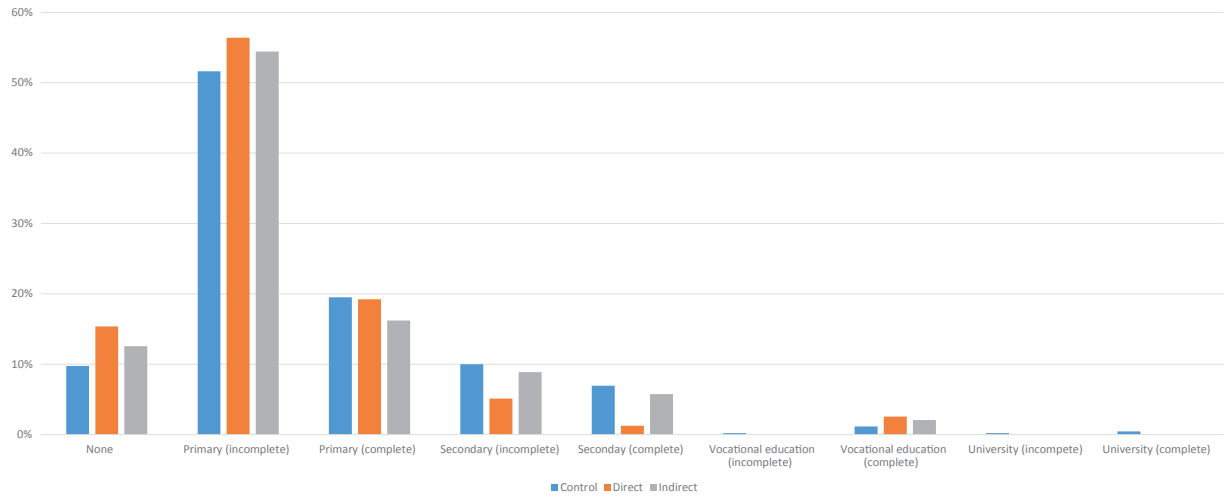


Figure 6: Head of household education level.

More than 50% of heads of household in all three groups reported to have incomplete primary education and 11% reporting to have no education whatsoever. Taking into account the rural location of the respondents, this falls in line with national averages, where according to the DANE, 41.7% of Colombians have received only primary education[14].

2.2.4 Living conditions

As shown in the table at Figure 7, according to the multidimensional poverty index[15], 51.8% of the population in Nariño currently live in poverty, compared with La Unión reporting 23% of the population living in poverty. According to the DANE, in 2005, it was recorded that 34.2% of the population in Nariño and 18.4% of the community in La Unión did not have their basic needs met. Comparatively, in 2020 the DANE reported a significant reduction in these figures, with Nariño dropping to 15.5% and La Unión to 6.6%.

Despite the fact that over half the population of Nariño are living in poverty, the reduction in percentage of those whose basic needs are not being met is an encouraging sign of socio-economic growth. Though this cannot be attributed entirely to HALO's intervention, land release through humanitarian demining activities has either directly or indirectly contributed to this reduction. Without the declaration of these municipalities as landmine free, the implementation of development projects to improve basic services and living conditions would have been near impossible[16].

14 https://www.dane.gov.co/index.php/estadisticas-por-tema/educacion/poblacion-escolarizada/educacion-formal

15 https://www.dane.gov.co/index.php/estadisticas-por-tema/pobreza-y-condiciones-de-vida/pobreza-y-desigualdad/medida-de-pobreza-multidimensional-de-fuente-censal

16 Though not a legal requirement, development projects are not implemented until a vereda/municipality is declared as free from suspicion of ERW through clearance and NTS or NTS alone, as implementers will not risk injury to their personnel.

	Nariño			La Unión		
Indicador	**Urban**	**Rural**	**Average**	**Urban**	**Rural**	**Average**
Illiteracy	13,90%	28,70%	23,30%	7,90%	14,60%	10,50%
Low educational achievement	65,00%	93,20%	82,90%	55,30%	82,80%	65,80%
Barriers toEarly Childhood Care Service	1,10%	1,70%	1,50%	1,20%	1,80%	1,40%
Barriers to accessing health services	7,40%	1,70%	3,70%	3,70%	7,90%	5,30%
Dependency rate	36,90%	33,00%	34,40%	21,90%	25,50%	23,30%
Critical overcrowding	6,10%	4,20%	4,90%	6,20%	4,00%	5,30%
Inadquate human waste disposal	1,60%	71,80%	46,30%	0,30%	14,20%	5,60%
Non-attendence at school	3,30%	10,00%	7,50%	3,40%	5,30%	4,10%
Inadequate exterior wall material	0,40%	0,40%	0,40%	0,10%	0,10%	0,10%
Inadequate floor material	0,00%	1,60%	1,00%	0,00%	0,50%	0,20%
School backlog	16,20%	26,20%	22,50%	18,60%	26,70%	21,70%
No access to improved water source	0,70%	78,90%	50,50%	0,10%	36,80%	14,10%
No health insurance	9,60%	6,30%	7,50%	12,50%	12,30%	12,40%
Child labor	2,30%	7,80%	5,80%	1,90%	4,40%	2,90%
Informal work	85,30%	94,20%	90,90%	77,60%	81,00%	78,90%
Total	**28,30%**	**62,80%**	**51,80%**	**14,80%**	**35,80%**	**23,00%**

Figure 7: Multidimensional poverty index for La Unión and Nariño, 2020.

In addition to the information provided through the DANE, CO teams collected data regarding the physical conditions of each of the dwellings of the households surveyed. The following results were reported:

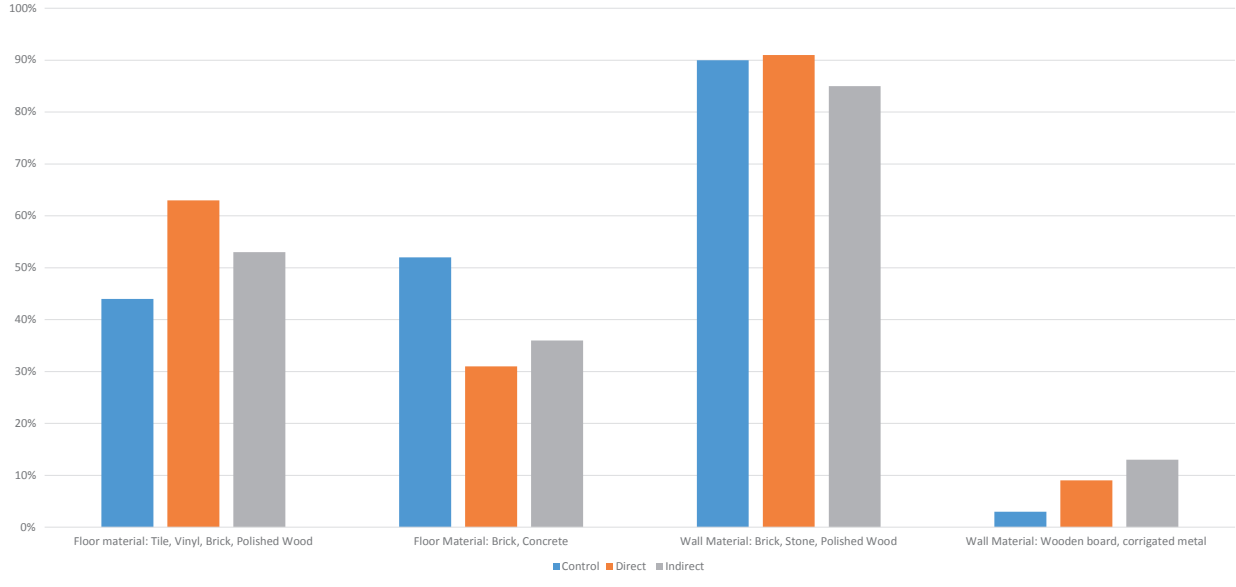


Figure 8: Component construction materials of household dwellings.

99% of the households visited were houses, with the remaining one percent as apartments or rented rooms. On average, the households were made up of three rooms, not including the kitchens, bathrooms

or garages, of which an average of two rooms were used as bedrooms. The above figure demonstrates that the majority of the materials used for the construction of dwellings are durable and provides both security and comfort for its residents. This demonstrates that though poverty levels are high, residents of both Nariño and La Unión have adequate living conditions that provide shelter from the elements and a degree of comfort.

An example of a typical house in rural southern Antioquia.

As part of the assessment of living conditions for each of the target groups, respondents were asked how they obtain their water for cooking. Over 70% of direct beneficiary households reported to collect their water for cooking from a nearby river or stream, compared with 59% of indirect beneficiary households and 57% of control group households reporting the same source for water, which demonstrates the need for clearance in the most vulnerable communities.

In terms of sanitary services, 65% of direct beneficiary households reported to have a lavatory in their homes that was not connected to any waste disposal system and 24% had a lavatory connected to a septic tank or sewage system. Comparatively, 52% of indirect beneficiary households reported to have a lavatory without connection and 24% with a connection to either a septic tank or sewage system and 44% of control group households reported having a lavatory with a connection to either mains sewerage or septic tank and 47% having a lavatory with no connection.

These results are as expected, given that majority of direct beneficiaries live in the higher altitude regions of Nariño, where minefields were identified, it is harder to install water and sewage management commodities. In areas that are flatter, and more easily accessible, such as the veredas that make up the control group population, the level of sewage management is understandably higher.

2.2.5 Public services

Survey respondents were asked to provide information on the public services that their household had available to them. The results obtained were as follows:

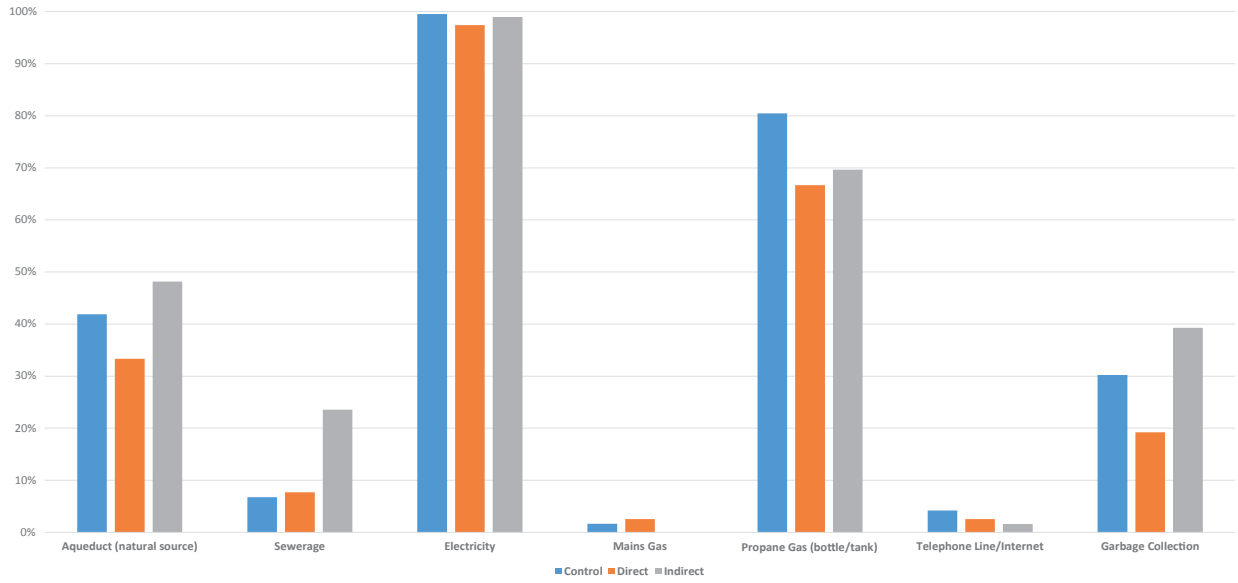


Figure 9: Percentage of households that have access to services.

According to the data collected, the most widely available public service in both municipalities was electricity, with 99% of households reporting access to this service. On average, only 41% of households reported access to water through aqueduct. Aqueducts are normally established at a vereda level (though sometimes through the municipal government), pumping water from a natural spring that can be shared among a number of residences. The majority of rural households collect their water from natural sources on or close to their property. With regards to sewerage and mains gas, this becomes harder to provide the further the vereda from the municipal or urban center. This is largely due to the mountainous terrain and the local government's inability to provide this service in a sustainable way. Therefore, the majority of communities that are further away from the urban center must rely on bottled propane gas. Similarly, considering the level of accessibility to many veredas, garbage collection is not feasible and waste is either burned or buried. The mountainous terrain also presents an issue for the provision of telephone cables and internet. For this reason, only 3% of households surveyed confirmed access to this service.

2.2.6 Household economics (ingress and expenditure)

In order to understand the economic situation of the communities surveyed, it was important to understand how money is earned and spent and whether the tendencies for economic ingress and expenditure change over time as a result of the presence of IEDs.

Firstly, HALO looked at how households in rural communities earned their money and their monthly income over time. Given that there was no baseline data to work from, HALO was obliged to rely on the memories of respondents, asking questions referring to historic periods in time. Direct beneficiary households were asked to provide information about their financial ingress over four time periods, before the appearance of IEDs, during the presence of IEDs, immediately after the handover of Nariño as landmine free and today. Indirect beneficiary and control group households were only asked to provide information regarding their current earnings and expenditure.

It is important to note that information regarding economic ingress and expenditure is often a private, sensitive subject and there were a small number of respondents who declined to provide this information. The results for direct beneficiary household responses are captured in Figure 10 below:

	Direct Beneficiary HH		
Period	Respondents	Average (reported)[17]	Average (equivalent 2020)
Before Mines	76	$93	$189
During Mines	76	$81	$117
After Handover	76	$122	$154
Current	77	$169	$169

Figure 10: Average direct beneficiary household economic ingress over time in USD.

In order to better understand the fluctuations in prices, the average equivalent value in Colombian pesos has been included in column four. As shown above, there was a sharp drop in economic ingress (38%) during the period that IEDs were present in Nariño. Once the IEDs were cleared, economic ingress for direct beneficiary households began to rise, though the current ingress being achieved is still lower than what it was prior to the appearance of IEDs. This can be attributed to a number of factors, including fewer people of a working age living in rural areas, depreciation in the value of market goods being sold and that Colombia is still recovering economically from more than 50 years of conflict.

The table below captures the results of current average monthly economic ingress for the three target groups, broken down by income source:

	Direct Beneficiaries			Indirect Beneficiaries			Control		
Source	# resp.	Average[17]	S.D	# resp.	Average	S.D	# resp.	Average	S.D
Salary	7	$171	$80	15	$188	$93	53	$234	$111
Day labor	41	$95	$56	115	$100	$65	204	$131	$91
Rental of land	0	$0	$0	4	$59	$35	30	$176	$190
Sale of crops	48	$160	$144	97	$106	$75	192	$122	$138
Sale of animals	10	$109	$125	16	$90	$105	36	$108	$183
Sale of products	12	$294	$589	16	$152	$147	84	$358	$689
Financial support	27	$39	$60	76	$26	$19	203	$31	$26
Other	2	$176	$124	7	$61	$18	24	$115	$129
Total	**78**	**$241**	**$258**	**185**	**$168**	**$104**	**419**	**$265**	**$368**

Figure 11: Current average economic ingress of target groups (USD).

The above table captures the number of respondents for each income source, the average ingress per source and the standard deviation (S.D)[18] of data. As is shown, the current average income for the direct beneficiary households is similar to the control group households, indicating that in terms of economic

17 Values converted from Colombian pesos (COP) to USD at the current rate of 3,800 COP to 1 USD.

18 The standard deviation refers to the margin of difference above or below average for 2/3 (two thirds) of the data collected.

ingress, the historic presence of mines is no longer affecting direct beneficiary household's capacity to earn. Indirect beneficiary households reported a lower average monthly ingress, though this is largely attributed to a lower volume of goods, animals and crops produced and sold due to smaller average property sizes (see Figure 17).

Direct beneficiary households were asked whether the means of economic ingress changed over the established four time periods. There was a marginal increase in the number of respondents reporting an increase in day laboring, though on average, the source of economic ingress remained unchanged throughout the time periods in question.

As well as gathering data on economic ingress, HALO collected information regarding average monthly expenditure. The results from the data gathered are as follows:

	Direct Beneficiary HH			Indirect Beneficiary HH			Control HH		
Expenditure	**# resp.**	**Average[17]**	**S.D**	**# resp.**	**Average**	**S.D**	**# resp.**	**Average**	**S.D**
Food	78	$95	$61	190	$79	$45	425	$98	$90
Education	32	$19	$44	73	$11	$15	175	$18	$39
Health	35	$12	$18	93	$8	$13	188	$14	$18
Public services	71	$12	$15	180	$12	$17	413	$14	$17
Transport	36	$14	$11	73	$12	$9	227	$11	$9
Housing	0	$0	$0	9	$28	$31	24	$111	$120
Recreation	51	$13	$12	76	$11	$13	113	$12	$11
Internet	0	$0	$0	3	$11	$7	20	$18	$7
Payment of debts	32	$48	$77	75	$38	$31	181	$59	$65
Other	6	$70	$97	20	$21	$2	27	$45	$36
Total	**78**	**$159**	**$128**	**191**	**$125**	**$79**	**425**	**$170**	**$141**

Figure 12: Current average monthly expenditure of target groups (USD).

As with the average monthly ingress, the level of expenditure between direct beneficiary and control group households is similar, indicating that cost of living between the two groups is roughly the same. The lower expenditure of the indirect beneficiary households is proportional to the average monthly economic ingress.

As shown above, the principal monthly costs for households are: food, public services (bills), transport and healthcare. Respondents were also asked if their monthly ingress was sufficient to cover all costs of the household, generating the following results:

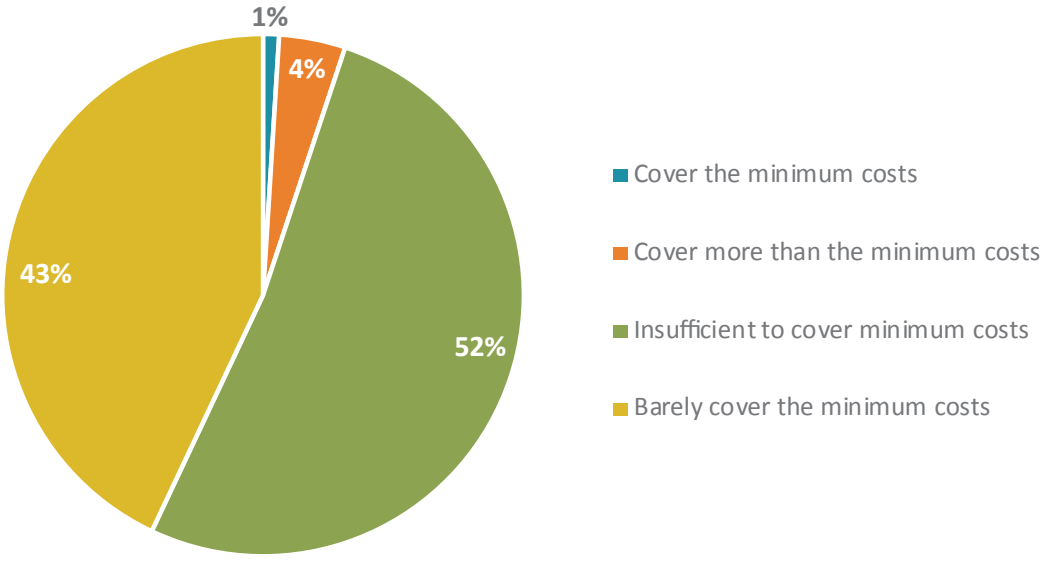


Figure 13: Minimum cost coverage across all target groups.

The graphic above demonstrates that 52% of respondents reported that their earnings were insufficient to cover the minimum costs of the household with 43% reporting that their costs are barely covered by their earnings and just 4% reporting that their earnings more than cover their basic costs. When asked how much would be required in order to be economically comfortable, on average, respondents reported that a monthly ingress of 1,141,000 COP (approximately $300 USD) would be sufficient.

2.2.7 Impact of explosive devices on households

Of the households surveyed, only three respondents replied that they or a family member had been involved in an accident caused by ERW. An additional ten respondents reported that they had lost cattle due to incidents involving ERW, with a total of 14 cows lost.

Despite the fact that a relatively low number of households were directly affected by accidents or incidents caused by ERW, 88% of direct beneficiary households and 94% of indirect beneficiary households reported that the knowledge of the presence of IEDs in their vereda caused fear and uncertainty and directly impacted their day to day lives. The social interaction between residents of contaminated veredas was also affected by the presence of ERW, details of which are described in section 2.5.

Case Study - William Otálvaro

William Otálvaro (42) was born in the municipality of La Ceja, in the department of Antioquia. In 1982, William moved to Nariño where he lives in the vereda of San Miguel, working the land to support his family.

For a while, William and his wife Marina lived peacefully, raising livestock and growing crops on their land. When the armed conflict arrived in his vereda, everything changed.

Conflicting armed groups laid claim over his land and fighting erupted soon after, bringing an end to his peaceful life.

In 2004, in spite of the fighting, William and a friend, Ildebrando, left for the neighboring vereda of San Pedro Arriba, to vaccinate one of his father's cows. They knew that the path they needed to take was used by the guerilla and was not safe, but it was the quickest route to get to his destination. Shortly into the journey, William and Ildebrando activated an IED. William suffered a severe injury to his hand, burns to his body and sustained multiple shrapnel wounds and Ildebrando lost his eye in the accident. Thankfully, they managed to get to safety and were taken to the local hospital in Sonsón.

Once he was well enough to leave, William returned home to San Miguel, where he stayed with his father. The accident left him traumatized, depressed and he felt he could no longer work. William's wife, seeing his fragility did all she could to motivate him, *"without Marina, I don't know what I would have done. She saved me."* Through the support of his family, William got back on his feet and returned to work on his farm.

The conflict in Nariño worsened in the mid 2000's and William made the decision to move to the municipality of La Ceja in 2006 as he feared that the armed groups would forcibly recruit his young son to arms. Although he had managed to establish a life in La Ceja, it was expensive and he was constantly concerned about his farm. A year later, he decided to return home as the fighting in Nariño had subsided. When he returned, he was hesitant to work the land for fear of IEDs, though with the arrival of a new baby, he had no other option in order to feed his family. There were still parts of his farm that he feared to use, limiting the productivity of his land.

In 2013, HALO began conducting survey in San Miguel and visited William and his family as part of the initial investigations in the municipality. William provided invaluable information as to the presence of IEDs in his vereda. The land where William had his accident was cleared in 2014 and 12 IEDs were safely destroyed, preventing further injury. Furthermore, William was employed by HALO as a guard, to look after the demining camp whilst clearance teams were not working.

Thanks to the clearance on his property, William is now able to use all of his land in confidence that it is safe and is using the cleared area to graze cattle that he has since purchased. The clearance of the minefield on his land has also provided access to a fresh water source, which has in turn enabled him to start a fish farming project, bringing further economic stability to his family.

William shared with HALO that his life is once again peaceful, and that the mined land that once was a symbol of violence today provides an opportunity for an improved livelihood for him and his family. Thanks to the work carried out by The HALO Trust and the support from the U.S government, the people of Nariño have the opportunity to develop their economy and their community, safe in the knowledge that mines are gone, for good.

2.3 Effects of IED laying and clearance

2.3.1 Land Use – Cleared areas

In order to establish the historic and current land use of the 113,962 m^2 of land that was cleared in Nariño, direct beneficiary households were asked to provide information of the land use prior to the appearance of IEDs, immediately after the land was handed over and how it is used currently. The division of land use is captured in the graphic below:

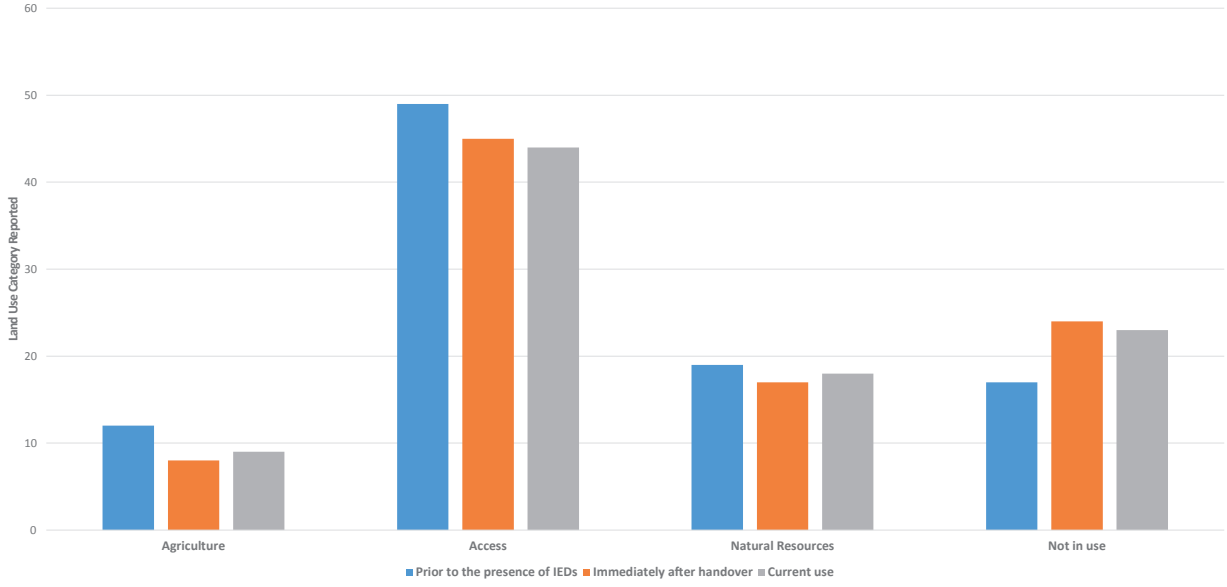


Figure 14: Land use category reported by direct beneficiaries.

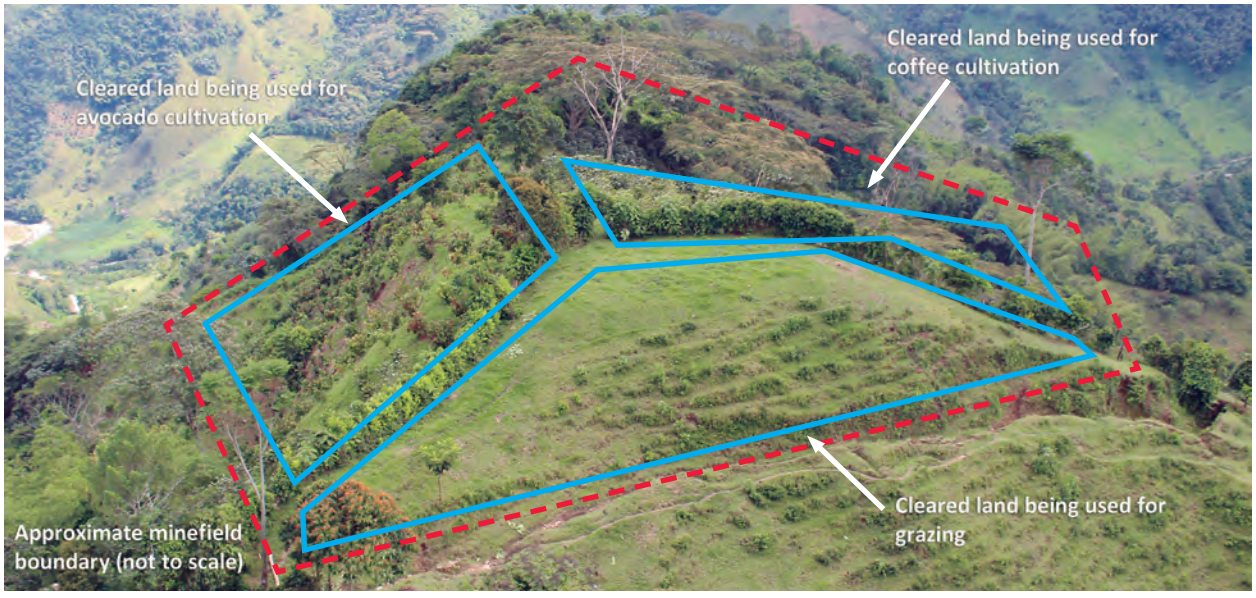
The above figure demonstrates the land use of the minefields cleared by HALO in Nariño from 2013 – 2016. The land use displayed above ranges from 10%-100% of the cleared land for each specific use. A number of minefields have multiple land uses, including not in use. That is to say in some instances, a cleared area could be categorized as 50% natural resources and 50% not in use.

Seventeen (22%) respondents reported that none of area cleared is currently in use, of whom eight responded that prior to the appearance of IEDs the land was not in use, and 18 respondents reported that cleared land was not in use immediately after the handover. When asked why the cleared land was not currently being used, seven respondents reported that there was no need to use the land as alternative routes could be use, or that the property had changed ownership and they were no longer permitted to use the land. Two respondents reported that they had insufficient resources to use the land, two further respondents reported that the land was set aside for conservation purposes and one reported that he was afraid to use the land. The final respondent, who was afraid to use the land, was a

landmine victim and despite assurances that the land had been cleared, preferred not to use it. Though this type of behavior is not common, it is understandable, given the trauma of the accident inflicted on the individual and his reluctance to return to the accident site.

Cleared land not being used is concerning; however, further analysis revealed the cleared minefields that were entirely not in use equate to 13,803 m^2, or just 12% of the total cleared area in Nariño. This means that despite some of the cleared land not being used, approximately 88% of the cleared area is being used productively, an achievement that would not have been possible had it not been for HALO's intervention.

The distribution of land use between agriculture, access and natural resources falls in line with general tendencies in Colombia. IEDs were laid by the FARC-EP and other non-state armed groups (NSAGs) to defend camps and strategic strongholds in rural areas, resulting in heavy mine laying on pathways and access routes. Agricultural land was mined less frequently as the intended targets were military personnel as opposed to members of the community. An example of cleared land that is currently being used for agricultural purposes can be seen in the image below:



Monte Redondo minefield in El Bosque vereda was handed over in June 2016 and was the last minefield to be completed in Nariño. The land has since been put to productive use by a local farmer, growing both coffee and avocado as well as using the land for grazing his animals.

2.3.2 Agriculture - General

Further to understanding the historic and actual land use of areas that had undergone manual clearance, HALO collected general data on how beneficiaries use their land and whether the presence of IEDs had an effect on how their land was used and is used currently.

The direct beneficiary households surveyed reported that on average, they owned an area of 11 ha (hectares) compared with an average of 4.3 ha reported by indirect beneficiary households. Of the 78 direct beneficiary households surveyed, 79% reported that agriculture was the primary land use and principal source of income, whereas only 61% of indirect beneficiaries reported that agriculture was the

principal land use. The primary crops grown in Nariño are coffee, sugarcane, beans, plantain, avocado, cacao and corn.

In order to evaluate the effect of the presence of IEDs on agricultural tendencies between direct and indirect beneficiary households, respondents were asked to provide information regarding the area cultivated, in fallow and used for grazing land prior to the presence of IEDs (direct beneficiaries only), immediately after the municipality was handed over and currently. The results are captured in the table below:

	Direct Beneficiaries						Indirect Beneficiaries			
	Prior to IEDs		After Handover		Current		After Handover		Current	
	Av.	S.D[19]	Av.	S.D	Av.	S.D	Av.	S.D	Av.	S.D
Cultivated (ha)	1.51	2.18	2.08	2.44	2.49	2.29	1.39	1.35	1.92	1.22
Fallow (ha)	3.53	6.13	4.13	7.42	3.84	6.49	1.44	3.50	1.54	4.26
Grazing (ha)	2.85	6.08	3.62	8.46	3.85	9.38	1.22	3.92	1.40	3.94

Figure 15: Agricultural land use over time.

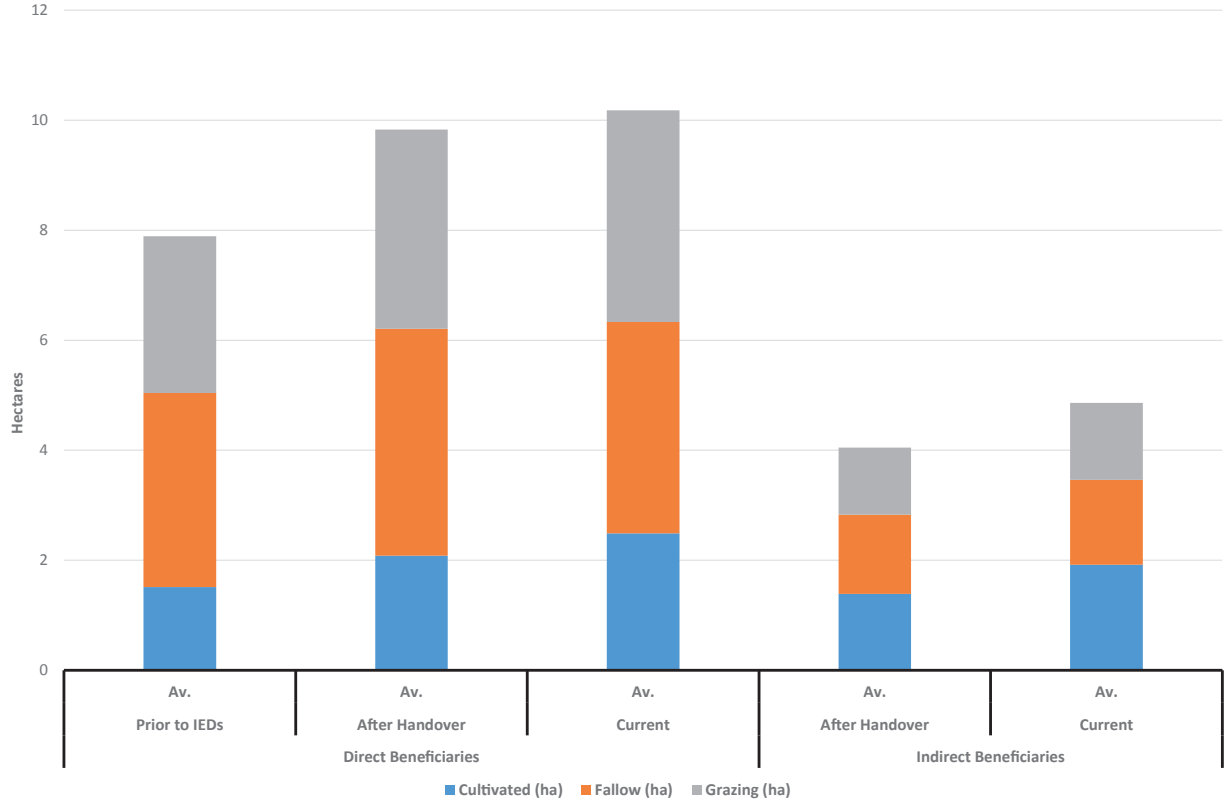
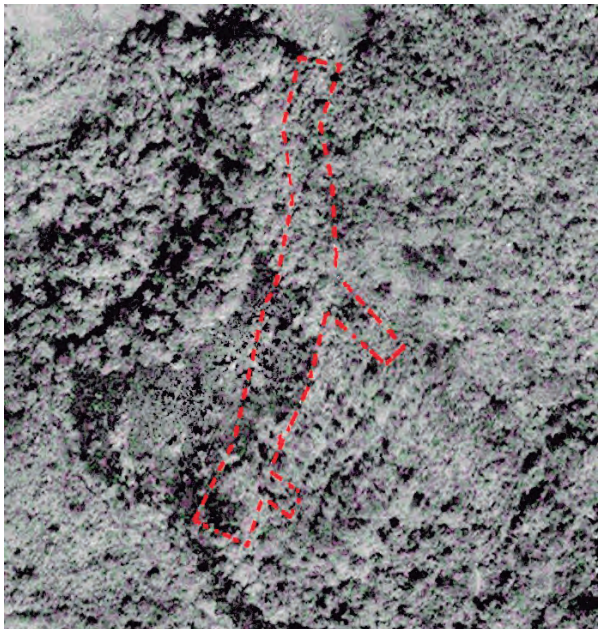


Figure 15b: Agricultural land use changes over time by beneficiary group.

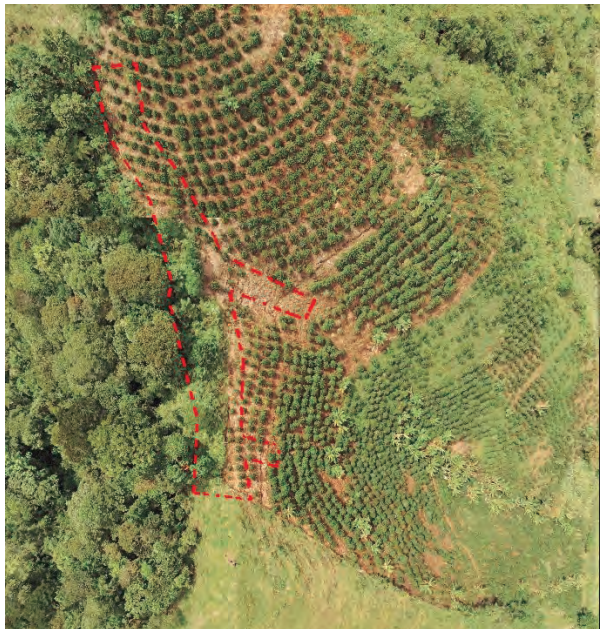
19 S.D. Standard Deviation.

In the case of both direct and indirect beneficiary households there is a clear pattern of increased land use for both cultivation and grazing land once the municipality was declared as landmine free. This increase in the use of land for agriculture demonstrates the confidence that both beneficiary groups display in the cultivation of their land. This in turn will see an eventual increase in income through the sale of crops and safe space for grazing animals.

The images below show the identified and cleared minefield, El Everest, in the vereda San Pedro Arriba.



El Everest – June 2012



El Everest – October 2020

What the above images clearly demonstrates is that clearance of this small minefield has created the safe conditions and the confidence of the property owner to cultivate a large coffee plantation. When speaking to the property owner, he confirmed that had clearance not taken place, the productive land would have remained abandoned.

2.3.3 Access

As shown in Figure 14, the most common land use of the cleared areas is access. 68% of direct beneficiary reported that access routes had been blocked by the presence of IEDs in their veredas, and the blocked routes were abandoned for an average of seven and a half years. Respondents reported that 74% of the routes that were blocked were connecting routes between farms or properties, 47% on access routes within the same property and 13% reported that access routes to the municipal town were impeded. 60% of respondents reported that prior to the presence of IEDs the access route was used twice a week, or more.

Of the routes that were blocked, 45% of respondents reported that it was the only access route leading to the desired destination. Where alternative routes were available, it was reported that an average increase of 30 minutes travelling time (either by foot or by horseback/mule) though in some extreme cases the additional travel time was over five hours walk. Three respondents confirmed that the presence

of IEDs blocked access for their children to reach schools, the result being the abandonment of seven children's educations.

When asked about the principal impact on the community of IEDs blocking access routes, 76% reported that the blockage increased travel time and further increased social separation of the community. Furthermore, 19% of respondents reported that due to the blockage as a result of IEDs, potentially useful land for cultivation was abandoned or lost.

As a result of manual clearance, 100% of respondents reported that it was now far easier to travel within their vereda and to bring their goods to market; however, there was no monetary saving recorded in facilitating this process. Respondents were also asked whether the clearance of access routes in their veredas had improved access to services. The results are captured in the chart below:

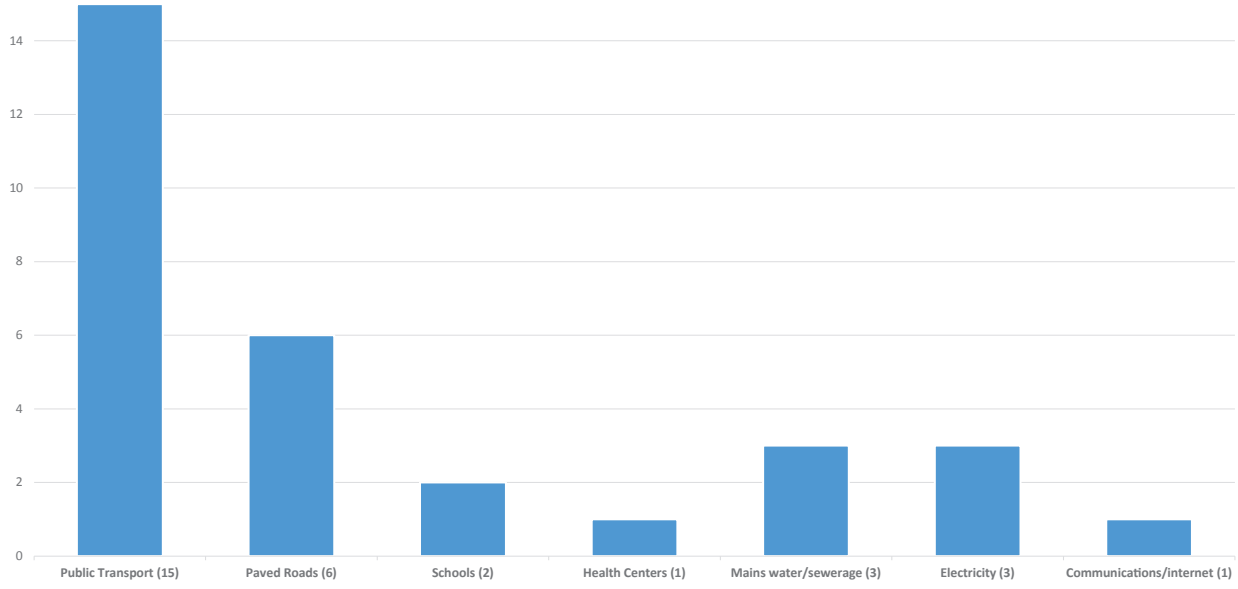


Figure 16: Number of respondents reporting improved access to services as a result of clearance of access routes.

Further to the results shown above, three respondents reported that as a result of clearance of access routes, they were more easily able to gain employment, allowing them to work in areas that were previously inaccessible.

2.3.4 Natural resources

In rural communities across Colombia, there is a high level of dependence on natural resources in order to survive. Natural sources of water and fuel (firewood) are integral to rural living, and the presence of IEDs often forces people to put their lives at risk when collecting these essential resources. It was recorded that 60% of direct beneficiary households continued to collect natural resources in areas suspected of ERW contamination, directly risking their lives due to a lack of other options.

It was reported that the behavior if both direct and indirect beneficiary households relating to the extraction of natural resources did not change depending on the presence of IEDs. In the occasions where the land use of the identified hazardous area was 100% for natural resources, 40% of direct beneficiary households reported that they continued to gather resources, but in a different area. Of these 40% of

direct beneficiary households, 97% reported that there was no economic consequence of changing the source of that particular resource, though in four specific cases there was an increase in the amount of time required to gather resources of approximately one hour.

2.4 Municipal Economics

2.4.1 Property value

One of the most pertinent discoveries of this investigation was how the presence of IEDs and other ERW affected property values. It was assumed that the presence of landmines on an individual's property is a hindrance to selling said land, though the results discovered show that the devaluation of having IEDs in the vereda in which IEDs were laid was considerable, compared with those where no contamination was identified. Of the direct beneficiary households surveyed, 96% reported that their property had decreased in value as a result of the presence of IEDs, and 90% of indirect beneficiary households reported the same tendency. In order to establish the level of change in property value, all three groups were asked to provide information on the estimated value of the property before and during the presence of IEDs as well as after clearance and current value. It should be noted that the information provided was subjective and not verified by real-estate professionals.

Average property sizes are captured in the table below:

	Direct Beneficiary HH	Indirect Beneficiary HH	Control HH
Average property size (ha)	11	4.3	3.5
Average dwelling size (m^2)	59.3	57.4	67.3

Figure 17: Average property and dwelling sizes.

As is commonplace across the globe, property prices have a tendency to increase over time. In the case of the control group, this was true, as is shown in the table below:

Time period	Average property value[20] (actual prices)	Average property value (relative prices 2020)	% Change
Prior to 2000	$3,836	$7,930	-
2000 – 2015	$6,599	$9,596	+21%
2016	$15,042	$18,891	+97%
2020	$23,906	$23,906	+27%

Figure 18: Average property prices in USD over time – Control Group Households.

The third column of the above table shows the relative prices as they would be in 2020. The percentage change in the fourth column refers to to the change in value from the previous time period. As shown, there is a steady increase in property value over the 20-year period for property owners in veredas of the control group, where no contamination was identified. The below tables capture the information

20 Refers to total value of the property (land and dwelling). An exchange rate of 3,800 COP to 1 USD was used to calculate USD figures.

provided on property values over the same time periods for both direct and indirect beneficiary households where ERW contamination was identified and subsequently cleared:

Time period	Average property value (actual prices)	Average property value (relative prices 2020)	% Change
Prior to IEDs	$5,982	$12,367	-
During the presence of IEDs	$1,382	$2,009	-84%
Immediately after handover	$10,097	$12,681	+531%
Current	$14,482	$14,482	+14%

Figure 19: Average property prices in USD over time – Direct Beneficiary Households.

Time period	Average property value (actual prices)	Average property value (relative prices 2020)	% Change
Prior to IEDs	$3,702	$7,653	-
During the presence of IEDs	$964	$1,402	-82%
Immediately after handover	$6,011	$7,550	+438%
Current	$9,121	$9,121	+21%

Figure 20: Average property prices in USD over time – Indirect Beneficiary Households.

The information displayed above shows a number of important results. Primarily in the case of direct and indirect beneficiary households, there is a sharp decrease in value of property, 84% for direct beneficiary households and 82% of indirect beneficiary households during the time when IEDs were present in the vereda. Bearing in mind that only 55% of direct beneficiary households surveyed reported that there was contamination on their property[21]; the suspicion of IEDs had an effect on property value for the entire community within that vereda. Furthermore, prior to HALO's arrival, minefields were only suspected, not confirmed, meaning that the mere suspicion of the presence of landmines was sufficient to cause a drastic depreciation in property value.

The second important result to note from the above tables is the percentage increase in property value once the municipality of Nariño was declared landmine free. In the cases of both direct and indirect beneficiary households, the value of property returned to similar levels prior to when IEDs first appeared in the vereda. Though this is positive, compared with the increase seen by the control group households during the same period (97% increase), there were little to no economic gains for direct and indirect beneficiary households during a period of 15 or more years. Furthermore, when questioned during survey, both direct and indirect beneficiary households reported that selling their property during this time was near impossible, as virtually nobody was willing to buy land if there was a suspicion of landmines.

Thirdly, current property values of residents of veredas where contamination was identified and subsequently cleared, compared with those in vereda where no ERW was identified, are considerably lower. Despite the average property size of a direct beneficiary household being almost three times the size of that of the control group, there is a difference in average value of more than $9,400 USD. From 2000 to today, the control group's property values have more than tripled, while the direct beneficiaries'

21 A direct beneficiary is classified as someone who uses the land regularly, they do not necessarily have to own the land that is going to be or has been cleared to benefit directly from clearance.

values have increased just 17%. What this demonstrates is that the presence of mines has stunted property values by more than 15 years.

The variation of property prices dependent on the presence or otherwise of ERW clearly demonstrates the economic impact that IEDs have on a community's ability to generate wealth through property investment compared with communities where no ERW contamination was identified. However, as a direct result of clearance, property values increase considerably, providing opportunity for owners to amass the wealth of land ownership once again.

2.4.2 Municipal income, expenditure

In order to understand the broader impact of the presence and subsequent clearance of IEDs in Nariño, the Los Andes professors conducted an investigation into the economic ingress and expenditure at a municipal level, as well as the municipality's capacity to collect taxes. Further details can be seen in the Los Andes economist's report in Appendix 1.

When looking into the economic growth of Nariño and La Unión, it is clear to see that the presence of IEDs has a negative impact across a municipality. One would expect that two municipalities, sharing similar characteristics in terms of agricultural production, would see similar trends of economic growth over time (in a conflict-free environment), however this has not been the case.

In 2003, Nariño reported a total income of $8 billion pesos (USD $2.1 million[22]) and expenditure of $7.8 billion pesos (USD $2 million) and in 2018, reported an income of $15.1 billion pesos (USD $4 million) and an expenditure of $16.7 billion pesos (USD $4.4 million)[23]. This represents an increase of 88.8% in terms of income and increase of 114% in expenditure over the 18 year period. The annual income and expenditure for Nariño is captured in the graphic below:

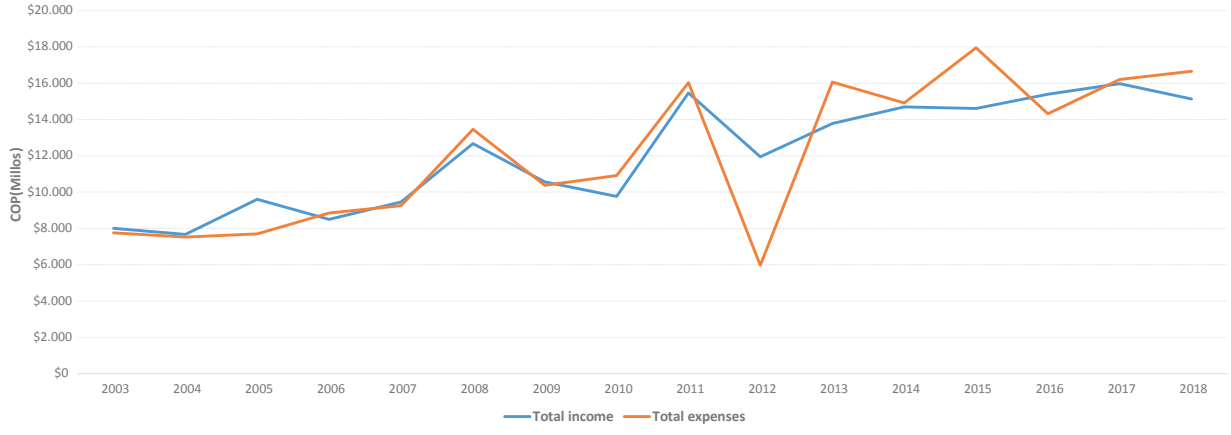


Figure 21: Average annual income and expenditure for Nariño: 2003 - 2018.

In La Unión, in 2003 there was a reported income of $41.2 billion pesos (USD $10.8 million) and an expenditure of $42.3 billion pesos (USD $11.1 million)11 12. In 2018 the municipal government reported an income of $120.7 billion pesos (USD $31.8 million) and expenditure of $122.6 billion pesos (USD

22 USD rate calculated at 3,800 COP to 1 USD.

23 Relative values of COP for 2020.

$32.3 million) representing an increase of 192% in annual income and an increase of 189% in annual expenditure. The details of annual income and expenditure for La Unión is captured in the graphic below:

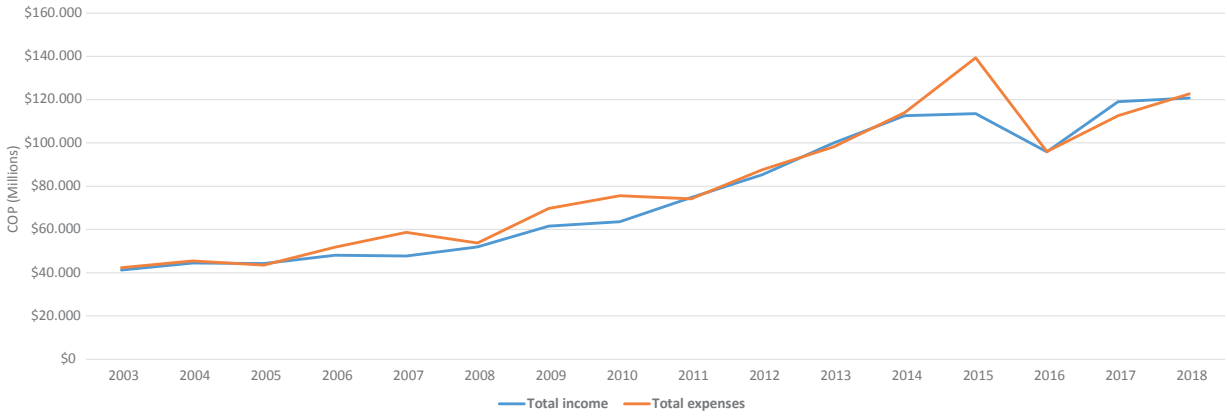


Figure 22: Average annual income and expenditure for La Unión: 2003 - 2018.

Nariño has seen less than half of the economic growth of La Union, where no contamination was identified. While there are many factors that influence growth rates, there is a stark difference the level of economic growth between the two municipalities. A strong correlating trend can be seen between stunted economic growth and the level in which a municipality was affected by conflict. Though there was conflict in La Unión, there was extremely low levels of ERW contamination, whereas Nariño continued to suffer the legacy of IEDs long after the fighting was over. Though there is insufficient evidence to draw a causal link between the presence of IEDs and restricted economic growth, it is clear that the capacity for economic development in municipalities more deeply affected by the conflict is restricted.

2.4.3 Municipal capacity to collect property tax

To assess the level of fiscal effort and economic activity in each municipality, it is important to look at the level of tax collection carried out by the municipal governments, specifically tax collection through property tax. It should be mentioned that, according to Iregui, Melo and Ramos (2004)[24], property tax is the second highest source of tax income available to the municipalities, which depends on both the land registry assessment and nominal rates. It is established that the capacity to collect these kinds of taxes is dependent on a number of external factors, including conflict and the presence of IEDs which are directly linked to forced displacement and the abandonment of property. The resulting action being a reduction of available resources for the municipal government. Property tax is collected annually by municipal governments and is dependent on the type of property and its estimated value.

Taking into account the above, with the objective of identifying the change in the economic activity of the municipalities given the presence of IEDs, the Los Andes professors drew a comparison of the behavior of the property tax (at constant 2020 prices) between the municipality of Nariño and La Unión in three periods of time: during the presence of IEDs (2000-2012); whilst humanitarian demining took

24 Iregui, A. M., Melo, L., & Ramos, J. (2004). El impuesto predial en Colombia: Factores explicativos del recaudo. Bogotá D.C.: Banco de la República. Subgerencia estudios económicos.

place (2013-2015); and the two years after both municipalities were declared landmine free (2016-2018). By doing so, it is possible to see the levels of comparative tax collection between the two municipalities and how the presence of IEDs influenced the municipal capacity to collect resources.

The levels of tax collection in La Unión are considerably higher, largely due to a significantly larger population (Nariño with 10,420 inhabitants and La Unión with 17,599 inhabitants). The table below captures the level of property tax collection during the three time periods:

	Nariño		La Unión	
Time Period	Average collection per year (millions of pesos)	% growth	Average collection per year (millions of pesos)	% growth
2000 – 2012	182.19		3,373.19	
2013 – 2015	237.00	30.1%	4,098.83	21.5%
2016 – 2018	316.95	33.7%	5,190.26	26.6%

Figure 23: Average annual property tax collection per municipality.

If one is to look at the overall percentage in increase in property tax collection, in the municipality of La Unión there was an increase, between the years 2000 and 2018 of 107.4%. Comparatively the municipal government of Nariño was able to increase the level of property tax collection over the same period by 389.2% with the most significant increases occurring from 2016.

What this demonstrates is that the removal of ERW, though not necessarily entirely responsible, has allowed for increased levels of property taxation through the sale of property as well as annual property tax collection, therefore increasing resources available to the local government. The increase in Nariño, compared with a municipality where no ERW was identified, in this case La Unión, is considerably higher and is an indicator of economic recovery after a prolonged period of conflict.

2.5 Psycho-social wellbeing

As part of this investigation, HALO wanted to look further into the psycho-social effects of minelaying and how the clearance of contaminated land effected the community at a social level. In order to do this, HALO collected data through household surveys on household's attitudes, behaviors and emotions towards IEDs as well as towards their community as a whole.

2.5.1 Reported effects of the presence and subsequent clearance of IEDs

The psychological effects of living with the presence of ERW is well documented in Colombia, with high levels of fear amongst communities where IEDs have been present or suspected. Of the households surveyed, three respondents replied that they or a family member had been involved in an accident caused by ERW. An additional ten respondents reported that they had lost cattle due to incidents involving ERW, with a total of 14 cows lost. Despite the relatively low number of respondents directly involved with accidents or incidents, 88% of direct and indirect beneficiary households reported that the presence of mines generated fear and uncertainty in conducting day to day activities. Of the direct beneficiary households surveyed, 55% reported that IEDs were cleared from their property.

Respondents were asked a series of questions relating to how fearful they felt to conduct certain activities, or in certain aspects of their lives, before and after clearance took place. The results from the household survey of direct and indirect beneficiary households are captured in the table below:

	Direct Beneficiary HH		Indirect Beneficiary HH	
	Before Clearance	After Clearance	Before Clearance	After Clearance
Q: How fearful was/is your household to live and work in your vereda?				
Extremely fearful	69%	0%	64%	0%
Fearful	26%	0%	33%	0%
Somewhat fearful	3%	0%	1%	0%
Not fearful at all	3%	100%	2%	100%
Q: How fearful was/is your household to walk in your vereda?				
Extremely fearful	78%	1%[25]	67%	0%
Fearful	17%	0%	30%	0%
Somewhat fearful	3%	0%	2%	0%
Not fearful at all	3%	99%	2%	100%
Q: How fearful was/is your household to use your own land?				
Extremely fearful	62%	0%	51%	1%
Fearful	19%	0%	33%	1%
Somewhat fearful	6%	0%	2%	0%
Not fearful at all	13%	100%	14%	98%
Q: How fearful was/is your household to allow your children to play in areas of the vereda where there was a suspicion of explosive devices?				
Extremely fearful	77%	0%	57%	1%
Fearful	17%	0%	26%	1%
Somewhat fearful	1%	0%	5%	0%
Not fearful at all	4%	100%	13%	98%

Figure 24: Levels of fear of beneficiary households in conducting day to day activities before and after clearance.

The results shown above show a significant reduction in levels of fear in living, working, transiting and in children playing in veredas that were cleared of ERW. This peace of mind that is afforded to communities previously affected by IED contamination is perhaps one of the most important aspects of HALO's work in Colombia. By creating safe conditions in which to live and work, communities are able to move forward with their lives, with the fear of an accident caused by an IED permanently removed.

25 This percentage point relates to an IED victim who, despite assurances, is fearful to return to the site of his accident as a result of the psychological trauma inflicted as a result of the accident.

2.5.2 Social connectivity within the community

As explained in section 3.2.3, one of the most common post-clearance land uses for direct and indirect beneficiaries is access. 74% of direct beneficiary households reported that the blockage caused by IEDs restricted travel between farms within their vereda, meaning that the physical routes that connected communities had been directly affected. This had a secondary effect, which was the restriction of social connectivity as well as the stigma that comes with having confirmed or even suspected ERW on one's property. HALO has identified previously in other parts of the country that there is reluctance by friends, family and neighbors to visit properties where IED contamination has been confirmed or suspected. This creates social divides within communities as well as a sense of disconnection with the rest of the municipality.

During the household survey, all three target groups were asked whether the intervention provided by HALO had any effect on the community and social aspects of their lives. More specifically, they were asked whether, as a result of clearance or NTS, their household had seen an improved capacity to share resources within their community, an improved capacity to work together and whether their household felt more connected with the rest of the community.

The below table captures the responses of respondents from the three target groups:

	Direct Beneficiary HH	Indirect Beneficiary HH	Control HH
Improved capacity to share resources	99%	99%	100%
Improved capacity to work together	99%	99%	99%
Improved connectivity with the rest of the municipality	100%	99%	100%

Figure 25: Responses to improved social connectivity as a result of HALO's intervention.

The results as shown above are extremely encouraging in terms of social development within communities where clearance and/or NTS has taken place. What the above clearly demonstrates is that as a direct result of HALO's intervention in both municipalities, there is an improved sense of community and an environment wherein community members have the confidence to live and work together without the fear of potential accidents caused by ERW. Notably, the responses from the control group, where only NTS was conducted, were in line with the responses from direct and indirect beneficiary households, highlighting the value of NTS. By removing merely the suspicion of ERW through NTS, there has been an improvement in social connectivity amongst communities.

Additionally, in all three target groups, an improvement in feeling connected with the rest of the municipality was reported, with nearly all of the 699 households reporting an improvement. This is a significant result in itself as it demonstrates that by declaring an entire municipality as landmine free, as a collective group, there is a sense of unity among inhabitants.

3. Post Conflict Recovery

3.1 Population displacement and return

According to the Internal Displacement Monitoring Center, Colombia registered 169,000 newly displaced persons as a result of conflict in 2019[26]. To date, more than 7.9 million people have been registered as displaced[27]. This vast displacement can be directly attributed to over five decades of conflict between NSAGs and the government. In more recent years, forced displacement as a result of conflict is attributed not only to NSAGs, but to organized criminal gangs involved in the illegal drug trade.

IED contamination and displacement are directly linked: the presence of mines acts as an obstacle to land restitution and internally displaced persons (IDPs) return processes. According to Colombian law, victims of the conflict cannot knowingly be put in danger[28], meaning that displaced people cannot return to places where there is a suspicion of landmines. Humanitarian mine action in Colombia creates the conditions that allows for the legal return of displaced persons, and offers restitution to those who have lost their land due to the conflict.

Both Nariño and La Unión saw high levels of forced displacement as a direct result of the conflict. Nariño has registered a total of 20,188 IDPs between 1984 and 2018 and La Unión registered 9,214 IDPs during the same period. The highest levels of displacement were recorded between 1994 and 2008, accounting for 93% of IDPs from Nariño and 95% from La Unión. The graph below captures the levels of forced displacement due to conflict from 1984 to 2018[29].

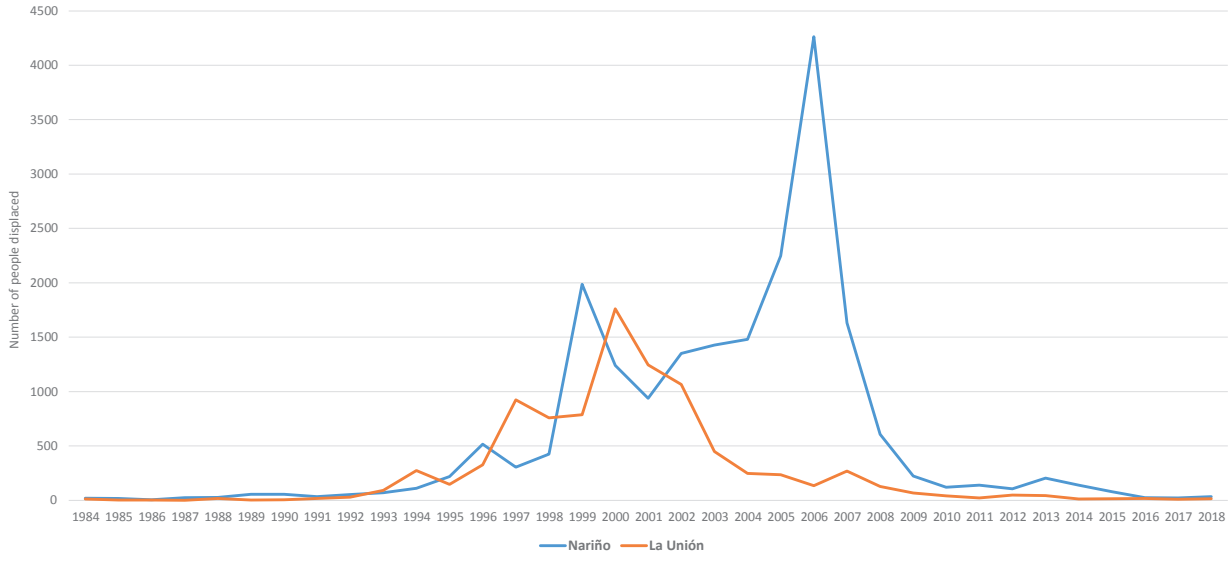


Figure 26: Forced displacement by year in Nariño and La Unión.

26 https://www.internal-displacement.org/sites/default/files/publications/documents/2020-IDMC-GRID.pdf

27 https://www.refworld.org.es/pdfid/5e69300f4.pdf

28 Ley 1448 de 2011; "La presente ley tiene por objeto (…) hacer efectivo el goce de sus derechos a la verdad, la justicia y la reparación con garantía de no repetición, de modo que se reconozca su condición de víctimas y se dignifique a través de la materialización de sus derechos constitucionales." "The purpose of this law is (…) to make effective the enjoyment of their rights to truth, justice and reparation with a guarantee of non-repetition, so that their condition as victims is recognized and they are dignified through the materialization of their constitutional rights".

29 https://cifras.unidadvictimas.gov.co/Home/Vigencia

As is shown above, there was a spike in both municipalities between 1999 and 2000, which corresponds to the arrival of the FARC-EP in southern Antioquia and the hostile take-over of the Nariño municipal center in 1999. The second spike in Nariño from 2004 to 2007 was due to an escalation of the fighting between the FARC-EP, paramilitary and government forces. During this time period there were 18 registered accidents caused by IEDs, 69% of the total accidents recorded in Nariño. Though it cannot be argued that the presence of IEDs directly results in forced displacement, it is a contributing factor in preventing those affected in continuing with their lives as they once were. Both the physical and psychological effects of ERW compound the obligation for families to abandon their homes and livelihoods.

In accordance with Law 1448 of 2011 (as described above), registered victims of the conflict cannot be knowingly be put in danger. The Colombian government determined that if there was any level of suspicion of ERW contamination in a municipality that all veredas within that municipality must be categorized as potentially containing ERW. In order to ensure that registered victims are not endangered, the vereda from which they were displaced must be declared free from suspicion of ERW before the legal process of return can take place. Though the information on displacement is widely available, the data on IDP return is not shared publically.

In order to overcome this issue, HALO collected data through interviews with vereda presidents of Nariño and La Unión to record the number of families who have returned since their vereda was declared free from landmine suspicion. From the data collected, vereda presidents in Nariño confirmed that 646 families had returned from 28 veredas. In La Unión, vereda presidents reported that 126 families from seven veredas had returned. It is important to note that the information provided by vereda presidents could not be verified by the national victims unit, and is an estimation. Additionally the information collected by HALO does not account for the population that have returned to urban areas within the municipality.

What can be concluded from the above is that an estimated 772 families have been able to return to their homes as a direct result of the humanitarian demining intervention by The HALO Trust. This in itself can be counted as a monumental success, as without the declaration of veredas as free from suspicion of IEDs through NTS and manual clearance, this would not have been possible.

Case Study – Genaro Hincapie

"Thanks to the U.S. government and HALO, Nariño is now safe, tourist are returning, and my family lives peacefully"

Genaro Hincapie was born and raised in the Obital vereda in Nariño. At 42 years old, Genaro has lived through Nariño's transformation, from peace to violence, and back to peace again. Thanks to the return of tourism in the municipality, Genaro is the proud owner of the countryside Hotel Brisas del Sol.

For the first 18 years of his life, Genaro lived peacefully with this family in rural Nariño. Like the other boys in his community, Genaro spent his days going to school, helping on the family farm, and playing in the forest with friends. It wasn't until the late 1990's when things started to change for Genaro. In 1999, the violence finally overwhelmed Nariño and the guerrillas took control over the municipal town, causing much of the municipality's population to flee in fear, among them was a young Genaro and his family. The family escaped the violence unharmed and fled to Medellin, where they thought life could be stable once again. However, upon arriving in Medellin the family struggled to find work and Genaro resorted to selling fruit on the street, it was at this point the he realized that the family not only lost their home, but their way of life as well.

While living in Medellin the family tried multiple times to return to Nariño, but the conflict never seemed to recede enough to allow the family to return. Eventually the fighting between the guerrilla, paramilitary and government forces escalated to a point where the family couldn't even return to visit their farm. After years of struggling to make a living in Medellin, when Genaro was finally able to return to Nariño he was shocked by what he found. The once lively town was a mere shadow of its former self.

Genaro explains that it wasn't until HALO arrived, with the support of the U.S. government that Nariño started to regain some of its former popularity, *"People were afraid to visit Nariño because they knew that it had been one of the most violent parts of Antioquia, and that there was still a lot of mines and bombs. Once HALO started operations, the tourist slowly started returning"*.

As news got out that Nariño was landmine free, Genaro's quality of life quickly improved, *"when I first returned to Nariño, I bought a small house on a nice piece of land. I eventually noticed that there were more and more tourist returning every weekend too but they didn't have anywhere to stay. That's when I decided to develop my land into a hotel, a real place for people to visit"*. Bit by bit Genaro built a small resort just outside of Nariño, on land that was stricken by conflict.

"Here in Nariño, we have so much to thank the U.S. government for. Through their support for The HALO trust, Nariño has been cleared of landmines and the municipality is finally progressing. Now that people aren't afraid of mines, my family, and many others like us, have been able to make a living off of tourism. Thank you so very much for helping us rebuild our lives here in Nariño".

3.2 Land restitution

The legal process of land restitution in Colombia is managed by the Land Restitution Unit (LRU). The requirement for legal land restitution occurs when a conflict victim has been illegally stripped of their lands as a result of the armed conflict. The LRU is able to process claims of stripped land or forced abandonment that occurred from January 1 1991. The procedure for restitution is comprised of two stages, an administrative stage (registration of the stripped land) and a judicial appeal (restitution action). It is important to note that the second stage in this process can only take place once a vereda has been declared free from the suspicion of IEDs.

The reason land restitution is so important in Colombia is that it forms part of the legal repatriation and reparation for victims of the armed conflict. It allows conflict victims to re-start their lives on their own land in confidence that it is legally ratified by the Colombian government.

According to the LRU a total of 184 land restitution claims have been processed in Nariño and 47 have been processed in La Unión. As land restitution claims cannot be processed until a vereda is declared landmine free, without HALO's intervention through NTS and manual clearance, this would not have been possible.

3.3 Development projects

One of the key indicators of socio-economic development is the level of investment by third parties by way of development projects. During the household survey, respondents were asked whether they were aware of any development projects implemented after their veredas or the municipality was declared landmine free. Of the direct and indirect beneficiary households surveyed, 66% reported that they were aware of development projects that had taken place in their vereda once it had been declared landmine free. Of those households, 73% reported to have directly benefitted from those projects. Of the control group households surveyed, 63% of households responded that they were aware of development projects implemented in their vereda, of whom 70% reported to have benefitted directly from their implementation.

This result is significant as it demonstrates the importance of NTS in communities where no contamination was identified. Without the declaration of a vereda as landmine free through NTS, the implementation of development projects in these veredas would not have been possible. This highlights the benefits of conducting NTS for communities where no IED contamination is identified.

It is important to note that though it is not written in law, development projects are rarely implemented in veredas that have not been declared landmine free. There are of course exceptions to this guidance, though of the implemented projects identified by HALO, it was confirmed that none would have taken place if there was still any level of suspicion of ERW in the target areas.

In total, through household survey and information provided by the local authorities in Nariño and La Unión 14 development projects were identified. All of the implementing parties were aware of HALO as a demining organization and confirmed that they were not permitted to work in areas with suspected ERW contamination.

Below is a brief summary of each of the projects:

3.3.1 - Construction of paved/concrete roads

Location	Nariño
Project Category	Infrastructure
Implementer	Municipal Government
Project Budget	Information not available
# Families Benefitted	700

Residents of Nariño assist in the construction of paved roads in remote parts of the municipality – Photo credit: Nariño Antioquia Twitter.

As part of the municipal authority's development plan, significant improvements are being made in the municipality's infrastructure, in particular the installation of paved/concrete roads, referred to as placa y huella. Nariño, thanks to its tropical climate, experiences extensive rainfall throughout the year, which makes travelling by roads that are unpaved difficult. The project to improve the road systems began in 2016 and is ongoing. By improving access to more remote parts of the municipality, the municipal government hopes to improve public transport links as well as reduce the number of accidents on tertiary, unpaved roads. HALO was unable to obtain information on the level of projected investment for this project.

3.3.2 - Estufas Eficientes *(Efficient Stoves)*

Location	Nariño & La Unión
Project Category	Social/Healthcare
Implementer	Municipal Government - CORNARE
Project Budget	$610,000,000 COP (USD $161,000)
# Families Benefitted	542

The Efficient Stoves project began in 2016 and is due to finalize in 2020 - Photo credit: http://www.narino-antioquia.gov.co/noticias/se-entregaron-75-estufas-eficientes

The "Efficient Stoves" project has been implemented in various veredas across Nariño and La Unión and is part of a larger project being implemented by CORNARE (branch of the Antioquia government, focused on environmental and "green" projects across southern Antioquia). The project entails the provision of iron, wood-burning stoves used for cooking. Typically, rural houses use wood as a source of fuel for cooking where gas is not available. The burning of fuel in an open stove (inside the house) generates smoke and carbon dioxide which can lead to health and respiratory complications. The introduction of a sealed stove with a chimney that funnels the smoke out of the house is not only more efficient in terms of the fuel required, but also improves the air quality in the home, reducing the effects of smoke inhalation and associated repertory illnesses. Recipients are provided with the iron stoves, chimneys and building materials to construct the stove.

3.3.3 - Installation of septic tanks

Location	Nariño & La Unión
Project Category	Infrastructure/Environmental
Implementer	Municipal Government – CORNARE – UMATA
Project Budget	$1,048,000,000 COP (USD $276,000)
# Families Benefitted	500

With the goal of providing improved sanitation for rural communities, the municipal governments of Nariño and La Unión, supported by departmental organizations CORNARE and UMATA (Unit for municipal assistance in agricultural techniques), have installed 500 septic tanks. The installation of the tanks not only improves waste management in homes, but is aimed to reduce the contamination of natural waterways in an effort to protect the environment across the two municipalities.

3.3.4 - Familias en su Tierra *(Families on their land)*

Location	Nariño
Project Category	Social
Implementer	Prosperidad Social
Project Budget	Information not available
# Families Benefitted	342

Familias en su tierra is a national government initiative that provides support to victims of forced displacement who have returned to their municipalities or veredas. The project provides recipients with financial support as well as consumable items (such as seeds and tools) to allow them to produce their own food. The project has also provided community workshops, agricultural management training and food to the most vulnerable members of the community. *Familias en su tierra* was present in Nariño between 2018 and 2019, though recipients continue to receive financial aid through *Familias en Acción* (Families in action).

3.3.5 - Nueva Ruralidad *(New Rurality)*

Location	La Unión
Project Category	Agriculture
Implementer	UMATA
Project Budget	$200,000,000 COP (USD $53,000)
# Families Beneftted	200

The Nueva Ruralidad project provided training in agricultural techniques to diversify cultivation in La Unión – Photo credit: UMATA.

The New Rurality project, implemented by UMATA began in 2016 and ran for a three year period. The primary objective of the project was to train rural families in efficient and current agricultural techniques that would diversify crop cultivation in the municipality, including how to grow aromatic plants and different varieties of strawberries. Families were also supported in the development of individual projects and create partnerships between growers with the view to increasing production and profits.

3.3.6 - Improvements to rural households

Location	Nariño
Project Category	Infrastructure
Implementer	Municipal Government
Project Budget	Information not available
# Families Benefitted	163

This initiative, funded by the municipal government of Nariño sought to improve the quality of life of rural families living in poverty whose homes were unfinished. This included the installation of basic necessities such as bathrooms, kitchens, floors and roofing. The objective of this project was to provide dignity to those families most in need by providing them with a more comfortable living situation.

3.3.7 Meliponiculture (beekeeping)

Location	Nariño
Project Category	Agriculture/Environmental
Implementer	CORNARE
Project Budget	$108,000,000 COP (USD $28,000)
# Families Benefitted	150

Bee-keeping kits were presented to the community by the Mayor of Nariño (second from left) on behalf of CORNARE.

As part of CORNARE's initiative to diversify agricultural production whilst promoting environmental conservation, a project to introduce Meliponiculture or beekeeping was implemented between 2017 and 2018. The project provided training to rural families across the municipalities with the two key objectives of conservation of local flora whilst generating additional income for families through the sale of organic honey. CORNARE provided the necessary equipment for recipients, seeds for native fruit trees (required for nectar for the bees) as well as technical training in bee-keeping practices.

3.3.8 PRISER (Programa de Intercambio de Servicios – *Exchange of Services Program*)

Location	Nariño
Project Category	Environmental
Implementer	CORNARE - UMATA
Project Budget	$322,000,000 COP (USD $85,000)
# Families Benefitted	150

This project focused on the prevision of services from CORNARE and UMATA to the municipal authority in Nariño to promote environmental conservation. The project included elements of reforestation, cleaning of waterways as well as natural water sources and their ongoing protection. CORNARE held workshops with local communities to educate and train local people in the importance of resource conservation as well as best practices. The project took place in 2018 in 14 veredas in Nariño.

3.3.9 Productive projects

Location	La Unión
Project Category	Agriculture
Implementer	UMATA – Municipal Government
Project Budget	$300,000,000 COP (USD $79,000)
# Families Benefitted	150

This project focused on capacity building for farmers in La Unión. UMATA provided 11 technical workshops in the municipality, covering grassland management, fish farming, floral cultivation silvopastoral systems and aromatic plant cultivation. As part of the project, UMATA provided technical visits to farmers across the municipality to provide assistance in ensuring that they were able to capitalize on their land and crop selection whilst safeguarding the sustainability of their livelihoods. More specifically the project supported 100 families who were registered conflict victims in producing potato crops and a further 50 families with corn and bean cultivations.

3.3.10 Arroz Secano *(Dry Rice)*

Location	Nariño
Project Category	Agriculture
Implementer	CORNARE
Project Budget	$90,000,000 COP (USD $24,000)
# Families Benefitted	100

In an effort to diversify crop cultivation and increase food security, CORNARE implemented the dry rice project between 2017 and 2019. Given that the space required to grow rice needs to be flat and in a warm environment, the implementation of this project was restricted to the lower veredas of the municipality. The objective of the project was to teach farmers how to cultivate rice as well as successfully dry and package it for sale. Basic machinery was provided as well as technical workshops.

3.3.11 Huertas Caseras/Familiares *(Family/Home vegetable plots)*

Location	Nariño & La Unión
Project Category	Agriculture
Implementer	UMATA - MANA
Project Budget	$325,000,000 COP (USD $86,000)
# Families Benefitted	140

This small scale agricultural project aimed to improve the eating habits of rural families whilst reducing costs by providing training and the necessary tools to grow their own food. The project was implemented by UMATA and MANA (the departmental government branch responsible for food security) and directly benefitted 90 families in Nariño and 50 families in La Unión. Families were taught how to use organic fertilizers to grow an array of vegetables as well as how they should be prepared. Beneficiaries were provided with seeds and basic tools to create their own vegetable plots.

3.3.12 BancO2

Location	Nariño
Project Category	Agriculture
Implementer	CORNARE – Más Bosques
Project Budget	$95,000,000 COP (USD $25,000)
# Families Benefitted	82

The BancO2 project is a conservation project implemented by the environmental NGO, Más Bosques in alliance with CORNARE. The project's main goal was to encourage landowners in areas of environmental importance and strategic ecosystems to continue conserving and restoring the Andean forests, through a compensation scheme. Families were financially compensated to maintain parts of their land as a type of ecological reserve and not use the land for production or extraction of resources such as wood. By

doing so the project sought to improve environmental and ecological sustainability. The project took place in 2018 and in total, 806 hectares of land were protected.

3.3.13 Women farmers building peace and equality

Location	Nariño
Project Category	Agriculture/Social
Implementer	Vamos Mujer (private organization)
Project Budget	No information available
# Families Benefitted	25

Vamos Mujer is a women's rights organization based out of Medellin. The project has been developed and implemented in two veredas in Nariño began in 2020 and is ongoing. The principal objective of the project is to give a voice to women in farming communities and provide them with the necessary resources (from financial support, to equipment and training) to provide for their families. Specifically, the project is seeking to establish a poultry farm with the view to selling chicks to local farmers as well as develop subsistence level cultivations for their families. The project's implementation has been somewhat delayed due to the COVID-19 crisis but is set to continue until the end of 2021.

3.3.14 Fruit and Pulps Buena Vista

Location	La Unión
Project Category	Agriculture/Social
Implementer	Municipal Government/Community
Project Budget	$50,000,000 COP (USD $13,000)
# Families Benefitted	13

The fruit and pulps Buena Vista project is a small scale project designed to support 13 women who are heads of their household, and victims of the conflict in the vereda of Buena Vista in La Unión. The project is community led and has provided income opportunities for 13 families by creating a community business that provides a reasonable income. The project has provided industrial blenders, uniforms and other equipment to allow the women to produce fruit pulps that can be sold locally.

3.3.15 Development projects conclusions

The most crucial outcome of the aforementioned development projects is the extent of benefits being provided rural communities in both municipalities in terms of infrastructure, agriculture, environmental, health and social development. Though the exact figure could not be obtained in terms of financial investment of all of the above projects, where information was provided, upwards of $830,000 USD has been invested. Though HALO is almost certain that there are additional projects that were not captured during this investigation, the above gives an indication of the diversity of investment being applied by the municipal governments and other third parties in terms of development in Nariño and La Unión.

Moving forward, it will be vital for HALO and other humanitarian demining organizations to strengthen partnerships that will allow for the rapid and effective implementation of development projects in communities that are most in need. The removal of ERW and the declaration of veredas as free from suspicion are the first steps towards creating the appropriate conditions that will enable socio-economic development.

4. Staff Survey

4.1 Summary

As part of this investigation, HALO conducted a staff survey of all current employees from the municipality of Nariño. Prior to full implementation, a brief pilot was carried out with five staff to ensure that the questions in the survey were understood and clearly worded. The survey was implemented during the operational stand down during the height of the COVID-19 crisis using Survey123. 65 members of staff completed the survey whom occupy a wide spectrum of operational and administrative positions across the program. Since HALO began operations in Colombia, 159 individuals (39 women and 120 men) have been employed from the municipality of Nariño, providing formal employment in a region where historically job opportunities for young people have been limited. As in many regions of Colombia, the lack of formal employment opportunities often forces people in rural areas to take part in the illicit economy of cultivating illegal crops or illegal mining. The benefits of formal employment include: a regular salary, healthcare, paid holiday, insurance and pension.

HALO staff at an end of year celebration in Sonsón, 2015.

The principal objective of the staff survey was to establish the level of improvement of quality of life gained through employment with HALO Trust of members of the community of Nariño. The staff surveyed all pertain to the municipality of Nariño as there are currently no staff employed from La Unión. An English version of the survey can be seen at Annex A.

4.2 Demographics

Staff were asked a series of questions that allowed HALO to establish the current demographics of employees from Nariño. Of the 65 survey respondents, 81% (53 people) were men and 19% (12 people) were women. This figure is representative of the current gender distribution in employees from Antioquia, though is below the program average of 36%[30]. 92% (60 people) are under the age of 40 with the oldest member of staff reporting as 62 years old and the youngest at 20 years old.

An important discovery was that 70% of staff surveyed (46 people) confirmed that they are heads of their household (HH), including seven of the 12 women surveyed. The 46 HH's reported that 255 people are members of their households and are dependent on the income provided by HALO, an average of 5.5 people per household.

In terms of HALO's staff's relation with the conflict, 85% (55 people) reported that they are registered victims of the conflict and 87% (57 people) reported that members of their household are registered victims. Furthermore, 25% of staff (16 people) reported that land that they own had previously been contaminated with ERW and 9% (six people) took part in the clearance of their own land. None of the staff surveyed are landmine victims, though two people confirmed that members of their families had been involved with accidents caused by ERW.

4.3 Effects of HALO's work

Given that HALO has 65 staff living in Nariño, HALO was able to gather qualitative information on the current living conditions in Nariño and how quality of life has changed since HALO's arrival from the perspective of those working in the mine action sector. According to the results of the survey, 100% of staff from Nariño reported that the overall quality of life in the municipality has improved since it was declared as landmine free in 2016. As discussed in the previous section, a number of development projects have been implemented in Nariño since 2016, which would not have been possible had humanitarian demining not taken place. Of the staff surveyed, 22% (14 people) confirmed that they or their families had directly benefitted from one or more development projects implemented in the municipality.

Staff were asked whether they felt that the work carried out in the municipality contributed to the peacebuilding process in Colombia, to which 100% of staff agreed. The process of inclusion of local people in the demining process is vital to ensure that communities feel involved and have ownership over the work being done in region. This perception is held amongst the majority of communities affected by the conflict and demonstrates that staff feel they are doing their part to create a more stable and peaceful environment for their community and their families.

30 Accurate as at September 2020.

4.4 Employment changes

Prior to joining HALO 45% (29 people) of the staff surveyed were unemployed, and 14% (9 people) were in part-time employment. When asked about their last job prior to HALO, only 40% had been formally employed with 20% declaring they were self-employed. Among the women surveyed, only a third (four people) had full time employment before joining HALO.

One of the more significant changes in livelihoods to staff after joining HALO was the increase in monthly economic ingress. The average reported monthly salary, through formal or informal work, prior to joining HALO was 769,115 COP per month (approximately $200 USD), with women earning an average of 610,909 COP and men earning an average of 803,920 COP per month.

	Ingress prior to HALO (COP)	Current Salary (COP)	% salary increase
Men	803,920	1,789,033	123%
Women	610,909	1,390,636	128%

Figure 27: Average staff economic ingress.

The average salaries for both men and women is more than double than that prior to HALO, with men averaging a 123% increase and women averaging a 128% increase. The difference in current average salary between men and women is largely due to the roles occupied by the staff surveyed. For example, five of the eleven women surveyed are camp cooks, which holds the lowest salary of HALO personnel and one of the men surveyed is the program operations manager, which holds one of the highest salaries on the staff payroll. However, the average percentage increase for both men and women is similar, demonstrating a significant increase in economic ingress for all staff.

According to Trading Economics[31], a living wage in Colombia is 781,232.49 COP per month. Therefore, even the lowest paid HALO employees are making a living wage, and the typical HALO employee has moved from making near or below a living wage to more than double a living wage for the area.

4.5 Life improvements

Staff were asked a series of questions to establish the level of improvement to their quality of life through a series of livelihood indicators. These indicators are subjective and were selected based on typical changes associated with formal employment and purchases of non-essential goods or infrastructure to improve comfort and/or socio-economic investment.

When asked, “How has yours and your families lives improved since joining HALO?” staff responded as follows:

31 https://tradingeconomics.com/colombia/living-wage-individual

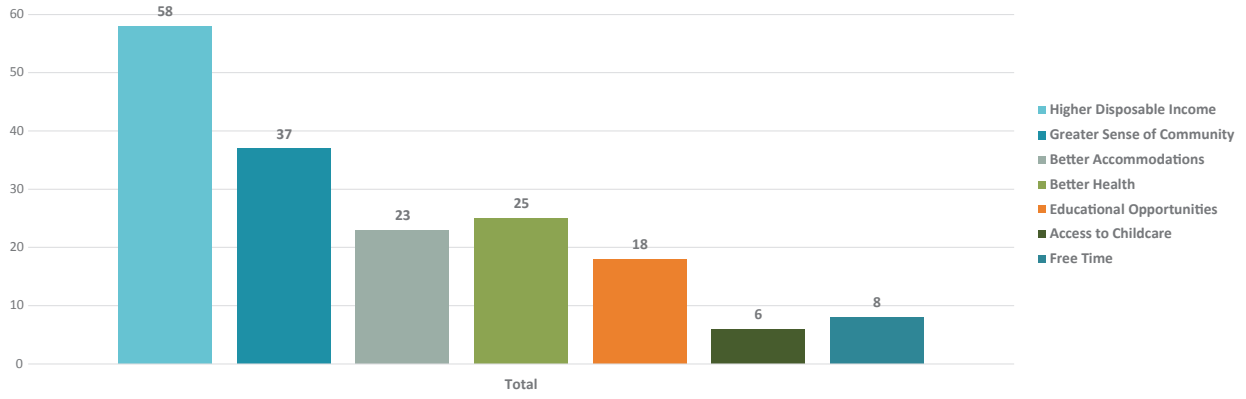


Figure 28: Life improvement of staff.

Of the staff surveyed, 89% responded that theirs and their families had achieved a level of improvement in disposable income to cover daily costs. 57% responded that their sense of social community had improved thanks to their employment.

When asked what purchases staff were able to make with the salary earned through HALO, staff responded as follows:

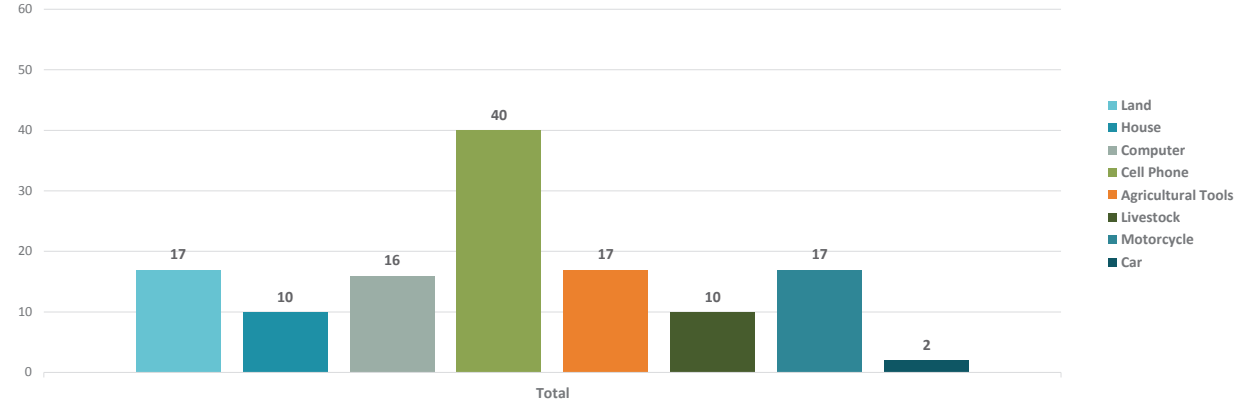


Figure 29: Staff purchases with HALO salary.

Thanks to the salary afforded to them, 95% of staff confirmed that they were able to purchase high value items ranging from cell phones to land and property. As in any country, purchasing land or property provides families with security and stability for the future. Commodities such as smartphones, cars and motorcycles are considered as luxury items that would not be purchased without additional disposable income. This is a significant result as it is likely that the purchase of high value items such as these would not have been possible if not for formal employment with HALO and the associated salary.

In addition to purchases of goods, staff were able to make improvements to their homes as a direct result of the salary earned through their employment. Staff reported the following home improvements:

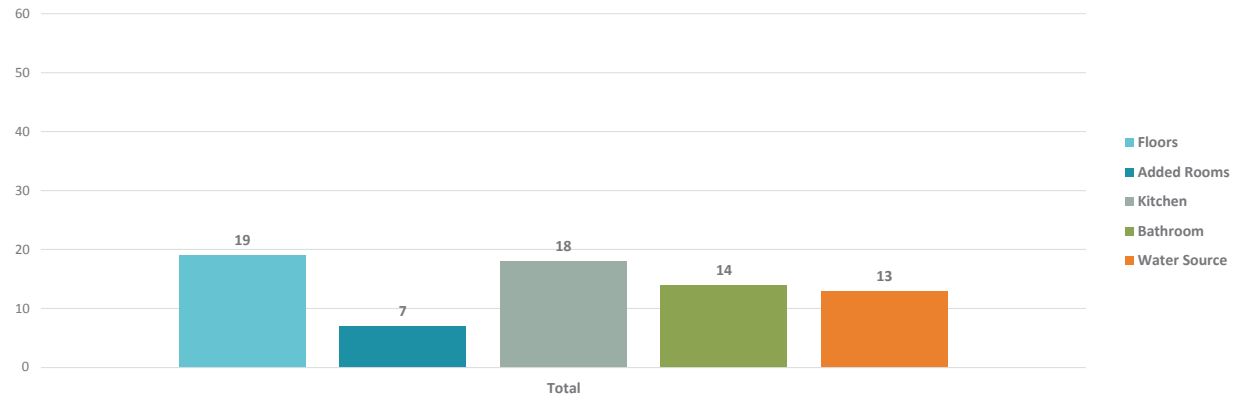


Figure 30: Staff home improvements made with HALO salary.

Staff were asked which aspects of their lives were now easier, thanks to employment with HALO. The following responses were reported:

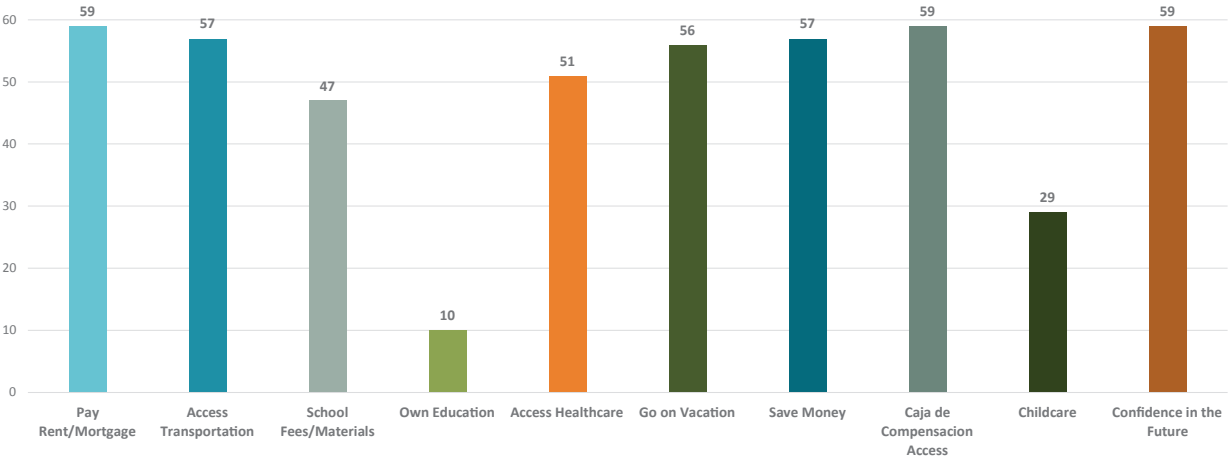


Figure 31: Life aspects made easier through employment with HALO.

100% of staff responded that their lives had been made easier in one or more areas, with 91% of staff stating that they could more easily pay rent/mortgage, have access to the Caja de Compensación[32] (compensation fund) and have more confidence in their futures. In terms of education, HALO offers all staff both internal and external training and education opportunities such as driving lessons and foreign language classes. HALO is currently working on ways in which the organization can support families with childcare options to ensure retention of staff.

Staff were also asked if there was anything that had become more difficult as a result of working for HALO. The responses collected were as follows:

32 The Caja de Compensación are private entities that are responsible for managing social security benefits. The compensation funds are directly responsible for paying various benefits and subsidies, in addition to granting social credits and other benefits to their members.

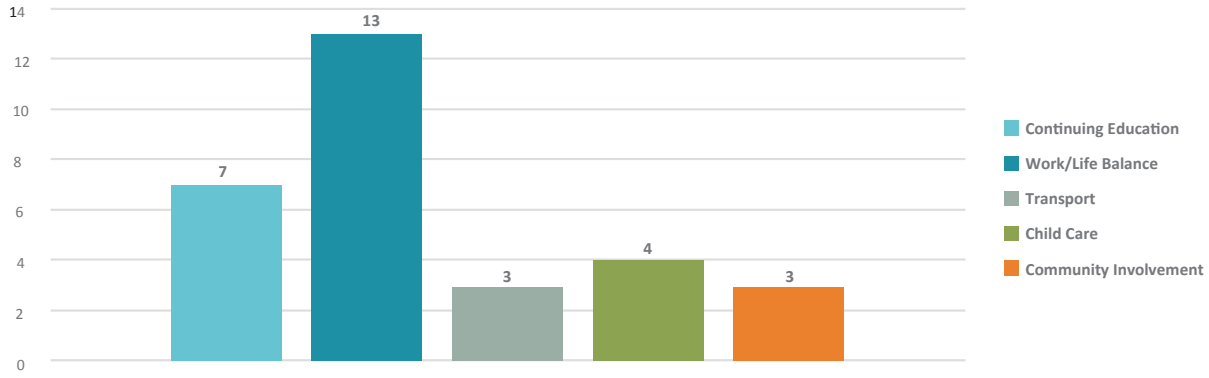


Figure 32: Life aspects made more difficult since joining HALO.

83% of staff surveyed (51 people) responded that their lives had not become more difficult since joining HALO. However, 20% of staff (13 people) reported that striking a work-life balance was a challenge.

4.6 Working for HALO

Through the staff survey, HALO wanted to understand the principal reasons for staff joining the organization as well as their level of satisfaction with their work environment. Of the 65 staff interviewed more than 50% had been working for HALO for more than five years and just 13% of staff had two years or less with the organization. When asked if they felt they had received sufficient training, 97% (63 people) confirmed that they felt adequately trained to do their jobs. The two staff who replied that they did not feel sufficiently trained were given the support they needed and re-training in order for them to fulfil their responsibilities. HALO also asked about staff's overall job satisfaction, to which 94% of staff (61 people) reported that they were very satisfied and the remaining 6% (four people) responded that they were somewhat satisfied with their situation.

Staff were asked what skills they had learned during their tenure with HALO, and replied as follows:

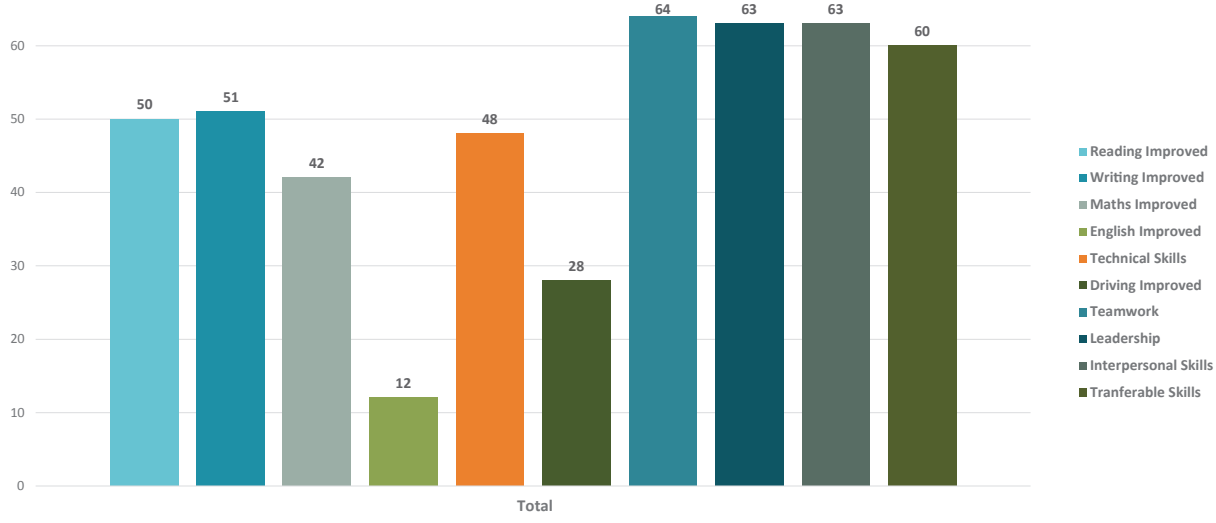


Figure 33: Skills learned through working with HALO.

The results from this specific set of questions are encouraging as it demonstrates a level of personal development of staff, regardless of their position. By improving literacy and technical skills, HALO aims to provide opportunities for staff when their time with HALO comes to an end. Increasing the population of skilled workers in Nariño supports the sustainability of socio-economic advancement in the municipality.

Staff were also asked why they decided to join HALO, with the following outcomes:

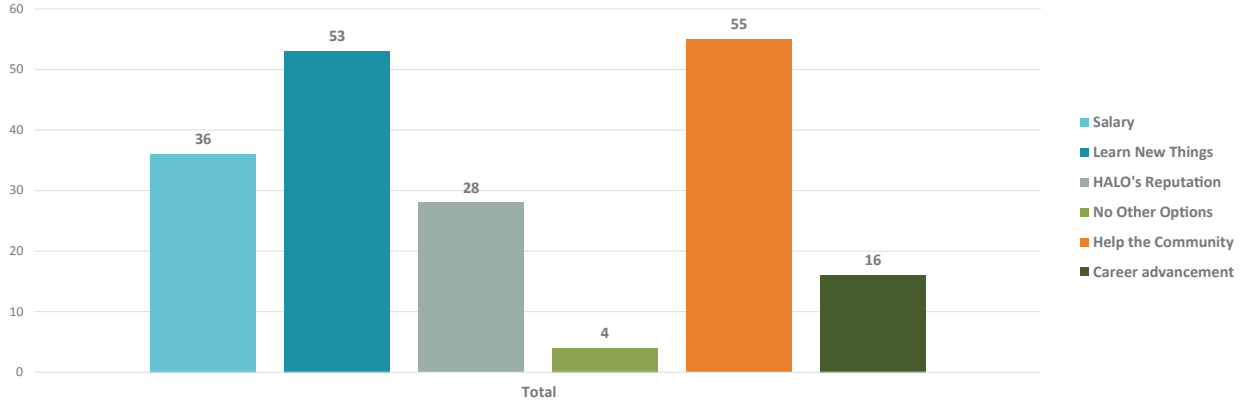


Figure 34: Staff reasons for joining HALO.

Interestingly the two most popular responses were to learn new things and to help the community. Though economic ingress is certainly a factor in deciding to join the organization, helping the community and personal development are more of a priority to staff. The four staff who responded that there were no other options for them, joined in either 2013 or 2014, which gives an indication of the state of the job market in Nariño during that time.

Staff were asked if they wanted to share anything more with the program at the end of the survey. Below are a selection of comments that were submitted:

I am very grateful for the opportunity that HALO has given us, I know that, like me, there are many people from Nariño who, thanks to this work, have been able to give their families a better quality of life, and that the work we do is saving lives and creates safe spaces for our communities – Alejandro Correa Osorio (NTS Assistant)

I am truly thankful for the opportunity to be part of this organization. I am grateful for the opportunity to learn and for my personal and professional growth. I hope to continue playing an active part in the organization through my work and contribute to the peace in Colombia through demining – Visney Leandro Aguierre (Demining Leader).

I am very proud of the support that HALO provides not only to its workers but also to the communities and I would like to continue working with HALO as long as possible – Flor María Varga (Cook)

It is an organization where, on a personal and social level, I get a lot of satisfaction. It makes me happy seeing families affected by conflict progress past their history, and seeing them smile. For a time, they had lost everything but now they can return to their lands without fear and start a new life. – Deiber Ramirez (Deminer).

4.7 Staff survey conclusions

A US funded demining team celebrate the completion of a minefield in San Rafael, Antioquia.

The socio-economic advances reported by HALO personnel from the municipality of Nariño as a direct result of employment demonstrates the benefits of formal employment with the organization. The overall level of job satisfaction amongst staff is high, with all staff reporting to be more economically stable, inspiring more confidence in their futures. Most significantly, all staff confirmed that living conditions in Nariño had improved since the municipality was declared as landmine free in 2016. By providing training and providing transferable skills to staff, HALO aims to further the level of socio-economic development through capacity building of its residents. This process is inherently sustainable, as by investing in the people from Nariño, the municipality will be able to continue its development for years to come.

The survey conducted was named (not anonymous), which may have generated a level of response bias amongst staff. The reason a named survey was chosen was to ensure that any staff that felt they were struggling or needed additional support could be identified and also to monitor the response level as the survey was done remotely during the COVID-19 operational stand-down. However, this limited the survey to a certain degree as staff may not have responded as honestly as they would have done in an anonymous survey.

5. Lessons Learned

Given that this is the first project of this kind to be funded by the DOS and the first, in-depth post-clearance assessment to be conducted in Colombia, there are multiple lessons learned from the project's planning and implementation.

5.1 Project planning

From the concept stage of this investigation, it was clear that careful planning was needed in order to comply with the initial 12-month time frame. In anticipation of the grant being awarded in late 2019, HALO held meetings with the Los Andes economists to provide as much detail as possible in terms of context, HALO as an organization, the process of humanitarian demining and HALO's history in Nariño and La Unión. All of this was done in July and August of 2019, ahead of the grant being awarded in September. Allowing as much time as possible to explain how the process of demining works in Colombia to the Los Andes economists was crucial in order to have a head start once the grant was awarded.

During the first phase of the project, HALO and the Los Andes economists worked on preparing the household survey forms. This task took a considerable amount of time and work with seven drafts of the first survey being created before reaching the point where it was ready to be piloted in the field. The lesson learned here is for future investigations to allow more time to develop the forms ahead of field testing.

To ensure that the CO teams had sufficient time to survey all of the veredas in both Nariño and La Unión, HALO developed a field deployment plan. With the assistance of the HALO Colombia operations manager, a native to Nariño who took part in the survey and clearance of the municipality, a deployment plan was created which would allow sufficient time for the two teams to complete the survey. However, once deployed, due to certain accessibility restraints, this plan was altered on a number of occasions and was further impacted by the COVID-19 crisis. Maintaining a degree of flexibility in terms of the deployment plan was critical and allowed teams to collect the necessary data in an acceptable time frame[33].

Prior to CO teams deploying to Nariño and La Unión, HALO broadcast short radio messages explaining that HALO would be returning to the municipality to collect information. By doing so, communities were forewarned that they would be likely to receive a visit from HALO personnel, which in turn sped up the liaison process when teams arrived at beneficiary households. The use of radio is an effective tool that provides extensive reach in rural areas and should be used more frequently across the program.

The 12-month performance period was enough time to undertake this project with the number of teams and resources available. Should similar investigations take place again in Colombia, for larger or more densely populated municipalities, the addition of a third team would be beneficial.

33 The data collection phase of the project was extended as a result of the suspension of operations caused by the COVID-19 pandemic.

5.2 Baseline survey

One of the key lessons learned generated through this investigation is the importance of having baseline data from which to measure. Had a baseline survey been carried out in Nariño prior to clearance taking place, the results would have been dependable. As much of the retrospective information provided by respondents required them remember specific details from 15 years ago or more, there was a heavy reliance on their memory. This brings a degree of inaccuracy and un-certainty to some of the information provided. However, had there been baseline data, collected by HALO, the margin of ambiguity would be greatly reduced. HALO intends to collect pre-clearance information from direct beneficiaries across the program from January 2020.

5.3 Training and household survey pilot

The program M&E officer provided training for the CO teams on two separate occasions, in November 2019 and re-training in January 2020. The training provided included general M&E best practices, survey techniques and familiarization with the household survey forms. The Los Andes economists were able to accompany teams on the first day of deployment, but to due to commitments with the University, were unable to stay for an extended period of time. It would have been helpful to have had them be more involved in the training process as an additional resource for the CO teams to learn from. The refresher training in January was useful as teams had relatively little experience in post-clearance data collection and much of what they had learned in November and December had faded after the holidays.

The decision to pilot the household survey was essential to the success of this project. By testing the direct beneficiary survey form, HALO was able to identify sections that needed to be amended and phrasing of questions needed to be changed. The pilot period was set from the last week in November to the end of the operational cycle in December (three weeks). The amount of time for the pilot was sufficient, though where it faltered was the amount of households visited during that time. In their earnest and enthusiasm, the CO teams visited 29 direct beneficiary households during the pilot period. Considering that less than 80 direct beneficiary households were surveyed in total, this was too much. The feedback generated from the pilot period resulted in a number of important changes to the survey form, meaning that teams had to return to certain households a second time to collect the missing information for the revised form. For future pilots of data collection forms a limit of 10 households should be set to avoid re-surveying households should there be amendments to the form.

5.4 Data collection, monitoring and analysis

Through careful planning and preparation the data collection stage of this investigation went well. There were initial concerns about collecting financial data regarding ingress and expenditure, but there were very few instances where respondents were unwilling to provide this type of information.

One of the monitoring tools that was used that proved to be successful was recording interviews with respondents. Doing so allowed for monitoring of survey techniques by the CO teams and checking the information recorded was correct. Additionally, using a physical form and the data collection application, Fulcrum, allowed for further quality control of the information gathered. As part of the administrative

process, the physical forms were cross-checked with the digital data allowing for anomalies to be identified. This two stage system allowed for simple quality assurance of data ahead of analysis.

The CO teams were made up of NTS personnel, whom, once trained, were perfectly capable of collecting the required data for this investigation, though it would be beneficial to have HALO personnel who are dedicated to this type of data collection and data management in the future. This is something that will be discussed at a program level to assess the viability of having permanent CO personnel.

5.6 Benefits of including a neutral third party

The hiring of the Los Andes economists provided a level of objectivity that would have otherwise not been possible had HALO conducted this investigation alone. By including an un-biased third party there is a higher degree of transparency in the reported outcomes. Furthermore, by contracting professors from one of the country's top universities, the results presented in this report are inherently more credible. The collaboration between HALO and Los Andes has, by all accounts been a success and something that could be easily replicated across other HALO programs.

The data collected was analyzed both internally by the MEAL team in HALO's headquarters and by the Los Andes Economists. By doing so HALO was able to cross-reference the results to ensure a level of transparency and a higher degree of accuracy in the results that have been presented.

6. Future Studies and Application of Results

The implementation of this investigation has demonstrated that there are multiple benefits to be achieved at a local and regional level through humanitarian demining. However, one area that requires further investigation is the level and time frame of return on investment (ROI) from the perspective of the donor community. In order to better understand the true level of ROI it will be necessary to conduct further study, with established economic indicators that will allow for clear and reliable evidence that demonstrates the ROI of humanitarian mine clearance in Colombia. In this study it has been evidenced that there is continued investment from local authorities and third parties, by way of social development projects, though the exact USD value could not be ascertained. Additionally, through the creation of wealth through property ownership it could be argued that there is significant ROI. Considering the increased property value of the direct and indirect beneficiary households surveyed under this investigation alone, that capital wealth has increased by over $2.2 million USD amongst the beneficiary households surveyed since minefields were cleared (2013-2016) to today[34].

What the results of this investigation have also shown is that the current policy of categorizing an entire municipality as "red", that is to say with suspected contamination across all veredas, is inhibiting socio-economic growth in veredas where there is no contamination. However, steps can be taken by the humanitarian demining sector as a whole to ensure that communities affected by conflict get the support they need in order to rebuild their economies, commerce and psycho-social fortitude. Humanitarian demining is the key to creating the appropriate conditions that will allow for local governments as well as private organizations and businesses to invest in areas that were previously restricted. By implementing a more cohesive approach to supporting communities affected by IEDs and other ERW, the rate of socio-economic development is liable to increase dramatically.

One way in which this process could be accelerated would be to conduct a nationwide, baseline survey. By doing so it would be possible to identify veredas, within municipalities with ERW suspicion, where there is no contamination. By releasing land as free from suspicion as quickly as possible, it would ensure that communities receive the support they need without the requirement of full intervention by civilian or military humanitarian organization.

34 Based on an increase in value of approximately $12,000 USD for direct beneficiaries and $7,700 USD and multiplied by the number of surveys conducted.

7. Conclusions

7.1 Key findings

The results achieved through this investigation demonstrably show that there is a clear, causal link between socio-economic development and humanitarian mine action intervention. The socio-economic benefits afforded to rural communities affected by conflict and the presence of IEDs through humanitarian demining intervention can be categorized in six principal areas:

i. Productive land use

When referring to productive land use after clearance, attention is more often than not only given to the land which has been physically cleared, though what has been identified is that the clearance of suspected hazardous land results in an overall increase in productivity for the entire property. When there is suspicion of IED contamination and there are doubts as to the precise location of explosive devices, vast areas of potentially productive land are abandoned. When the suspicion is removed, communities have a guarantee of safety and are able to put land that was abandoned, but not necessarily contaminated back into use.

The removal of the threat posed by IEDs and other explosive ordnance has allowed land owners to use their land in confidence, resulting in higher levels of productivity. The information displayed in figure 15, demonstrates that the amount of land in productive use (cultivation and grazing) has increased by an average of 66% from when IEDs first appeared to today.

The use of productive land requires clear and safe access, an outcome of the clearance of a high percentage of minefields cleared on access routes. 47% of direct beneficiary households reported that the blockage caused by IEDs was within their own property, thereby limiting access the amount of land they were able to use productively. In some cases other routes were made available, though 45% of respondents reported that it was the only route to the intended destination. Where cleared access routes are currently in use, 60% of respondents reported that the pathways are used regularly, between two and five times per week.

ii. Economic benefit

One of the more unexpected findings of this investigation was the profound effect of the presence of IEDs had on property values in the municipality of Nariño. As shown in section 2.4.1, property value across direct and indirect beneficiary households decreased by an average of 83% during the time where IEDs were present. Once clearance in the municipality was completed and was declared as landmine free, there was a significant increase in property value by 531% for direct beneficiary households and 438% for indirect beneficiary households. Despite this significant increase in property value, the diminished value over a prolonged period of time has meant that property prices in Nariño are still considerably lower than they are in La Unión, where property prices increased year on year. What this signifies is that the presence of IEDs has stunted economic growth in terms of long term investment in property and though prices are recovering they are still lower than they would have been had the municipality never been contaminated with IEDs.

Direct beneficiary households also reported a negative effect on their income when IEDs appeared in the municipality. Comparing the average income prior to the presence of IEDs and the average income whilst IEDs were present, there was a reduction of income of 38%. With the declaration of Nariño as a landmine free municipality, average monthly incomes began to increase. However, the current levels of income are still lower than the equivalent being earned prior to the presence of IEDs. What this demonstrates is that those most affected by IEDs are still in a period of recovery. If current trends are to continue it is expected that income levels will reach what they were prior to the presences of IEDs in the next three to five years. This signifies that economic impact of IEDs on monthly earnings will be visible for close to a decade after clearance has been completed. However, had clearance not taken place it is likely that the increase in monthly income would be increasing at a far lower rate, if at all.

iii. Social Benefit

The social benefit of humanitarian demining intervention is largely un-documented though through this investigation it is evident that the social and community benefits are considerable. In almost all cases, for all three target groups, an improvement in social connectivity was reported. This included: an improved capacity to share resources, an improved capacity to work together and an improved sense of connectivity with the rest of the municipality.

Perhaps the most significant social benefit achieved through humanitarian demining intervention in Nariño is the reduction the levels of fear of accidents caused by ERW across rural communities. As is shown in figure 24, both direct and indirect beneficiary households reported an improved sense of security in conducting day-to-day activities such as working and transiting through their vereda. This peace of mind provided though the clearance of IEDs and the increase in psychological wellbeing is almost impossible to quantify, but is an integral part of the service that demining organizations in Colombia are able to provide to communities affected by conflict.

According to the information gathered from vereda presidents, a total of 772 displaced families (646 families from Nariño and 126 families from La Unión) have returned since their displacement. This in itself, is a monumental achievement that can be directly attributed to the work carried out by HALO, as this would not have been possible had humanitarian demining not taken place.

iv. Municipal economic growth

The economic health and behavior of each municipality was investigated in order to understand the broader impact of HALO's. As described in section 2.4.2, the average income and expenditure of the municipality of Nariño increased by approximately 89% and 114% respectively over an 18 year period. Over the same period of time, La Unión saw an increase of 192% in income and 182% in expenditure. This signifies that in municipalities where IEDs were present, the economic growth rate is considerably lower.

As identified by the Los Andes economists, one of the principal influencing factors in the level of economic growth is the municipal government's capacity to collect property taxes. Given the considerable decrease in property value, as a result of IEDs and the high levels of displacement, the municipality was limited in its capacity to generate revenue, meaning that expenditure was forced to be cut. During the presence of IEDs (2000-2012), the municipal government collected an average of $182 million COP ($49,000 USD) in property taxes. During the time that HALO was operating in the municipality (2013-2015), there was

an increase of 30%, with an average of $237 million COP ($62,000 USD) and after the municipality was declared as landmine free, the municipal government was able to collect an average of $317 million COP ($83,000 USD). This steady increase in property tax collection can be directly attributed to the increase in property value as a result of clearance as well as a returning population who are eligible for taxation.

v. Implementation of development projects

The implementation of development projects, aimed at improving the socio-economic wellbeing of rural communities is a direct result of the completion of humanitarian demining operations. Of the 14 projects that were identified during this investigation, based on the information provided by the municipal authorities, none were permitted to begin prior to the completion of clearance or declaration of veredas as landmine free. The improvement to basic living conditions through the provision of septic tanks, home improvements and safe, efficient stoves all contribute to a better quality of life. Furthermore, communities have been provided with tools and training that will help diversify crop cultivations and generate income. This is inherently sustainable as it builds capacity within the community to continue to provide for themselves in the future.

The implementation of development projects in La Unión is a key result that demonstrates the importance of land release through NTS. Without the declaration of veredas and eventually the entire municipality, as landmine free, the implementation of development projects in La Unión would not have been possible.

vi. Employment

Since the beginning of HALOs operations in Colombia in 2013, the organization has employed a total of 159 people from the municipality of Nariño. By providing formal employment, in a municipality where job opportunities are limited, employees benefit from a regular salary, healthcare, pension and paid vacation. Whilst employed with HALO, staff learn transferable skills which provide them with opportunities for future employment. By employing staff directly from communities affected by the conflict, HALO aims to support further socio-economic development through re-investment. Of the 65 staff surveyed, 27 staff were able to buy property as a direct result of employment through HALO, meaning that the money they have earned has been re-invested in the municipality.

7.2 Achievement towards the DOS key goals and objectives (2013 – 2016)

As part of this investigation, HALO sought to asses to what degree the key goals and objectives established in grants implemented between 2013 and 2016 have been achieved. The key goals and objectives were as follows:

i To protect victims of conflict and restore access to land and infrastructure;

ii Return of land and infrastructure to productive use;

iii Provide a safe environment for the Colombian habitants and returnees in urban and rural areas, thus facilitating the return of internally displaced people to their hometowns, normalization of local socio-economic conditions to enable repatriation, resettlement and the rehabilitation of the country.

Through the manual clearance of 113,962 m^2 of hazardous land cleared and the destruction of 192 items of explosive ordnance, there have been no accidents caused by ERW in Nariño and La Unión and the lives of victims of the conflict have been protected. As shown in section 2.3, land that was previously blocked due to the presence of IEDs has been returned to productive use. The level of usage of the cleared land is lower than HALO had initially anticipated with several cleared areas not being used by communities. However the secondary effect of clearance is evidenced in an increase in general productivity of agricultural land, with communities assured of their safety to work and access the entirety of their land.

As a result of clearance there has been an improvement in access to services and infrastructure such as public transport and paved roads, as shown in figure 16. Furthermore, through the implementation of development projects such as the laying of new roads, access to infrastructure will continue to grow as long the municipal authorities continue to invest.

With respect to objective iii, the implementation of humanitarian demining activities has contributed considerably to creating a safe environment for residents of Nariño and La Unión. This is evidenced in figure 24, where is shows a significant increase in feelings of security of community members to conduct day-to-day tasks as well as allowing their children to play freely without the fear of an accident from ERW. Furthermore, the return of 772 displaced families is a significant achievement against this objective, supported by the processing of 231 land restitution claims.

Though the socio-economic situation in Nariño and La Unión has improved, the longer term benefits of land release through clearance and NTS are likely not to be seen for another five years or more. However, the foundations for a stable and diverse economy have been laid. Continued support from the DOS will ensure that the conditions for socio-economic development, growth and stability are enabled, through humanitarian demining, in conflict affected communities across Colombia.

Annex A – Survey forms

Direct beneficiary household

Encuesta de hogares
Beneficiarios Directos

"La información recolectada es estrictamente confidencial y solo será usada con fines estadísticos"

Datos de control — **Número formulario**

1 Municipio

2 Vereda

3 Referencia de área despejada

4 Área total despejada

5 Fecha encuesta día _____mes_____año _____

6 Nombre persona encuestada
_____

7 Teléfono persona encuestada _____

8 Sexo (entrevistado)
Hombre [1] Mujer [2]

9 Edad

10 ¿Es víctima registrada?
Sí [1] No [2]

11 ¿Es beneficiario de más de un área despejada?
Sí [1] No [2]

12 Distancia (en kilómetros) desde la vivienda a la cabecera municipal

13 Distancia (en minutos) desde la vivienda a la cabecera municipal

Información de la cabeza del hogar:

14 Edad (años cumplidos)

15 Nivel educativo
- Ninguno [1]
- Primaria incompleta [2]
- Primaria completa [3]
- Secundaria incompleta [4]
- Secundaria completa [5]
- Universitaria incompleta [6]
- Universitaria completa [7]
- Técnico / tecnólogo incompleta [8]
- Técnico / tecnólogo completa [9]

16 Sexo
Hombre [1] Mujer [2]

17 ¿..... siempre ha vivido en este municipio?
Sí [1] No [2]

18 Dónde nació....:
- Aquí en este municipio [1]
- En otro municipio [2]
  Departamento:_____
  Municipio:_____
- En otro país [3]

19 ¿En qué año llegó a vivir a esta vereda?
Año

20 ¿Alguna vez usted o algún miembro de su hogar, se vio obligado a desplazarse?
Sí [1] No [2] → Pase a 23

21 ¿Cuál fue el principal motivo para abandonar su vivienda?
- Trabajo [1]
- Estudio [2]
- Salud [3]
- Amenaza o riesgo para su vida o integridad física ocasionada por el conflicto armado [4]
- Amenaza o riesgo para su vida o integridad física no ocasionada por el conflicto armado [5]
- Presencia de minas antipersonal en el municipio [6]
- Presencia de minas antipersonal en la vereda [7]
- Desastres naturales [8]
- Conformación de un nuevo hogar [9]
- Acompañar a otros miembros del hogar [10]
- Motivos culturales asociados a grupos étnicos [11]
- Otro ¿cuál?_____ [12]

22 ¿En que año retornó ?
a. Al municipio Año
b. A la vereda Año

1

23 **¿Cómo era (es) la composición de su hogar ...?**

Antes de la siembra de mina (s) antipersonal			Durante la siembra de mina (s) antipersonal			Inmediatamente después de la entrega como libre de sospecha			Actualmente		
Número de personas	H	M	Número de personas	H	M	Número de personas	H	M	Número de personas	H	M
a. Menos de 1 año			a. Menos de 1 año			a. Menos de 1 año			a. Menos de 1 año		
b. Entre 1 y 5 años			b. Entre 1 y 5 años			b. Entre 1 y 5 años			b. Entre 1 y 5 años		
c. Entre 6 y 18 años			c. Entre 6 y 18 años			c. Entre 6 y 18 años			c. Entre 6 y 18 años		
d. Entre 19 y 60 años			d. Entre 19 y 60 años			d. Entre 19 y 60 años			d. Entre 19 y 60 años		
e. 61 o más años			e. 61 o más años			e. 61 o más años			e. 61 o más años		

24 **¿En qué actividad se desempeñaba (desempeña) ...?**

Antes de la siembra de minas antipersonal	Durante la siembra de minas antipersonal	Inmediatamente después de la entrega como libre de sospecha	Actualmente
Trabajando 1 → Continúe	Trabajando 1 → Continúe	Trabajando 1 → Continúe	Trabajando 1 → Continúe
Otras actividades 2 → Pase a 29	Otras actividades 2 → Pase a 29	Otras actividades 2 → Pase a 29	Otras actividades 2 → Pase a 29

25 **¿En este trabajo usted era (es) ...?**

Antes de la siembra de minas antipersonal		Durante la siembra de minas antipersonal		Inmediatamente después de la entrega como libre de sospecha		Actualmente	
Obrero o empleado de empresa particular	1	Obrero o empleado de empresa particular	1	Obrero o empleado de empresa particular	1	Obrero o empleado de empresa particular	1
Obrero o empleado del gobierno	2	Obrero o empleado del gobierno	2	Obrero o empleado del gobierno	2	Obrero o empleado del gobierno	2
Empleado doméstico	3	Empleado doméstico	3	Empleado doméstico	3	Empleado doméstico	3
Trabajador por cuenta propia	4	Trabajador por cuenta propia	4	Trabajador por cuenta propia	4	Trabajador por cuenta propia	4
Patrón o empleador	5	Patrón o empleador	5	Patrón o empleador	5	Patrón o empleador	5
Trabajador familiar sin remuneración	6	Trabajador familiar sin remuneración	6	Trabajador familiar sin remuneración	6	Trabajador familiar sin remuneración	6
Trabajador sin remuneración en empresas o negocios de otros hogares	7	Trabajador sin remuneración en empresas o negocios de otros hogares	7	Trabajador sin remuneración en empresas o negocios de otros hogares	7	Trabajador sin remuneración en empresas o negocios de otros hogares	7
Jornalero o peón	8	Jornalero o peón	8	Jornalero o peón	8	Jornalero o peón	8
Otro, ¿cuál? _____	9	Otro, ¿cuál? _____	9	Otro, ¿cuál? _____	9	Otro, ¿cuál? _____	9

26 **¿Cuánto eran (son) sus ingresos mensuales en esta actividad ...?**

Antes de la siembra de minas antipersonal	Durante la siembra de minas antipersonal	Inmediatamente después de la entrega como libre de sospecha	Actualmente
$_____	$_____	$_____	$_____

27 **¿Cuál medio de transporte utilizaba (utiliza) ..?**

Antes de la siembra de minas antipersonal		Durante la siembra de minas antipersonal		Inmediatamente después de la entrega como libre de sospecha		Actualmente	
Transporte público	1	Transporte público	1	Transporte público	1	Transporte público	1
Transporte particular carro	2	Transporte particular carro	2	Transporte particular carro	2	Transporte particular carro	2
Transporte particular moto	3	Transporte particular moto	3	Transporte particular moto	3	Transporte particular moto	3
Bicicleta	4	Bicicleta	4	Bicicleta	4	Bicicleta	4
A pie	5	A pie	5	A pie	5	A pie	5
Lomo de mula o a caballo	6	Lomo de mula o a caballo	6	Lomo de mula o a caballo	6	Lomo de mula o a caballo	6
Otro, ¿cuál?	7	Otro, ¿cuál?	7	Otro, ¿cuál?	7	Otro, ¿cuál?	7

28 **¿Cuál era (es) el tiempo de desplazamiento desde su trabajo hasta la cabecera municipal ..?**

Antes de la siembra de minas antipersonal	Durante la siembra de minas antipersonal	Inmediatamente después de la entrega como libre de sospecha	Actualmente
___ Minutos	___ Minutos	___ Minutos	___ Minutos

29 De presentarse reducción, ¿Cuál fue la razón? _____

_____

Tenencia y financiación de la vivienda

30 **La vivienda ocupada por este hogar es:**

Propia, pero la están pagando	1	→ Pase a 32
Propia, heredada	2	→ Pase a 32
Propia, totalmente pagada	3	→ Pase a 32
En arriendo o subarriendo	4	→ Pase a 31
Prestada sin pagar (usufructo)	5	→ Pase a 32
Sin permiso (ocupante de hecho)	6	→ Pase a 32

31 **Si es arrendado, cuánto considera que vale:**

a. Esta vivienda con el predio $_____

b. Solo el predio $_____

c. Solo la vivienda sin el predio $_____

Datos de la vivienda

32 **Tipo de vivienda (diligencie por observación directa)**

Casa	1
Apartamento / cuarto	2
Otro tipo de vivienda (carpa, tienda, vagón, refugio natural, puente, etc.)	3

33 **Material predominante de los pisos (diligencie por observación directa)**

Baldosa, vinilo, tableta, ladrillo, madera pulida	1
Madera burda, tabla, tablón, otro vegetal	2
Cemento, gravilla	3
Tierra, arena	4

34 **Material predominante de las paredes exteriores (diligencie por observación directa)**

Bloque, ladrillo, piedra, madera pulida	1
Tapia pisada	2
Bahareque revocado	3
Bahareque sin revocar	4
Madera burda, tabla, tablón	5
Material prefabricado	6
Guadua, caña, esterilla, otro vegetal	7
Zinc, tela, lona, cartón, latas, desechos, plástico	8

35 ¿Cuál es el uso principal del predio donde está la vivienda?

Agrícola	1
Pecuario	2
Huerto	3
Recursos naturales	4
Residencial	5
Otro	6

36 Usted posee o usa otro predio diferente a este,donde está la vivienda?

Sí 1 No 2 Pase a 38

37 ¿Cuál es el uso principal de este otro predio?

Agrícola	1
Pecuario	2
Huerto	3
Recursos naturales	4
Residencial	5
Otro	6

38 ¿En su(s) predio(s) se presentó la siembra de minas antipersonal?

Sí 1 No 2

39 ¿Usted considera que este predio, incluyendo la vivienda, se desvalorizó como consecuencia de la presencia de minas antipersonal?

Sí 1 No 2

40 ¿Cuánto considera que valía su predio en el periodo:

a. Antes de la siembra de minas antipersonal $_____

b. Durante la siembra de minas antipersonal $_____

c. Inmediatamente después de la entrega como libre de sospecha $_____

d. Actualmente $_____

Condiciones de vida del hogar

41 Incluyendo sala y comedor, ¿de cuántos cuartos o piezas dispone este hogar? (excluya cocina, los baños, los garajes y los cuartos destinados a negocio)

42 ¿En cuántos de esos cuartos duermen las personas de este hogar?

43 ¿Con cuáles de los siguientes servicios públicos, privados o comunales, cuenta la vivienda? (pregunte uno a uno)

a. Acueducto	1	horas día	
b. Alcantarillado	1		
c. Energía eléctrica	1	horas día	
d. Gas natural conectado a red	1		
e. Gas propano	1		
f. Teléfono fijo /internet	1		
g. Recolección de basuras	1	veces/semana	
h. Ninguno de estos servicios	1		

44 ¿Con qué tipo de servicio sanitario cuenta el hogar?

Inodoro conectado a alcantarillado	1
Inodoro conectado a pozo séptico	2
Inodoro sin conexión	3
Letrina	4
No tiene servicio sanitario	5

45 ¿Cómo eliminan principalmente la basura en este hogar?

La recogen los servicios de aseo/salud	1
La queman	2
La entierran	3
La tiran al río, caño, quebrada o laguna	4
La tiran al patio, lote, zanja o baldío	5
La recoge un servicio informal (zorra, carreta, etc.)	6

46 El agua para preparar los alimentos la obtienen principalmente de:

Acueducto público	1
Acueducto comunal o veredal	2
Pozo con bomba	3
Agua lluvia	4
Río, quebrada, manantial, nacimiento	5
Agua embotellada o en bolsa	6
Otro,¿cuál? _____	7

47 ¿Qué energía o combustible utilizan principalmente para cocinar?

Electricidad	1
Gas natural conectado a red pública	2
Gas propano (en cilindro o pipeta)	3
Otros combustibles	4
Leña	5
Carbón mineral	6
Material de desecho	7

48 Aproximadamente cuánto gasta mensualmente este hogar en:

a. Alimentos $_____
b. Educación $_____
c. Salud $_____
d. Servicios Públicos $_____
e. Transporte $_____
f. Vivienda (arriendo, etc.) $_____
g. Recreación $_____
h. Internet $_____
i. Pago de deudas $_____
j. Otros $_____

49 ¿Cuáles son los ingresos mensuales de este hogar por concepto de:

a. Salarios $_____
b. Jornales $_____
c. Arriendos $_____
d. Ventas de cosechas $_____
e. Venta de animales $_____
f. Venta de productos $_____
g. Ayudas en dinero $_____
h. Otro ingresos $_____

50 Los ingresos de su hogar:

No alcanzan para cubrir los gastos mínimos	1
Sólo alcanzan para cubrir los gastos mínimos	2
Cubren más que los gastos mínimos	3

51 ¿Cuál considera ud que debería ser el ingreso mínimo mensual que requiere su hogar para satisfacer sus necesidades?

$_____

52 ¿Cuántos metros cuadrados tienen:

a. Vivienda _____m^2
b. Predio _____m^2 / _____hectáreas

Observaciones

Uso de la tierra después del despeje

53 ¿Para qué fue (es) usada la tierra despejada? Por favor, de la respuesta en términos de porcentaje

	Antes de la siembra de minas antipersonal	Inmediatamente después de la entrega	Actualmente
a. Producción agrícola (cultivos y/o pecuaria)	%	%	%
Cultivo 1(nombre)			
Cultivo 2 (nombre)			
Cultivo 3 (nombre)			
Cultivo 4 (nombre)			
b. Acceso	%	%	%
c. Recursos naturales	%	%	%
d. Infraestructura	%	%	%
e. Servicios públicos	%	%	%
f. Residencial	%	%	%
g. Sin uso	%	%	%

Pase a 55

Continúe

54 ¿Porqué no está usando la tierra?

Por razones ambientales 1
Falta de recursos 2
Por otro motivo 5 ¿Cuál? _____
No tiene necesidad 3
Le da temor usarlo 4

Pase a 71

Observaciones

PRODUCCION AGRÍCOLA

55 ¿Este predio fue o está siendo usado para cultivos (agricultura)?

Sí 1 → Pase a 56
No 2 → Continúe

56 ¿Cuántas unidades poseía en?	Antes de la siembra de minas antipersonal	Inmediatamente después de la entrega	Actualmente	
a. Área sembrada				
b. Área en barbecho (sin sembrar entre 1y2 años)				
c. Área en pasto o forraje				

CULTIVOS PERMANENTES (Solo se deben diligenciar aquellos cultivos que comercializa)

57 CAÑA PANELERA	Antes de la siembra de minas antipersonal	Inmediatamente después de la entrega	Actualmente	
a. Área cosechada anual				
b. Cantidad producida anual				
Tonelada				
Carga				
c. Valor por unidad (tonelada o carga)				
d. Porcentaje usado para autoconsumo				
e. Ingreso anual				
f. Costo anual de los insumos				

58 CAFÉ	Antes de la siembra de minas antipersonal	Inmediatamente después de la entrega	Actualmente	
a. Área cosechada anual				
b. Cantidad producida anual				
Tonelada				
Carga				
c. Valor por unidad (tonelada o carga)				
d. Porcentaje usado para autoconsumo				
e. Ingreso anual				
f. Costo anual de los insumos				

59 PLÁTANO	Antes de la siembra de minas antipersonal	Inmediatamente después de la entrega	Actualmente	
a. Área cosechada anual				
b. Cantidad producida anual				
Tonelada				
Carga				
c. Valor por unidad (tonelada o carga)				
d. Porcentaje usado para autoconsumo				
e. Ingreso anual				
f. Costo anual de los insumos				

60	AGUACATE	Antes de la siembra de minas antipersonal	Inmediatamente después de la entrega	Actualmente	
	a. Área cosechada anual				
	b. Cantidad producida anual				
	Tonelada				
	Carga				
	c. Valor por unidad (tonelada o carga)				
	d. Porcentaje usado para autoconsumo				
	e. Ingreso anual				
	f. Costo anual de los insumos				

61	CACAO	Antes de la siembra de minas antipersonal	Inmediatamente después de la entrega	Actualmente	
	a. Área cosechada anual				
	b. Cantidad producida anual				
	Tonelada				
	Carga				
	c. Valor por unidad (tonelada o carga)				
	d. Porcentaje usado para autoconsumo				
	e. Ingreso anual				
	f. Costo anual de los insumos				

CULTIVOS TRANSITORIOS (Solo se deben diligenciar aquellos cultivos que comercializa)

62	MAIZ	Antes de la siembra de minas antipersonal	Inmediatamente después de la entrega	Actualmente	
	a. Área cosechada anual				
	b. Cantidad producida anual				
	Tonelada				
	Carga				
	c. Valor por unidad (tonelada o carga)				
	d. Porcentaje usado para autoconsumo				
	e. Ingreso anual				
	f. Costo anual de los insumos				

63	FRIJOL	Antes de la siembra de minas antipersonal	Inmediatamente después de la entrega	Actualmente	
	a. Área cosechada anual				
	b. Cantidad producida anual				
	Tonelada				
	Carga				
	c. Valor por unidad (tonelada o carga)				
	d. Porcentaje usado para autoconsumo				
	e. Ingreso anual				
	f. Costo anual de los insumos				

64	TOMATE	Antes de la siembra de minas antipersonal	Inmediatamente después de la entrega	Actualmente	
	a. Área cosechada anual				
	b. Cantidad producida anual				
	Tonelada				
	Carga				
	c. Valor por unidad (tonelada o carga)				
	d. Porcentaje usado para autoconsumo				
	e. Ingreso anual				
	f. Costo anual de los insumos				

65	VEGETALES	Antes de la siembra de minas antipersonal	Inmediatamente después de la entrega	Actualmente	
	a. Área cosechada anual				
	b. Cantidad producida anual				
	Tonelada				
	Carga				
	c. Valor por unidad (tonelada o carga)				
	d. Porcentaje usado para autoconsumo				
	e. Ingreso anual				
	f. Costo anual de los insumos				

Observaciones

PRODUCCIÓN PECUARIA

66 **¿Este predio fue o es usado para actividades pecuarias?**

Sí [1] → Continúe No [2] → Pase a 71

67	BOVINOS	Antes de la siembra de minas antipersonal	Inmediatamente después de la entrega	Actualmente
	a. Cantidad de ganado bovino			
	b. Cantidad de ganado bovino vendido en el año			
	c. Valor promedio unitario de la cabeza ganado bovino			
	d. Cantidad de litros producidos al mes			
	e. Valor promedio de litro de leche			

68	PORCINOS	Antes de la siembra de minas antipersonal	Inmediatamente después de la entrega	Actualmente
	a. Cantidad de ganado porcino (no incluir traspatio)			
	b. Cantidad de ganado porcino vendido en el año			
	c. Valor promedio de la cabeza ganado porcino			

69	AVIAR	Antes de la siembra de minas antipersonal	Inmediatamente después de la entrega	Actualmente
	a. Cantidad de aves (no incluir traspatio)			
	b. Cantidad de aves vendido en el año			
	c. Valor promedio unitario de venta de las aves			
	d. Cantidad de huevos producidos al mes			
	e. valor promedio de venta de huevos			

70	EQUINOS	Antes de la siembra de minas antipersonal	Inmediatamente después de la entrega	Actualmente
	a. Cantidad de equinos			
	b. Cantidad de equinos vendido en el año			
	c. Valor promedio unitario de venta de equinos			
	d. Ingresos por mulas trabajadas			

Observaciones

Acceso

71 ¿La presencia de minas bloqueó, en algún momento, la vía que usan frecuentemente los miembros de este hogar?

Sí [1] No [2] Pase a 78

72 ¿A qué zonas se desplazaba por la vía bloqueada?

a. Otras partes del mismo predio	1
b. Ruta principal a la cabecera municipal	1
c. Otras fincas	1
d. Establecimientos educativos	1
e. Zonas de reservas naturales	1
f. Otras	1

73 ¿ La vía bloqueada era la única para llegar al destino previsto?

Sí [1] No [2]

74 ¿Cuánto tiempo adicional se demoró por el bloqueo de la vía?

_____ minutos

75 ¿Cuánto duró bloqueada la vía?

_____ años _____ meses

76 ¿Cuántas veces al mes esta vía es usada por los miembros del hogar?

Diario	1	Dos veces al mes	4
2-5 veces a la semana	2	Una vez al mes	5
Una vez a la semana	3		

77 ¿Cómo los afectó el bloqueo de la vía? (lea opciones una a una)

a. Demora en los tiempos de desplazamiento	1
b. Pérdida de uso de tierra útil para cultivos	1
c. Disminución de ingresos económicos	1
Cuánto? (mensual)	$
d. Limitar acceso a otras partes de la vereda	1
e. Inasistencia escolar de niños	1
f. Limitó acceso a infraestrcutura (torres de energía, otros)	
g.Limitó acceo a servicios públicos (vías, centro de salud, otros)	1
h. Bloqueo de implementación de proyectos de desarrollo	1

78 ¿Alguna de las personas menores de este hogar se vieron afectados en su rendimiento escolar por la presencia de minas cerca a su predio?

Sí [1]
No [2] → Pase a 80

79 ¿Cómo los afectó?

	Número de afectados	
	Niños	Niñas
a. Pérdida de año escolar		
b. Abandono		
c. Reiteradas inasistencias (afectó rendimiento)		
d. Incremento en el tiempo de desplazamiento a la escuela, cuántos minutos?		
e. Otros		

9

80 Usted considera que es más fácil, para las personas de este hogar: como resultado del despeje:

a. Desplazarse dentro de las veredas	Sí	1
	No	2
b. Transportar productos o bienes para la comercialización	Sí	1
	No	2

81 ¿Sus gastos mensuales son menores ahora a lo que eran cuando en el municipio había minas antipersonal? (¿ha logrado algún ahorro?)

a. Transporte intermunicipal	1	Ahorro	$_____
b. Acarreos de productos	1	Ahorro	$_____
c. Compra de abonos y fertilizantes	1	Ahorro	$_____
d. Transporte de alimentos	1	Ahorro	$_____
e. Otros ahorros	1	Ahorro	$_____

Observaciones

RECURSOS NATURALES

81 ¿Usted extrae recursos naturales del área despejada?

Sí 1 No 2 Pase a 86

82 ¿Qué recursos naturales ha extraído del área despejada?

	Antes de la	Inmediatamente	Actualme
a. Madera para construcción			
b. Madera para combustible			
c. Agua potable			
d. Agua no potable			
e. Alimentación			
f. Otras			

83 ¿Continuó extrayendo los recursos naturales en otro lugar, durante la presencia de minas antipersonal?

Sí 1 No 2 Pase a 87

84 ¿Esta extracción le produjo mayores costos?

Sí 1 → ¿Cuánto fue? $_____ y

No 2 ¿cuánto tiempo adicional gastaba en horas?

_____ horas

85 ¿Cuántas veces al mes se desplazó para extraer los recursos naturales?

Diario	1
2-5 veces a la semana	2
Una vez a la semana	3
Dos veces al mes	4
Una vez al mes	5

Observaciones

MEJOR ACCESO A SERVICIOS

86 Como resultado del despeje, ¿ha mejorado para las personas del hogar el acceso a alguno de los siguientes servicio?

a. Transporte público (formal o informal)	Si 1	No 2	
b. Vías pavimentadas	Si 1	No 2	
c. Escuelas o centros educativos	Si 1	No 2	
d. Centros de salud	Si 1	No 2	
e. Acueducto y alcantarillado	Si 1	No 2	
f. Servicio de energía	Si 1	No 2	
g. Comunicaciones (internet, celular, tv, etc)	Si 1	No 2	
h. Otro, ¿cuál? _____	Si 1	No 2	

Observaciones

PROYECTOS DE DESARROLLO

87 Según lo que usted conoce, ¿se han realizado, en la vereda donde antes había minas antipersonal, algún proyecto(s) de desarrollo por parte de alguna organización gubernamental o no, en la vereda después de la finalización del despeje?

Sí 1 No 2 → Pase a 89

88 ¿Qué tipo de proyecto(s) fue(ron) ?

a. Infraestructura → Sí 1 No 2

¿En su hogar se beneficiaron de este proyecto? Sí 1 No 2

¿En que fecha empezó? ___ Mes ____ Año

b. Social (apoyo comunidad, nuevos negocios, polideportivos) → Sí 1 No 2

¿En su hogar se beneficiaron de este proyecto? Sí 1 No 2

¿En que fecha empezó? ___ Mes ____ Año

c. Agricultura (semillas, herramientas, subsidios, capacitación) → Sí 1 No 2

¿En su hogar se beneficiaron de este proyecto? Sí 1 No 2

¿En que fecha empezó? ___ Mes ____ Año

10

d. Ambiental (conservación especies zonas protegidas) Sí 1 No 2

¿En su hogar se beneficiaron de este proyecto? Sí 1 No 2

¿En que fecha empezó? Mes Año

e. Otro, ¿cuál? _____ Sí 1 No 2

¿En su hogar se beneficiaron de este proyecto? Sí 1 No 2

¿En que fecha empezó? Mes Año

Observaciones

IMPACTO DE LAS MINAS EN EL BIENESTAR DEL HOGAR

89 ¿Usted fue víctima por una mina antipersonal?

Sí 1 No 2

90 ¿Algún miembro de su hogar fue víctima por mina (s) antipersonal?

Sí 1 No 2

91 ¿Cuál (es) de los siguientes impacto (s), se presentaron en la vereda como consecuencia de la presencia de minas? (pregunte una por una)

a. Generó incertidumbre entre los pobladores	1
b. Limitó el acceso a servicios de salud y educación	1
c. Afectó la comercialización de productos	1
d. Generó temor entre la población	1
e. Problemas en el desplazamiento	1
f. Acceso al trabajo	1
g. Los niños no podían jugar	1

92 ¿La afectación de la mina (s) antipersonal causó alguna pérdida de algún animal?

Sí 1 No 2 Pase a 94

93 ¿Cuántos animales perdió por la presencia de minas antipersonal?

a. Bovinos	
b. Porcinos	
c. Equinos	

Observaciones

CAMBIO SOCIAL Y SEGURIDAD

94 Como consecuencia del despeje ¿las personas del hogar ...?

a. tienen mayor capacidad de compartir con el resto de la comunidad	Sí	1
	No	2
b. tienen mayor capacidad de trabajar juntas con el desto de la comunidad	Sí	1
	No	2
c. se seinten más conectadas con la comunidad de la vereda y el resto del municipio	Sí	1
	No	2

95 Por favor indique como se sentía o se siente ud, viviendo y trabajando en la vereda

	a. Antes del despeje	b. Después del despeje
Nada temeroso	1	1
Un poco temeroso	2	2
Temeroso	3	3
Muy temeroso	4	4

96 ¿Qué tan temeroso se siente usted de caminar por la vereda ?

	a. Antes del despeje	b. Después del despeje
Nada temeroso	1	1
Un poco temeroso	2	2
Temeroso	3	3
Muy temeroso	4	4

97 ¿Qué tan afectado se sentia o se siente en el uso del predio?

	a. Antes del despeje	b. Después del despeje
Nada temeroso	1	1
Un poco temeroso	2	2
Temeroso	3	3
Muy temeroso	4	4

98 Por favor indique ¿qué tan afectado se considera usted cuando sus hijos jugaban o juegan en las veredas que usted sabía que podría haber minas antipersonal?

	a. Antes del despeje	b. Después del despeje
Nada temeroso	1	1
Un poco temeroso	2	2
Temeroso	3	3
Muy temeroso	4	4

Observaciones

11

Staff survey

HALO Colombia Staff Survey - Nariño Post Clearance Project (P96)		
Date of Survey		
Name of Surveyor		
Employee Information		
1. Name		
2. Age		
3. Sex	**M/F**	
4. Insurance #		
5. Municipality of origin		
6. Highest Education Level Completed	Ninguno, Primaria incompleta, Primaria completa, Secundaria incompleta, Secundaria completa, Universitaria incompleta, Universitaria completa, Técnico / tecnólogo incompleta, Técnico / tecnólogo completa	
Employment with HALO		
7. What year did you join HALO?		
8. What is your current job title?		
9. Do you feel you have received adequate training to do your job?	Y/N	
10. From "very satisfied" to "very dissatisfied", how satisfied would you say you are working with HALO?	very satisfied, somewhat satisfied, neutral, somewhat dissatisfied, very dissatisfied.	
11. Why did you choose to work for HALO?	□ Salary □ Help the Community □ Learn new Skills □ Reputation of organization □ No other jobs available □ Opportunity for professional advancements □ Other	Other:
12.How has your life or your families' lives improved since you started working with HALO?	□ More disposable income □ Better Housing □ Better Health □ Better education opportunities □ Better access to childcare □ More leisure time □ Heightened sense of community □ Improved security □ Other	Other:
13. Are there ways things have become more difficult for you or your family due to working with HALO? If yes, please describe.	□Work life balance □Transportation □Childcare □Community Involvement □Continuing education □ None □ Other:	
14. Is HALO the main source of your families income?	Y/N	
Work History, Income, and Benefits		
15. What was your employment status one month before starting with HALO?	Working full time, working part time, not working.	
16. Before joining HALO, what was your most recent job?	Student, Informal Sector, Formal Sector, Self Employed	Other:
17. How many hours per week did you work in that job?		
18. What was your monthly income in that job?		
Household Demographics		
19. Are you the head of your household?	Y/N	
20. How many people live in your household?		
M	#	
W	#	
B	#	
G	#	
21. Is anyone else dependent on your income?	Y/N	
22. If yes, how many people?		
M	#	
W	#	
B	#	
G	#	
23. Are you a registered victim of the conflict?	Y/N	
24. Is someone in your house a registered victim of the conflict?	Y/N	
25. Has anyone in your household been a victim of a mine or UXO accident?	Y/N	
26. Have you been a victim of a mine or UXO accident?	Y/N	
27. Has any land that your family uses or owns ever been contaminated by ERW?	Y/N	

28. If yes, did you participate in the clearance of your family's land through NTS or manual clearance?	Y/N	
Improvements from HALO Income		
29. How financially comfortable would you say you are?	Very comfortable, somewhat comfortable, neither comfortable nor uncomfortable, somewhat uncomfortable, very uncomfortable	
30. Did your salary from HALO allow you to purchase any of the following?		
Home	Y/N	Other:
Land	Y/N	
Car	Y/N	
Motorcycle	Y/N	
Livestock	Y/N	
Farming equipment	Y/N	
Computer	Y/N	
Phone	Y/N	
31. Due to your work with HALO, have you been able to make any improvements to your home? If yes:		
Improved source of drinking water?	Y/N	
Kitchen?	Y/N	
Bathroom?	Y/N	
Flooring?	Y/N	
Building materials?	Y/N	
Number of rooms?	Y/N	
32. Has working with HALO made it easier for you to do any of the following (compared with before HALO):		
Pay rent or mortgage	Easier, More Difficult, No Change	
Pay for transportation	Easier, More Difficult, No Change	
Purchase children's school fees or materials	Easier, More Difficult, No Change	
Go back to school yourself	Easier, More Difficult, No Change	
Access Healthcare	Easier, More Difficult, No Change	
Go on vacation	Easier, More Difficult, No Change	
Save money	Easier, More Difficult, No Change	
Gain access to the Caja de Compensacion	Easier, More Difficult, No Change	
Improve benefits with Caja de Compensacion	Easier, More Difficult, No Change	
Access Childcare	Easier, More Difficult, No Change	
Feel confident in your future or your family's future	Easier, More Difficult, No Change	
Skills Gained		
33. Have any of the following skills improved due to your employment with HALO?		
English	Y/N	
Writing	Y/N	
Math	Y/N	
Technical Skills	Y/N	
Non Technical Skills	Y/N	
Driving	Y/N	
Team Work	Y/N	
Leadership	Y/N	
Interpersonal skills/Soft Skills	Y/N	
34. Do you feel that the training you've received with HALO is transferable to other jobs?	Y/N	
Quality of Life		
35. Has quality of life improved since Nariño was declared mine free?	Y/N	
36. Do you feel that your work is helping to build peace in Colombia?	Y/N	
37. Have you or your family benefitted from any development projects in Nariño since it was declared as mine free?	Y/N	
If yes, please explain:		
Other Comments		
38. Do you have any other thoughts or comments about working with HALO that you would like to give?		

Annex B – Vereda list

#	Municipality	Vereda	Minefields cleared	Meters Cleared	Number of Surveys
1	Nariño	Aguacatal	3	3.025	20
2	Nariño	Alegrias	0	N/A	8
3	Nariño	Balsora	0	N/A	7
4	Nariño	Berlin	0	N/A	4
5	Nariño	Campo Alegre	0	N/A	6
6	Nariño	Damas	2	4.491	15
7	Nariño	El Bosque	1	2.538	11
8	Nariño	El Caraño	0	N/A	7
9	Nariño	El Carmelo	0	N/A	8
10	Nariño	El Condor	0	N/A	11
11	Nariño	El Jazmin	0	N/A	10
12	Nariño	El Limón	2	1.417	14
13	Nariño	El Llano	0	N/A	10
14	Nariño	El Palmar	3	3.779	14
15	Nariño	El Piñal	4	8.941	8
16	Nariño	El Recreo	0	N/A	9
17	Nariño	El Roble	0	N/A	10
18	Nariño	El Zafiro	0	N/A	10
19	Nariño	Guadalito	0	N/A	9
20	Nariño	Guamal	2	5.467	16
21	Nariño	Guamito	0	N/A	7
22	Nariño	La Argentina	0	N/A	8
23	Nariño	La Valvanera	0	N/A	8
24	Nariño	La Española	4	24.232	19
25	Nariño	La Hermosa	0	N/A	10
26	Nariño	La Iguana	0	N/A	3
27	Nariño	La Linda	1	1.263	17
28	Nariño	La Pedrera	3	2.447	10
29	Nariño	Las Mangas	0	N/A	11
30	Nariño	Los Naranjos	0	N/A	1
31	Nariño	Media Cuesta	0	N/A	11
32	Nariño	Montecristo	3	9.306	12
33	Nariño	Morro Azul	0	N/A	16
34	Nariño	Nechi	0	N/A	9
35	Nariño	Pedregal	0	N/A	8
36	Nariño	Puente Linda	0	N/A	8
37	Nariño	Puerto Venus	1	2.360	52
38	Nariño	Quebrada Negra	0	N/A	4
39	Nariño	Quiebra de San José	0	N/A	5
40	Nariño	Quiebra de San Juan	0	N/A	12
41	Nariño	Quiebra Honda	0	N/A	5
42	Nariño	Rio Arriba	0	N/A	11
43	Nariño	San Andrés	4	30.440	31

43	Nariño	San Andrés	4	30.440	31
44	Nariño	San Miguel	1	7.218	14
45	Nariño	San Pablo	0	N/A	9
46	Nariño	San Pedro Abajo	0	N/A	7
47	Nariño	San Pedro Arriba	5	7.002	16
48	Nariño	Santa Rosa	0	N/A	12
49	Nariño	Uvital	0	N/A	10
50	Nariño	Venecia	0	N/A	9
51	La Unión	Vallejuelito Peñas	0	N/A	8
52	La Unión	Buenavista	0	N/A	8
53	La Unión	Chalarca	0	N/A	8
54	La Unión	Concha	0	N/A	9
55	La Unión	El Cardal	0	N/A	8
56	La Unión	Fatima	0	N/A	9
57	La Unión	La Cabaña	0	N/A	8
58	La Unión	La Frontera	0	N/A	8
59	La Unión	Las Brisas	0	N/A	9
60	La Unión	Minitas	0	N/A	9
61	La Unión	Mesopotamia	0	N/A	12
62	La Unión	Pantalio	0	N/A	8
63	La Unión	Piedras Teheran	0	N/A	5
64	La Unión	San Juan	0	N/A	10
65	La Unión	San Miguel Abajo	0	N/A	9
66	La Unión	San Miguel Santa Cru	0	N/A	9

Annex C – Case studies

Johany Zuluaga – Operations Manager

"I never thought I'd be part of a mine clearance organization...Today, being able to contribute to mine clearance and having improved the livelihoods of people from my community, teaching other how to remove antipersonnel mines and explosive devices, gives me a huge sense of satisfaction".

When Johany Zuluaga joined The HALO Trust Colombia, at the age of 23, he never imagined working a humanitarian demining organization, *"I never thought I'd be part of a mine clearance organization, I never thought about removing mines, for me, it was a distant issue, not because I didn't know what they were or what they can do, but because I never envisaged getting that close to a mine. Today, being able to contribute to mine clearance, having worked in my municipality (Nariño, Antioquia) and having improved the livelihoods of people from my community, teaching other how to remove antipersonnel mines and explosive devices, gives me a huge sense of satisfaction".*

Sadly, Johany was exposed to the devastation that is brought about by anti-personnel mines, from a very young age and was a victim of Colombia's more than fifty-year internal conflict. Johany was born in a rural area of the municipality of Nariño, in the department of Antioquia; there, he studied in the local school and when he was only 10 years old, in 1999, the FARC-EP took control of the municipality. *"When I was 10, I watched the guerrilla take over Nariño. I remember a day before the takeover, a group of armed men camped very close to our house in the vereda, and we heard them talking about taking over the town; upon hearing this, my mother and I went to tell our family members to get out of town but by the time we arrived, the guerrilla takeover had already started. During the takeover, I was separated from my mother for about 24 hours. My son is now 13 years old. I picture him in the same situation and it gives me chills."*

The FARC-EP took complete control of the municipality for approximately 18 months, and as access to resources became harder, many members of rural communities, including Johany´s father, were forced

into growing coca as it was one of the only ways of making money. *"We ended up growing illegally because at the time, everyone knew that growing coca was very profitable and we started to see in other parts of the municipality people making good money. Back then, other crops were not as valuable, in Colombia traditional crops do not have a high commercial value, there are poor access roads to transport the products, but with coca, they come to you to buy it. Because of the presence of the guerrilla, coca could be sold only to them, and if there were other buyers paying better, they would kill the other buyers and the people who sold to them."* When the killings started, Johany´s father stopped farming coca for fear for his family's life. Johany and his family saw their friends and neighbors murdered by the guerilla, so they were forced to move from their farm into the municipal town when the fighting got worse as it was safer than being in the countryside.

Johany went on to study to be a Systems Technician and got a job in the local mayor´s office Nariño to support an environmental project. After just a few months he was employed as the Victims Liaison, and it was whilst working at the mayor's office that he came across The HALO Trust. HALO arrived at the municipality undertaking community liaison and explaining the planned humanitarian demining work in region, and Johany municipality contact for the Organization.

Johany was eventually asked to join the HALO team in 2012. Johany, assumed he was being employed *"to carry the deminers backpacks" and perhaps help with interviews for new staff. "I didn't know that I was being employed as a deminer, I never thought that I was going to remove mines, I knew HALO was a demining organization but I thought that I was going to help with the deminers bags or administration, but never that I was going to be the deminer. After HALO´s presentation, I realized what was going on and I asked myself if this was for me. I remember thinking, if this job puts my life at risk, I´ll leave. And now look where I am!"* After passing the interview, Johany signed his contract at the end of 2012 and

undertook a full year of training where he qualified as, not only a deminer, but also a demining leader, supervisor, Explosive Ordnance Disposal technician and non-technical survey assistant. *"When we came to the accreditation we were very nervous, we were the first civilian deminers accredited in Colombia. There were 12 of us and today, we are all still working in the demining sector sharing our expertise"*.

During his HALO career, Johany has held multiple positions across the country, providing him with the knowledge and experience required to be Operations Manager. Johany's ambition has always been to be the head of operations in Colombia though he has great aspirations for his career with HALO, *"I used to see being an Operations Officer or Location Manager as being a distant target, but now I am here, my goal of working on another program outside of Colombia seems achievable. Beyond leading the invaluable work being done in Colombia, I would like to work in another country, to share the knowledge I have gained and support a different HALO program as well as gain more experience to continue my career in humanitarian demining"*.

Alcibiades Muñoz – Beneficiary

"With support from the U.S. government, HALO has helped to bring hope and prosperity back to everyone in Nariño"

Originally born in the neighboring Caldas department, at just four years old Alcibiades Muñoz's family crossed the Samaná River to start a new life in Nariño, Antioquia.

Eventually, his family moved to Puente Linda on the banks of the Samaná to make a living off tourism as people regularly visited the small town to enjoy the rivers' cool water.

Alcibiades explains how life was peaceful at first, and his family was happy in Puente Linda. But in the mid 1990's everything changed when the FARC-EP's 47th front took control over the region. *"People stopped*

coming to Puente Linda, as FARC-EP roadblocks prohibited people from traveling from village to village. They may steal your car, or worse, accuse you of being a government spy".

As the tourism stopped, Alcibiades's family slowly fell upon economic hardships. Their hardships continued even after the FARC-EP finally left their region in the early 2000's. The Nariño municipality hosted some of the most violent fighting between the FARC-EP, paramilitary and Colombian government forces of the entire conflict, which led to widespread ERW contamination, and in turn, the municipality being denominated as a "red" municipality. This title not only inhibits both development projects and land reparation cases, but is also a stern warning of the dangers of ERW in the countryside. Alcibiades family's struggle illustrates how ERW contamination can continue to have a negative effect on the lives of many even years after fighting has stopped.

It wasn't until 2016 when, with support from the U.S. government, HALO completed clearance in Nariño and the municipality was able to change their *"red" title, for a more promising "green"* representation. *"Once Nariño was declared as landmine free, we noticed a real change in our quality of life. People began to return to Puente Linda, tourism sparked, and I was able to open a hotel".*

Thanks to the projects funded by the United States Government, Alcibiades has been able to give his family the quality of life they deserve. Alcibiades want to send his message of gratitude to the U.S. government, *"the United States has helped many more people than just my family, their help in clearing landmines had liberated our whole municipality from fear. This will allow prosperity to come to everyone that lives in Nariño. Thank you HALO, and thank you U.S.A".*

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