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MARKET STUDY OF  
FINANCIAL MECHANISMS FOR  
CLIMATE RISK MANAGEMENT  
IN THE LIVESTOCK SECTOR IN  
GUATEMALA  
REPORTS

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# 1 Executive Summary

This document presents the market study results to identify relevant information, characteristics, and conditions of an enabling environment for climate resilience financial services in livestock in the Peten, Izabal, Jalapa, Jutiapa, and Santa Rosa departments of Guatemala. It was developed by YAPU Solutions as a consultancy deliverable for the Alliance Bioversity International and the International Center for Tropical Agriculture (CIAT) and is part of the Livestock, Climate, and System Resilience initiative of the CGIAR portfolio.

## 2 Framework

### 2.1 Problem

#### 2.1.1 Problem statement

Although the negative effects of climate change are on a global scale, all forecasts point to Central America, which is one of the most vulnerable regions, will suffer more intensely for geographical-meteorological reasons and with devastating effects on the economic and development sectors which has a direct impact on poverty and food insecurity. (Mishaan, 2015)

In Guatemala, climate change causes an increase in average temperature as well as a reduction in precipitation in most of the country, causing water stress (drought). In addition, the probability of extreme weather events such as tropical storms, floods, or forest fires is increased. This affects the main productive sectors of the country, especially the agricultural sector, causing economic losses and social and environmental impacts, mainly in rural communities. The most vulnerable to climate change is the poor rural population since it is made up mostly of peasant families oriented mainly towards subsistence. (Mishaan, 2015)

The agriculture sector is the sector that contributes the most to Guatemala's GHG emissions with 46% of the national total. In this sector, emissions from various agricultural and livestock activities are reported, such as enteric fermentation of ruminants, handling of animal manure, application of nitrogenous fertilizers, rice cultivation, and burning of agricultural residues. (Mishaan, 2015)

According to the CGIAR (a consortium of research centers for food security, reducing rural poverty, improving human health and nutrition, and ensuring sustainable management of natural resources), for millions of families in low- and middle-income countries, having Livestock is a buffer against weather and other shocks. In addition to their nutritional and livelihood benefits, livestock help communities adapt to climate change and provide important environmental services. At the same time, livestock production is highly vulnerable to the effects of climate change, in particular, heat stress and increased rainfall variability (both trends and extreme events). Therefore, one of the most important development challenges is to provide livestock-dependent communities with the support they need to protect and enhance their animal assets, but without accelerating greenhouse gas emissions or degrading land, water and biodiversity.

In recent years, microfinance has taken an important role as a tool to deal with climate change. Funders give greater weight to the financial, social, and environmental returns of microfinance institutions.

The offer of microfinance institutions includes loans for microentrepreneurs and small agricultural producers, for the production, distribution, or maintenance of economic activities, due to how they are carried out, they suppose negative effects on the environment, with very little responsibility for the future of the young generations and a high risk of causing irreversible damage. However,

behavioral changes in individuals and communities can generate economic and investment opportunities.

Some experts point out that it is a priority to build bridges between financial institutions, companies, and micro-entrepreneurs, to make a leap in industrial production and transportation that uses fossil fuels to an economy based on renewable energy. In this way, microfinance becomes a key tool to meet new challenges and it is not enough to allocate resources to the public as loans, and innovative strategies are required to meet this commitment (Passerelles, 2015).

### **2.1.2 Problem formulation**

The above, problem addressed in this study is the identification of the main actors, information, and relevant characteristics for the design of financial mechanisms for resilience in livestock in Guatemala.

It is necessary to collect information on the climatic risks to which small livestock producers are exposed, as well as the main agricultural practices that they apply to adapt to climate change.

Likewise, identify opportunities and requirements for the implementation of financial services and the interest of financial institutions to generate these services.

## **2.2 General objective**

Identify information, characteristics, and relevant conditions of an enabling environment for resilience financial services in livestock in the Peten, Izabal, Jalapa, Jutiapa, and Santa Rosa departments of Guatemala.

### **2.2.1 Specific objectives**

- Identify the main actors that manage financial mechanisms in the areas of influence of the study.
- Identify the main climatic events and impacts and those indirect ones related to climate to which small-scale livestock producers are exposed in the last 5 years.
- Identify the main agricultural (climate) practices that producers are aware of, and apply to adapt to climate change in livestock and the reason why they do not apply the ones they are familiar with.
- Identification of the offer of financial services and main lessons learned.
- Identification of demand and needs for the implementation of financial services for agricultural practices (climate) in livestock producers.
- Identify the interest, capacities, and barriers of the actors to generate financial and non-financial resilience services for livestock.
- Identify the tools and methodologies used by the different actors for climate risk management.
- Quantify the target market for financial and non-financial resilience services for livestock.

## 2.3 Rationale and scope

Faced with the problem described above and the urgency of carrying out actions aimed at reducing the negative impact of climate change, the financial system plays a key role in promoting the adoption of technologies for adaptation and mitigation of climate change and supporting economic growth. sustainable by implementing mechanisms and instruments for the financing of projects with an environmental sustainability approach.

Hence the importance of identifying the key actors and understanding the relevant information and characteristics for the design of financial mechanisms for resilience in livestock in Guatemala, and promoting strategies for the adoption of technologies for mitigation and adaptation to climate change in the agricultural sector.

### 2.3.1 Limitations

The study was carried out with primary information collected through semi-structured interviews and with information obtained through documentary review on the websites of institutions (financial and insurance companies) and public entities. However, there was no response from the institutions (financial and insurance) to the invitation to participate in the individual interviews, due to time constraints due to the closeness of the end of the year. Although good participation was obtained from the Guatemalan Network of Microfinance Institutions -REDIMIF- and the Guatemalan Association of Insurance Institutions -AGIS-.

The study was planned to be carried out in 5 departments, however, difficulties arose to organize the logistics with the associations in 4 departments, for which reason, together with CIAT, it was decided to prioritize the department of Izabal.

During the period of the interviews, there were roadblocks due to protests by the transporter union, which in some cases made it difficult for producers to reach the meeting points to carry out surveys, as well as the displacement of the team in charge of the realization of the same.

### 2.3.2 Scope

This study is delimited to the cattle producers of the Peten, Izabal, Jalapa, Jutiapa, and Santa Rosa departments of Guatemala, and the financial institutions that provide services in this territory or that can influence the promotion of strategies for the adoption of adaptation measures and mitigation of climate change in this productive chain.

## 2.4 Methodological design

### 2.4.1 Target actors

The target actors of this study are all those who play a role in the livestock production ecosystem, including financial service providers.

For purposes of study and analysis, these actors are classified by their roles:

- **General Actors:** in this category are all the organizations that can be promoters of enabling financial services for resilience, such as Public Entities, Funders, Academia, International Cooperation, and Producer Associations.
- **Secondary Actors:** financial providers are located in this category, specifically Financial Entities and Insurance Entities.
- **Primary Actors** refer to livestock producers, the main target stakeholders of this study.

### 2.4.2 Sources and instruments

Regarding the sources of information, the documentary review is used to describe the general context of climate financing in Guatemala.

Additionally, instruments were designed for each category of actors to obtain qualitative and quantitative information relevant to the study.

- In the category of general actors, virtual semi-structured interviews were developed using the instrument: **Annex 1. Semi-structured Interview- General Entities.**
- For the specific actors, virtual semi-structured interviews were developed using the instrument: **Annex 2. Financial and Insurance Semi-structured Interview.**
- To obtain the information from the producers, two instruments were developed, since two sources of information were identified: the producers for whom field surveys were carried out using **Annex 3. Producer Survey**, and field personnel (MAGA extensionists), who underwent a face-to-face survey, **Annex 4 Field Staff Survey.**

Subsequently, primary information is obtained from the web pages and sustainability reports from each of the institutions.

### 2.4.3 Analysis and presentation

The classification of the actors by category makes it possible to analyze the information collected to identify those entities with a key role in enabling financial services for resilience in the sector under study.

#### 1. Analysis for the category of general actors

The documentary review and the instrument **Annex 1. Semi-structured Interview- General Entities** are inputs for identifying the level of interest and the role of these actors in enabling financial services for climate resilience, allowing to identify within this category:



- a. Actors that manage financial mechanisms in the areas of influence of the study.
- b. Main events and climatic impacts to which small livestock producers have been exposed in the last 5 years.
- c. Agricultural practices applied by producers to adapt to climate change in livestock
- d. The demand and needs for the implementation of financial services of agricultural practices (climate) in livestock producers.
- e. The tools and methodologies used by the different actors for climate risk management.

## **2. Analysis for the category of secondary actors**

In this group are the financial entities and insurance entities for which the documentary review was carried out, focused on identifying their interest in finance resilient to climate change, as well as semi-structured interviews were applied to identify these entities :

- a. The main climatic events and impacts and those indirect climate-related ones to which small-scale livestock producers have been exposed in the last 5 years
- b. The offer of financial services and main lessons.
- c. The demand and needs for the implementation of financial services of agricultural practices (climate) in livestock producers.
- d. The interest, capacities, and barriers of the actors to generate financial and non-financial resilience services for livestock.
- e. The tools and methodologies used by the different actors for climate risk management.
- f. Financing strategies for mitigation and adaptation.

## **3. Analysis of the primary actors**

This analysis of the target actors is based on the information collected in the surveys carried out both to livestock producers and to field personnel such as credit officers from financial institutions and MAGA extension agents, with which it seeks to identify:

- a. Main actors that manage financial mechanisms in the areas of influence of the study.
- b. Events and climatic impacts and those indirectly related to the climate to which small producers are exposed in livestock.
- c. Main agricultural (climatic) practices that are known, applied by producers to adapt to climate change in livestock, and the reason why they do not apply those that are known.
- d. The demand and needs for the implementation of financial services of agricultural practices (climate) in livestock producers.

- e. The tools and methodologies used by the different actors for climate risk management.
- f. The target market for financial and non-financial resilience services for livestock.

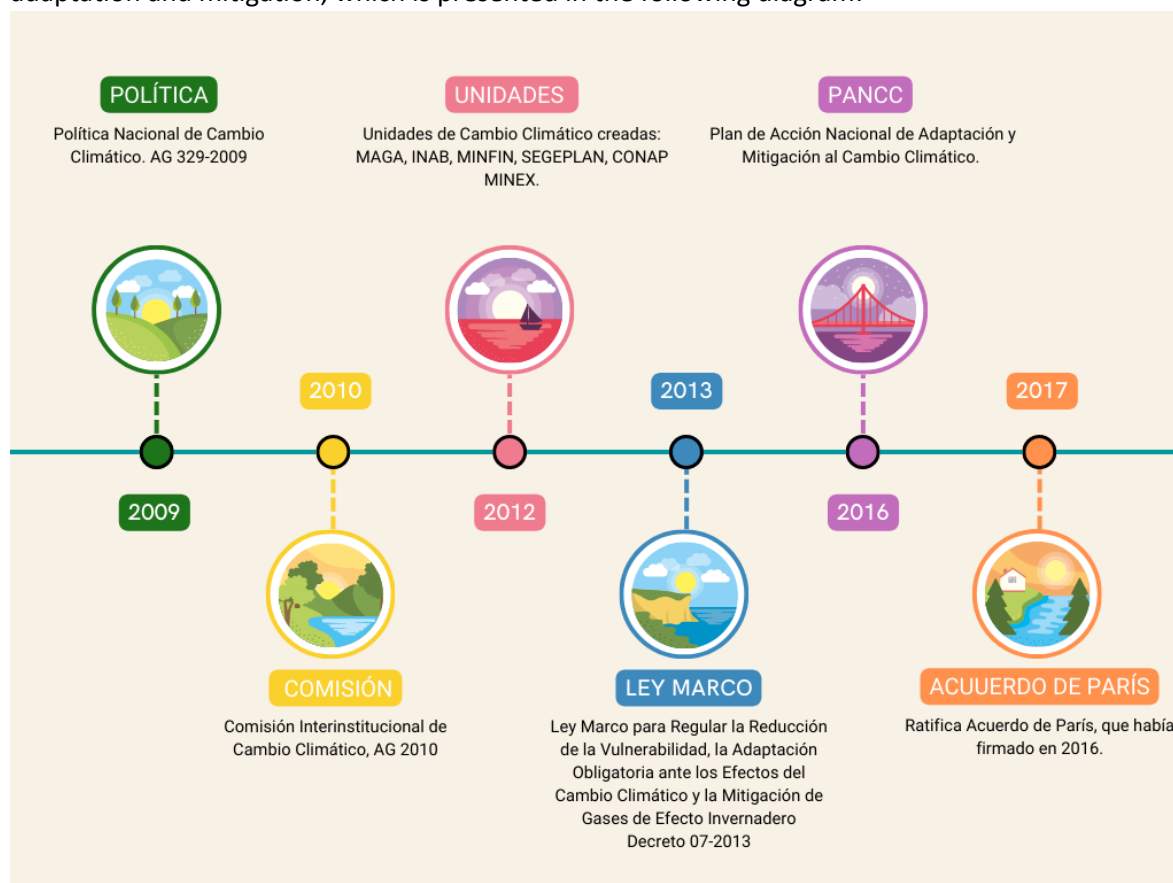
The presentation of the results of the market study is made by each group of target actors. Additionally, a chapter is proposed to present the suggested recommendations.

### 3 Market study for the identification of information, characteristics, and/or relevant conditions and/or conditions in the general actors

Within the category of general actors are public entities, Funders, International Cooperation, and the Association of Producers.

#### 3.1. Public entities

To provide a context of the key public entities in enabling financial services for climate resilience, it is important to know the regulatory framework and Guatemala's commitment to climate change adaptation and mitigation, which is presented in the following diagram:



Source: Own elaboration

The following are the units that have a prominent role in the management carried out by Guatemala for resilience to climate change:

1. Ministry of Agriculture, Livestock, and Food (MAGA)
2. Ministry of Environment and Natural Resources (MARN)

3. National Forest Institute (INAB)
4. Ministry of Public Finance (MINFIN)
5. Secretariat of Planning and Programming of the Presidency (SEGEPLAN)
6. National Council of Protected Areas (CONAP)
7. Ministry of Foreign Affairs (MINEX)
8. The National Climate Change Council (CNCC), which is made up of representatives of the sector: public, private, academia, indigenous peoples, and civil society, is created based on the National Climate Change Action Plan ( PANCC).

Although they are not a central part of the market study, it was possible to identify in the fieldwork carried out the proximity channels that the government has to develop capacities in cattle producers in Guatemala. It is also necessary to mention that they do not manage to cover 100% of the producers and that some of them identified MAGA as a key actor for the accompaniment through technical assistance in each of the populations.

Therefore, the application of the study instruments to the MAGA extension agents was carried out, taking into account the extensive knowledge they have of the regions and the proximity to the producers

## 3.2 Funders and international cooperation

- **Green Climate Fund (GCF)**

Created by the United Nations Framework Convention on Climate Change - UNFCCC in 2010, it is the largest fund in the world dedicated to financing developing countries to reduce their GHG emissions and adapt to the impacts of climate change, contributing with financial resources to projects, policies, and programs. With an emphasis on attention to the needs of the most vulnerable countries.

The role of the GCF in securing financing for developing countries makes it a key player in the fulfillment of the Paris Agreement.

- **Special Fund for Climate Change (FECC)**

The FECC was created at the request of the UNFCCC to finance programs, activities, and measures for technology transfer and complementary to the Global Environment Facility (GEF) and in any project with bilateral and multilateral financing resources.

Administered by the Global Environment Facility (GEF), it works in four (4) service areas: adaptation to climate change; technology transfer; energy, transport, industry, agriculture, forestry, and waste management; and economic diversification for countries dependent on fossil fuels.

- **UN-REDD Program**

Created in 2008 by the UN, it is the United Nations Collaboration Program for the Reduction of Emissions from Deforestation and Forest Degradation in developing countries. The Program is supported by the organizational capacity and technical knowledge of FAO, UNDP, and UNEP.

The objective is to reduce emissions caused by deforestation and forest degradation in developing countries, helping governments to develop and implement National REDD+ Strategies.

The Program supports nationally led REDD+ processes and promotes participation in general, especially that of indigenous peoples and forest-dependent communities, in the implementation of REDD+ at the national and international levels.

- **Other funds**

Bilateral climate finance funds include institutions such as the European Union's Global Alliance against Climate Change+ (AMCC+) or the Japan International Cooperation Agency (JICA), etc.

- **Small Farmers Climate Adaptation Fund - SMAF**

The Small Farmers Climate Adaptation Fund (SMAF) is an impact fund that aims to develop and implement climate adaptation solutions designed to increase the resilience of small farmers to climate change and, at the same time, improve their productivity, ability to generate income, and living conditions.

SMAF's loan window of US\$30 million will be complemented by a technical assistance facility of US\$2-3 million. SMAF will work through a group of microfinance institutions (MFIs) in seven Latin American countries with a combination of financial support and technical assistance. Initially, the target countries are Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Ecuador, and Peru.

SMAF is a triple-impact project that:

1. It provides its investors with positive returns,
2. Improves the socioeconomic conditions and resilience of 20,000 small farmers,
3. Help the environment by introducing sustainable agriculture techniques on small farms.

- **Add- Value**

Add-Value is an impact fund management and financial consulting company based in San José, Costa Rica, offering easy access to Latin American and Caribbean countries, tailored solutions, as well as qualified staff and consultants.

Its mission is to contribute to the impact investment industry through consulting services, as well as through the design, structuring, and management of impact funds and technical assistance facilities that provide sustainable solutions for micro and small entrepreneurs in areas such as financial inclusion, adaptation to climate change, project financing and sustainable financing.

- **CGIAR**

The CGIAR is a consortium of research centers whose work is to increase food security, reduce rural poverty, improve human health and nutrition, and ensure sustainable management of natural resources.

The CGIAR Research Program on Climate Change, Agriculture, and Food Security (CCAFS) brings together the science and expertise of the CGIAR and its partners to catalyze positive change for climate-smart agriculture (CSA). CCAFS positions CGIAR, the world's largest agricultural research

association, in an important role in bringing to scale the practices, technologies, and institutions that enable agriculture to meet the triple objectives of food security, adaptation, and mitigation. The work was funded by donors to the CGIAR Trust Fund, as well as through bilateral funding agreements.

- **International Fund for Agricultural Development - IFAD**

The International Fund for Agricultural Development (IFAD) is an international financial institution and specialized agency of the United Nations based in Rome. Since 1978, the Fund has allocated USD 23.200 million in donations and low-interest loans to projects that have benefited some 518 million people around the world.

The International Fund for Agricultural Development (IFAD) invests in the rural population so that they improve their conditions and increase their food security, and the nutrition of their families, and raise their income. The Fund seeks to help build resilience, develop rural businesses, and gain autonomy in their development.

Investment in resilience and participation in the markets of small agricultural producers can generate great change and achieve sustainable development. This type of economic expenditure must be accompanied by guarantees of access to land and water, energy supply at low prices, better financial services, transportation, and access roads in good condition to connect markets with agricultural production.

The Fund's investments seek gender equality and inclusion and access to technology as a key element to improve information on agricultural markets, environmental conditions, and efficient investment in agricultural production.

- **Development Bank of Latin America - CAF**

CAF is a development bank created in 1970 and made up of 20 countries, of which 18 belong to Latin America and the Caribbean, Spain and Portugal, and 13 private banks in the region.

CAF is committed to improving the quality of life of the Latin American and Caribbean populations. The actions carried out by CAF promote sustainable development and regional integration. The Bank seeks to become a green bank and the economic and social reactivation of the region.

The Bank measures the indicators of contributions to the development of credit operations of investment programs and projects, corporate loans, and equity investments.

- **The Global Environment Facility - FMAM (GEF)**

The Global Environment Facility - GEF (Global Environment Facility - GEF) was created in 1991 to provide resources in the form of donations and assistance in projects that protect “global environmental benefits”. The Fund is made up of 182 member countries, of which 39 are donors, financing projects, in:

- Biodiversity
- International waters
- Land degradation
- Ozone

- Persistent organic pollutants

The GEF operates on a four-year cycle. For each period, donors agree to allocate a certain amount. For the current period, the commitments amount to 4.2 trillion dollars.

The GEF allocates an amount determined by the country for the windows of biodiversity, land degradation, and climate change, which are established according to a base of criteria, this system is called the Transparent System for Resource Allocation (System for Transparent Allocation of Resources -STAR); Within said system, Colombia has an allocation of 53.36 million dollars.

The GEF operates as the financial mechanism for the following multilateral environmental treaties:

- Convention on Biological Diversity - CBD
- United Nations Convention to Combat Desertification - UNCCD
- United Nations Framework Convention on Climate Change – UNFCCC
- Stockholm Convention on Persistent Organic Pollutants
- Montreal Protocol on Substances that Deplete the Ozone (Only applies to the implementation of the Protocol for countries with economies in transition)
- **Gawa Capital**

Since 2009, Gawa Capital has been a leader in impact investing in Spain. The goal is to improve the lives of low-income communities by promoting investment in social enterprises and recognizing a financial return on these investments.

Gawa has been a pioneer in the introduction of impact investing. During this time three (3) funds have been launched, advising a third-party fund - Magallanes Impacto Fil. These Funds invest in equity and debt in developing countries, in companies that offer market solutions to major social challenges, such as poverty reduction and climate change.

Gawa has managed and advised more than 204 million euros, with investments in 16 countries with a positive historical record of 6.34% annual IRR to the investments of the first fund.

Gawa's way of operating is to select companies that offer opportunities to low-income communities, and have a social mission and a sustainable business model, balancing social impact with market returns for investors.

- **BNP Paribas**

BNP Paribas is a European bank with a presence in 65 countries and more than 190,000 employees. BNP Paribas has aligned its CSR (Corporate Social Responsibility) strategy with the UN Sustainable Development Goals and has been introducing a climate component in its methodology to evaluate projects and businesses that finance. BNP has been developing its asset portfolio as ecologically as possible. Dedicates more than 1,000 million euros to responsible investments. The Group has partnered with UNEP to raise \$10,000 billion by 2025 from private investors to finance renewable energy development and protect and restore landscapes across the globe.

The BNP is the world leader in green bonds. Since 2012 the Group has managed E 10.2 billion in green bonds, including E 1.1 billion in equity-linked bonds. These results led the Bank to create and launch a fund dedicated to green bonds.

The Bank supports humanitarian initiatives and supports environmental research on climate change.

BNP Paribas Environmental Absolute Return Equity (EARTH) offers a portfolio of investment funds, it is registered in Germany, Austria, Belgium, Denmark, Spain, Finland, France, Greece, Hungary, Italy, Luxembourg, Singapore, Sweden, and Switzerland. The Fund is managed without reference to any index, it increases the value of its assets over the medium term by investing in shares of companies that address environmental challenges in the energy, commodity, agricultural and industrial markets.

- **LocFund**

BIM Ltda is an impact investment manager with experience in the creation and administration of investment companies and specialized funds that seek to generate a positive impact, a global brand, with a local presence. The funds created by BIM; are:

- Carlson Bolivia Fund Ltd.
- Carlson Dividend - Facility S.A
- Carlson Long Term Growth - Facility S.A
- Carlson Venture Capital - Facility S.A
- GIF | Governance and Financial Inclusion
- Innovasol - Intelligent Energy
- LOCFUND - Local Currency Financing for Microfinance Institutions in Latin America and the Caribbean
- LOCFUND
- MILAC - Microfinance Latin America and the Caribbean
- Prospero Microfinance Fund
- TSF
- LocfundNext

BIM's investment portfolio has exceeded USD 225 million, managed through the funds: LOCFUND II LP, Próspero, LOCFUND LO, and Carlson Funds. For Colombia, the value of the investment amounts to USD 8.38 Million.

Locfund served 45 microfinance institutions that cover an estimated 900,000 clients in 13 countries in Latin America and the Caribbean. 50% of these clients were women and of the total number of borrowers, 44% live in rural areas.

- **USAID**

USAID United States Agency for International Development drives development results. He works to help improve lives, build communities, and promote democracy. Work sectors:

- Agriculture and food security
- Anti-corruption
- Conflict prevention and stabilization



- Democracy, human rights, and governance
- Economic growth and trade
- Education
- Environment, energy, and infrastructure
- Gender equality and women's empowerment
- Global Health
- Humanitarian assistance
- Innovation, technology, and research
- Nutrition

USAID Climate Strategy 2022 - 2030: "Promote equitable and ambitious actions to face the climate crisis." The climate strategy guides the Agency's approach to reducing global greenhouse gas emissions, helping partner countries build resilience to climate change, and improving operations.

The strategy is based on the following principles:

- Locally led the development
- Equity and inclusion
- Participation in the private sector
- Nature-based solutions
- Evidence and innovation

And it has six goals:

- Mitigation - 6 billion metric tons of carbon dioxide equivalent (tCO<sub>2</sub>e).
- Natural and Managed Ecosystems - 100 million hectares conserved, restored, or managed with a climate mitigation benefit.
- Adaptation - 500 million people, seeking support to improve climate resilience, co-leading the implementation of the President's Emergency Plan for Adaptation and Resilience (PREPARE) initiative across the government.
- Finance - \$150 billion in public and private climate finance.
- Support to 80 countries - Align development portfolios with climate change mitigation and adaptation commitments of 80 countries by 2024, and support US partners to achieve systemic changes toward meeting those mitigation commitments in at least 40 countries.
- Critical populations - 40 countries. Support partner countries to achieve systemic change that increases the participation and active leadership in climate action of indigenous peoples, local communities, women, youth, and other marginalized groups.

- **COFIDES**

Cofides is a public-private company that manages funds from the Spanish Government (Secretary of State for Commerce attached to the Ministry of Industry, Commerce, and Tourism), its resources, and those of third-party institutions with different approaches:

- Internationalization of the Spanish economy
- Promotion of economic development and
- Strengthening the solvency of companies affected by COVID-19

Manage funds:

- FIEX
- FONPYME
- FONREC

Provides support to the Spanish Agency for International Development Cooperation (AECID) in the management of the Fund for the Promotion of Development - FONPRODE manages combined financing from the European Union (blending) and mobilizes resources from the United Nations Green Climate Fund.

The share capital of Cofides is made up of the following entities and institutions:

- Ministry of Industry, Commerce, and Tourism
- Spain Export and Investment - ICEX
- Official Credit Institute
- Santander Group
- BBVA
- Sabadell
- Enisa
- Development Bank of Latin America - CAF

Cofides is a member of the Spanish Network of the United Nations Global Compact and its financing lines are:

- Internationalization: Cofides finances Spanish companies that, through a subsidiary or branch or a joint venture, carry out activities such as the creation of a new company, expansion of existing facilities, acquisition of a company, and opening of a commercial office. Cofides operates under shared risk criteria, for this reason, its contribution to a company does not exceed the resources invested by the promoter, values between 75,000 and 35 million euros per project.
- Sustainable Development: In this line of financing, Cofides operates under the blending instrument that combines a non-reimbursable contribution from the European Union with reimbursable financing mobilized by Cofides. These types of resources can be complemented by other national and multilateral financial institutions from the private sector or from the beneficiary country itself.
- Adaptation and Mitigation of Climate Change: This line of financing operates under the blending modality with resources from the Green Climate Fund and its workspace is with accredited entities to channel the available resources towards the financing of projects and programs of the public sector and private.

Cofides is an accredited entity and can manage climate change mitigation and adaptation projects within the framework of the GCF.

- **PROPARCO**

Proparco is the private sector financial entity of the Agence Francaise de Developpement Group (AFD Group). Promotes sustainable economic, social, and environmental development. It provides

financing and support to companies and financial institutions in Africa, Asia, Latin America, and the Middle East. His work is concentrated in the sectors of infrastructure, mainly for renewable energy, agribusiness, financial institutions, health, and education.

The operations it carries out aim to strengthen the contribution of private actors to the achievement of the Sustainable Development Goals (SDG).

Proparco finances companies whose activity contributes to generating jobs and income, providing essential goods and services, and combating climate change, thus contributing to sustainable economic growth and reducing poverty.

Proparco encourages companies and financial institutions from the South to carry out responsible performance in the countries where they are established. For this, Proparco assists its clients in managing the impacts of their activity on society and rural areas, in improving their environmental and social practices, such as better working conditions, fight against discrimination, fight against corruption, and transparency of information.

Proparco advances actions in renewable energy and energy efficiency. Promotes low carbon development, resistant to the impacts of climate change.

The main focus projects that aim to produce energy from renewable sources and energy efficiency. In 2020, 16 projects with climate benefits were financed.

In Latin, America Proparco seeks to reconcile economic growth, social progress, and environmental balance, its work is carried out under the mandate for emerging countries granted by AFD by the French authorities, which aims to support green and inclusive growth and is carried out under two objectives:

Help economies move towards a growth model that uses fewer natural resources and emits lower levels of greenhouse gases.

Promote the development of the local economic base and reduce inequalities.

The resources committed in Latin America range from 453 million euros and 18% of signatures in the year 2021.

- **International Capital Market Association - ICMA**

International Capital Market Association - ICMA, is a self-regulatory organization and a business association for participants in the capital markets and its place of business in Europe.

ICMA's mission is to promote resilient cross-border debt securities markets, which function globally at their core to finance economic growth and sustainable development.

To achieve the mission, ICMA commits to:

- Build confidence in the marketplace by promoting internationally accepted standards of best practice
- Contribute to the development of sustainable finance through capital markets
- Promote information flows and dialogue between participants in international capital markets

- Help ensure that financial regulation promotes the resilience, efficiency, and profitability of international capital markets
- Provide networking opportunities for market participants through conferences, seminars, round tables, and other events
- Promote high professional standards for capital market participants by providing training and education opportunities

Concerning green bonds, the ICMA has established some "Principles" and a Voluntary Procedure Guide for the Issuance.

The principles are a collection of voluntary guidelines whose mission and vision are to promote the role of debt capital markets globally in performance in financing progress toward environmental and social sustainability. They describe the best practices in issuing bonds for social and/or environmental purposes.

The principles raise awareness about the importance of environmental and social impact among financial market participants, to attract capital aimed at sustainable development.

The Green Bond Principles (GBP) emphasize the transparency, accuracy, and completeness of the information to be published and presented by issuers to all interested parties through components and recommendations.

The main components for GBP alignment are:

- Use of funds
- Project evaluation and selection process
- Management of funds
- Reports
- The key recommendations for greater transparency are:
- Green bond frameworks
- External reviews

## 3.4. Producer's associations

### Federation of Cattlemen of Guatemala

The Federation of Cattlemen of Guatemala, known as FEGAGUATE is a civil, private, apolitical, non-profit organization with its legal personality, whose primary purpose is the representation of the affiliated associations in everything related to national livestock, as well as the coordination, protection, and defense of the interests of national livestock. FEGAGUATE, is an organization with federative principles and values, for the defense of livestock unions, which seeks the common good of its base organizations, managing human resources training activities, technical assistance, and promotion of the livestock sector associative business both individual, family, and union, with plans, programs, and projects, sustainable and sustainable, making incidence and citizen participation for the integral development of national livestock. Its partners are:

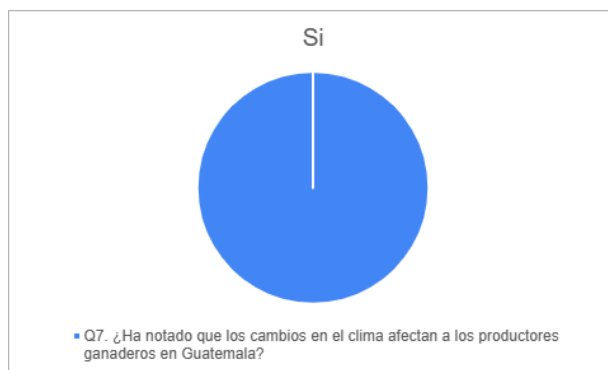
- a. Asobrahaman Guatemala, Guatemalan Association of Brahman Cattle Breeders
- b. Siguan S.A.

- c. Chamber of Producers of Milk of Guatemala C.A.
- d. AGAG Association of Cattlemen and Farmers of Guatemala
- e. AGSOGUA Association of Cattlemen of the South West of Guatemala

Livestock associations in Guatemala are interested in developing innovative processes that improve climate impact and manage to adapt their associates to events generated by the Climate. During the study, they expressed their interest in supporting the project, making human resources available to coordinate the logistics of the necessary analysis. They also expressed their interest in seeing these projects come to a successful conclusion and benefit livestock producers. A repetitive aspect in his comments is that environmental processes should strengthen cattle herds and increase profitability since generating the changes can lead to increased costs. For this reason, sectoral support between public and private entities is essential to build a balance that guarantees resilient and profitable producers.

### 3.5. Findings of the semi-structured interviews General Actors

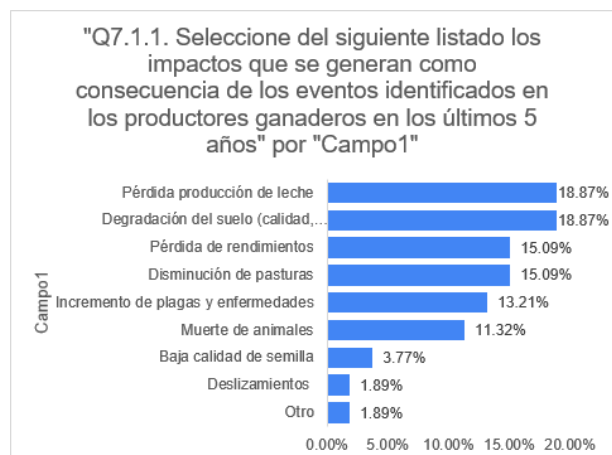
10 semi-structured interviews were applied in this category of actors, achieving the participation of the following: Izabal Cattlemen's Association, MAGA Santa Rosa, Lecheros Unidos de Peten, Independent Consultant, Asobrahman, CATIE (regional headquarters in Costa Rica) office in Guatemala, COOPROLECHE RL, Jalapa Cattlemen Association and Jersey Cattle Breeders Association, IICA. The main findings are presented below.



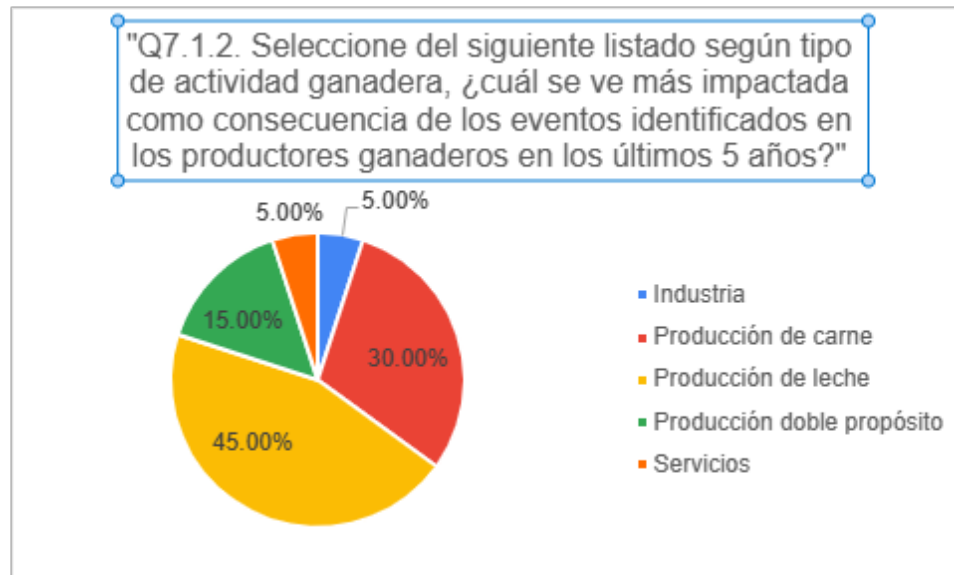
100% of the people interviewed have noticed changes in the climate that have affected livestock producers in Guatemala. Being the prolonged Drought, Veranillo, Canícula the one that they have identified with the highest incidence of 34%, followed by intense rains (16%) and the extended rainy season (12%).



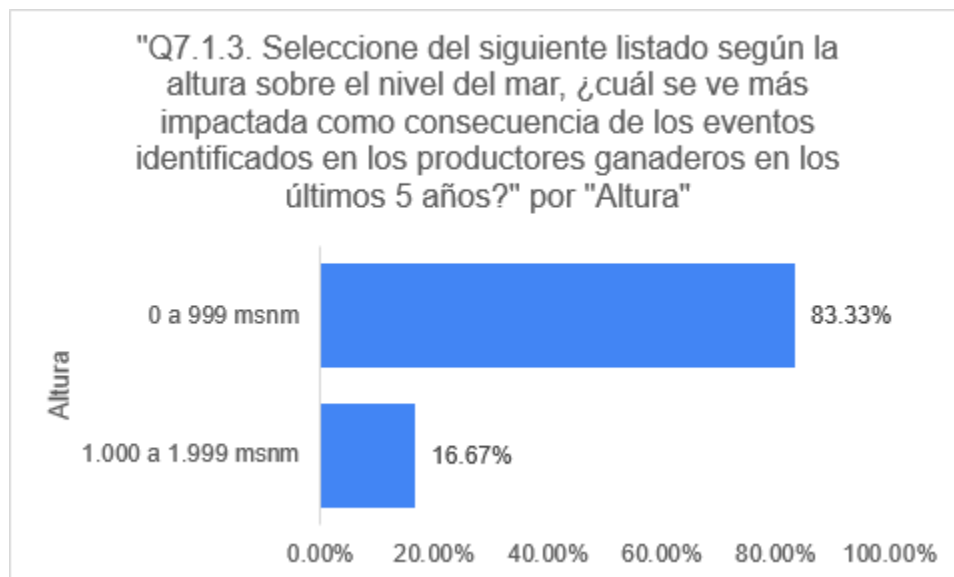
The impacts mostly identified by the general entities are the loss of milk production, soil degradation, loss of yields, and decrease in pastures. The group of interviewees stated that the impacts are generally associated with the feeding of bovines because this generates a decrease in the conversion capacity of the animals.



Additionally, they also mentioned that there are other impacts such as low birth rate, decreased pregnancy, and hay shortage, among others.

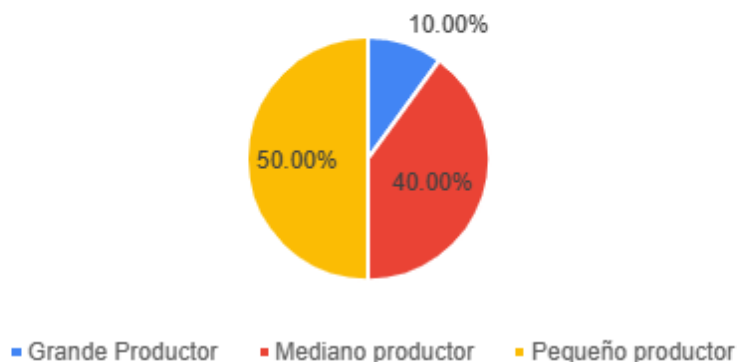


In their order, the livestock activities most impacted as a result of climatic events, according to the respondents from the general entities are Milk production at 45%, Meat production at 30%, and Dual purpose production at 15%. According to the experience of the interviewees, this is because dairy farms are more sensitive to changes in diet, climate, or exogenous factors.



Producers located at altitudes from 0 to 999 meters above sea level are most affected by climatic events (83.3%), followed by those located between 1,000m and 1,900m above sea level (16.67%), according to general entities. One of the reasons mentioned is the floods for which the producers of less than 1,000m are the most since these lands are generally flat and receive all the flow from the mountainous areas. Now, according to the type of producer according their size, it is the small producers (50%) and medium producers (40%) who are the most affected.

"Q7.1.4. Seleccione del siguiente listado según tipo de productor, ¿cuál se ve más impactado como consecuencia de los eventos identificados en los productores ganaderos en los últimos 5 años?"



The respondents mention in the observations that everyone is affected, however, large producers have the greater resource capacity to face the different events. For example, among the options they mentioned was investing in bordas, and when these events occur, the small ones cannot move the cattle to high areas, and they have a low possibility of recovery because they have fewer resources.

In the survey, respondents were asked to define their criteria to classify producers by size, using the following: Small less than 50 cows, Medium up to 200 cows. Although it is a standard that is not clarified and each actor has a different unit of measurement to segment livestock producers.

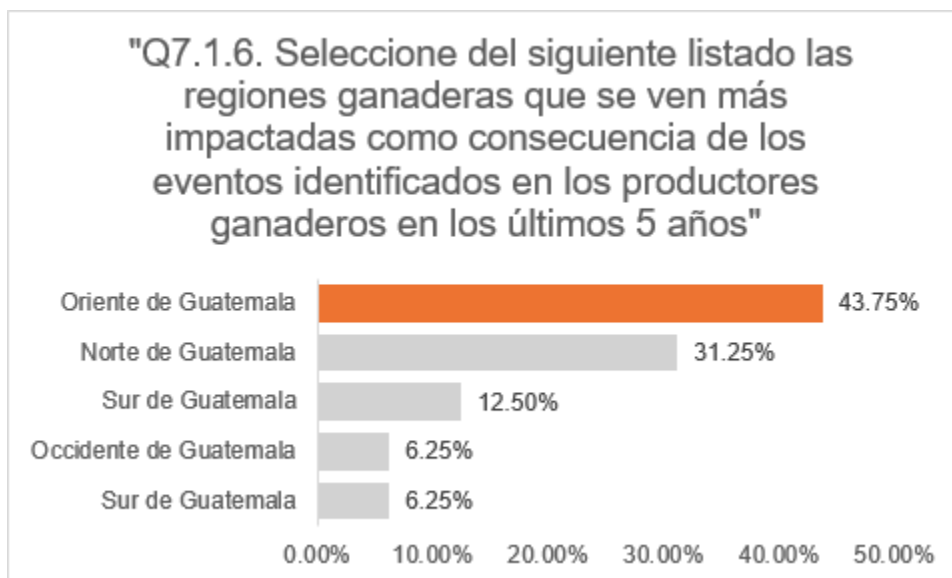
"Q7.1.5. Seleccione del siguiente listado según sistema productivo, ¿cuál se ve más impactado como consecuencia de los eventos identificados en los productores ganaderos en los últimos 5 años?"



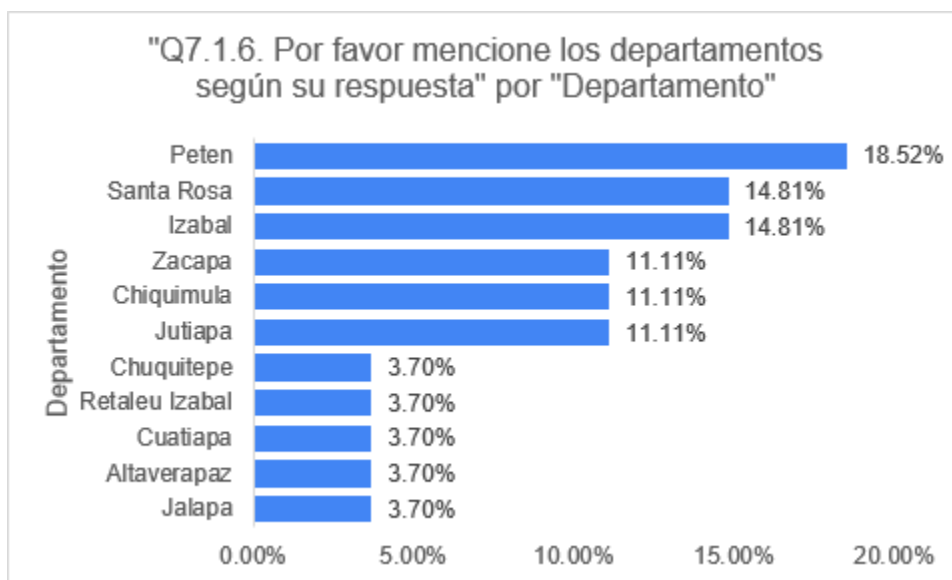
According to the productive system, those who have intensive and extensive livestock are the most affected, each with a participation of 40% within the responses of the respondents, those who use a mixed system have less affectation identified by 20% of the respondents. Among the observations mentioned to justify this response are: The intensive systems are not very developed and when



climatic events occur, the feeding processes of the animals are affected. It is also observed in the comments that in extensive systems there is a decrease in the amount of forage, since in the winter times the cattle trample the grass, generating a decrease in the amount of food per hectare.



The most affected region is the East of Guatemala, identified as such by 43.75% of those surveyed followed by the North of Guatemala with 31.25%. This region has the highest concentration of ranchers and is also one of the lowest areas of the country. This justifies the response of the general actors. The distribution of the most affected areas by the department can be seen below:



## 4 Identification of information, characteristics, and/or relevant conditions in the secondary actors

It is relevant to present a context of the Guatemalan Financial System that facilitates the understanding of the dynamics of this ecosystem, to later address the financing institutions and then the insurers.

### 4.1. Guatemalan Financial System

Made up of legally constituted institutions, authorized by the Monetary Board and supervised by the Superintendency of Banks. The Guatemalan financial system has two segments. The formal financial sector, also known as regulated or supervised, is made up of institutions whose authorization is of a state nature, and which are subject to the supervision of the Superintendency of Banks, a body empowered for that purpose. This sector includes a banking system and a non-banking system. The first includes banking institutions, commercial banks, and financial companies, entities that act as investment banks. For its part, the non-banking financial system is governed by specific laws and is made up of general deposit warehouses, insurance companies, exchange houses, brokerage houses, off-shore entities, credit card entities, credit, microfinance entities, and non-profit microfinance entities, in addition, other entities are included, such as the Institute for the Promotion of Insured Mortgages (FHA). It is also necessary to make a further classification such as financial groups, which are financial conglomerates made up of two or more financial institutions within which there is a response or controlling entity, which must necessarily be a banking institution.



Source: Own elaboration. Using design by Tenate Art in Canva.

## 4.2. Financial institutions

### 4.2.1. REDIMIF

REDIMIF is the network of Microfinance Institutions in Guatemala made up of 16 Institutions, which specialize in providing Financial Services and Business Development for micro and small businesses.

An in-depth meeting was held with the network, who expressed interest and alignment with the union's strategic plans in terms of green finance. The network's plans include the identification and measurement of climate risks, as well as the development of strategies to consolidate its green portfolio.

Although it was not possible to hold meetings with the institutions of the network due to the end of the year, they expressed their interest in participating in the project, socializing, and providing information where necessary to facilitate its development. REDIMIF is a key player that will facilitate rapprochement with microfinance institutions.

## 4.2.2. Identification of financial institutions

To characterize the financial institutions identified in this study, the following criteria were established that allow us to see the focus and interest of the institution in the agricultural sector, specifically livestock and the adaptation and resilience approach:

- Offers agricultural credits
- Offer green product
- Offers exclusive products for livestock

Institution	Type	Agricultural credit	Green product	Exclusive product for livestock
<b>BANRURAL</b>	Bank	YES		YES
<b>Guateinvierte</b>	Depends on the MAGA	YES		NO
<b>BANCO PROMERICA</b>	Bank		YES	NO
<b>BANCO DE ANTIGUA</b>	Bank	YES		YES
<b>BAM</b>	Bank		YES	NO
<b>COOPEAMISTAD</b>	Cooperative	YES		YES
<b>Cooperative MICOOPE</b>	Cooperative	YES		NO
<b>Fundación Genesis Empresarial</b>	Financial	YES		YES
<b>SHARE</b>	Financial	YES		YES
<b>FAFIDESS</b>	Financial	YES		NO
<b>FINCA</b>	Financial	YES		NO
<b>FFDL</b>	Financial		YES	NO
<b>Microcredit Maya Versátil</b>	Financial	YES	YES	YES
<b>REFICOM</b>	Cooperative	YES		YES
<b>Micoope San Miguel Gualán</b>	Cooperative	YES		NO
<b>COOPERATIVE COBÁN</b>	Cooperative	YES		YES
<b>Cooperative Chiquimuljá R.L. Mi Coope</b>	Cooperative	YES		YES
<b>Cooperative Guayacán</b>	Cooperative	YES		YES

Source: Own elaboration

Each of the financial institutions and their financial offer is presented in detail below.



- **BANRURAL**

It is a financial group oriented to the integral rural development of Guatemala, with private and multi-sector capital with universal banking services and national and regional coverage, preferably aimed at micro, small and medium-sized entrepreneurs, farmers, and artisans.

**Products**

- **Producer Friend:** credit aimed at agricultural and livestock producers for planting, maintenance, and harvesting of products, as well as raising and fattening animals, forestry projects, and permanent improvements for agricultural and livestock farms, diversifying the country's production.
- **Abasto Credit Line:** Revolving credit line aimed at micro, small, and medium-sized entrepreneurs and agricultural producers, to have an inventory of products and services, generating immediate liquidity for their supplier.
- **Agricultural Insurance:** Protects the investment made in various crops and animals against risks of nature, guaranteeing the success of the work carried out by agricultural and ranching businessmen.

- **Guateinvierte**

It is an entity dependent on the Ministry of Agriculture, Livestock and Food, a promoter of rural development in Guatemala, focused especially on the sectors: of agriculture, livestock, crafts, and tourism. It uses the name "Dacrédito Program" to more easily identify with working men and women, whose main need is to obtain working capital to establish their crops, expand their productive land, diversify their production, acquire new and more efficient production technologies, or simply venture into more attractive markets within the mentioned sectors.

## Services

- **Formulation of Pre-investment Studies:** intended for individuals or organized groups in rural areas. Arrangement of the assistance of a professional for the formulation of the Pre-investment Study.
- **Technical Assistance:** assistance for beneficiaries on agricultural, administrative, or other issues that represent a good performance of the project. Assistance is provided by a duly registered Service Provider.
- **Agricultural Insurance and others:** the Dacrédito program, through the participating insurance entities, offers this service, covering a portion of the total value of the contracted insurance.



- **Banco Promerica**

Banco Promerica Guatemala is part of the Promerica Group that has more than 30 years in the financial system, in nine countries in Central America, South America, and the Caribbean; with a presence in Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Ecuador, the Cayman Islands, and the Dominican Republic, led by a multinational team of bankers with extensive experience in the financial sector.

Established from the founding of Banco de la Producción, S.A. (BANPRO) in 1991, with a history of consolidation, support, and sustained financial growth. Grupo Promerica continues to grow, in 2016 it began a new stage, by acquiring Banco Citibank de Guatemala S.A. and Cititarjetas de Guatemala Limitada; which includes personal and business loans, credit cards, deposit accounts, a network of agencies and service points; becoming one of the most important financial groups in Latin America.

## Product

- **Green Credits** financial option so that Guatemalan companies can make friendly investments in the environment through energy efficiency and renewable energy, to be self-sustaining. Obtaining a better image, cost reduction, and immediate and/or future savings.

Banco Promerica Guatemala, es parte del Grupo Promerica que cuenta con más de 30 años en el sistema financiero, en nueve países en Centroamérica, Suramérica y el Caribe; con presencia en Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panamá, Ecuador, Islas Caimán y República Dominicana, dirigido por un equipo multinacional de banqueros, con amplia experiencia en el sector financiero.



- **Banco de Antigua**

Banco de Antigua **was founded in July 1997**, and dedicated to microfinance for 25 years. The Banco de Antigua team is made up of more than 1,000 employees, with a network of **55 agencies and more than 5,000 payment points throughout the Guatemalan Republic.**

**Banco de Antigua's** products are simple, timely, and innovative financial solutions to help our clients make their dreams come true. **Providing the best experience, closeness, and accompaniment with financial education.**

Since May 2013, it is part of an important South American financial group with operations in Ecuador, Peru, and Guatemala. Grupo Ribadeneira with more than 27 years in the financial market, winning important recognitions for its inclusion and microfinance model.

#### **Products**

- **Livestock Microcredit:** financing and personalized service: purchase/sale, breeding, production, and fattening.
- **Bantigua Porcine Microcredit:** financing alternatives and personalized service in purchase/sale, breeding, production, and fattening
- **Bantigua Poultry Microcredit:** We offer you the best financing alternatives and personalized service: buying/selling, breeding, production, and fattening.



- **Banco Agromercantil de Guatemala**

The purpose of Grupo Financiero Agromercantil is to promote sustainable economic development to achieve the well-being of all. They respond to a global agenda that is based on the 17 United Nations Sustainable Development Goals, which unites them with other actors in society to undertake impact actions, which in our case we have prioritized on three fronts:

- **Promote the competitiveness of the productive fabric:** with a special focus on promoting agriculture, SMEs, and business transformation.
- **Build more sustainable cities and communities:** with greater access to decent housing, clean transportation, and less polluted environments.
- **Promote financial inclusion:** so that more businesses and people can access the credit they need to promote their projects, with a special emphasis on women.

#### Product

- Bam Sustainable Construction Credit



- **Cooperativa agrícola de Servicios Varios La Amistad, Responsabilidad Limitada**

Savings and Credit Cooperative with 66 years of experience occupy a privileged position among the largest in the country in terms of Assets, out of the total of 25 cooperatives supervised by SUGEF. In addition, COOPEAMISTAD's financial results reflect constant and secure growth in each period.



### Product

- **Livestock Production:** Livestock production of milk and meat. Facilitates working capital that allows your dairy company to reach the highest standards in production, through financing for infrastructure, cattle herd, machinery, vehicles, equipment, contribution certificates, and other investments required.



- **Cooperativa MICOOPE**

The MICOOPE System is the integration of cooperative and solidarity organizations, which at this time constitutes the most important non-profit society of individuals in Guatemala. The MICOOPE System is made up of institutions that carry out work attached to the principles of Cooperation, Solidarity, and Mutual Aid, contributing their work and effort for the satisfaction of more than 2,000,000 Associates.

### Product

- **Agricultural Credit:** intended mainly to finance the agricultural sector; for short, medium, or long-term productions, through payment conditions associated with the production and marketing cycle of your products. Also, financing for the implementation or improvement of crops and/or transformation of agricultural products, seeking to increase production, productivity, and/or competitiveness.



- **Fundación Genesis Empresarial**

Guatemalan foundation specialized in economic and social development, non-profit, without political or religious purposes, which to achieve its sustainable development objectives combines its extensive experience in microfinance and business development services with a social focus, based on constant training and promotion of individual and community development.

They specialize in granting working capital and financial solutions to invest in businesses, improve homes, increase agricultural production, and continue technical and university career studies.

#### **Product**

- **Agricultural loan: diversity of crops:** grains, fruits, vegetables, etc. And livestock production: fattening, reproduction, sale, etc.



- **Asociación SHARE de Guatemala (SHARE)**

Since its foundation, SHARE Association has been a dynamic organization in constant change and adaptation to the prevailing situations in the country and to meet the most critical needs of social and economic development in Guatemala. This work is done with a perspective that offers appropriate returns on investment according to the risk acquired, with a greater social impact compared to conventional investments in the financial industry.

#### **Product**

- **Credi-Agropecuario:** investment in harvest, animal husbandry, or agricultural activities



- **Fundación de Asesoría Financiera a Instituciones de Desarrollo y Servicio Social (FAFIDESS)**

La Fundación de Asesoría Financiera a Instituciones de Desarrollo y Servicio Social, FAFIDESS is a private, non-profit, secular development organization, without political or governmental ties, established in March 1986. It has legal status, as established in Government Agreement No. 185-87, dated March 18, 1987, issued by the Congress of the Republic of Guatemala.

#### **Product**

- **Ecocredit:** a financial product designed to benefit the health and family economy of the target population, contributing to the improvement of the quality and standard of living of the clients served, through the acquisition of wood-saving stoves, water purifiers, and solar panels for basic lighting for rural homes.



- **Guatemala Fundación Internacional Para La Asistencia Comunitaria-FINCA**

The International Foundation for Community Assistance (FINCA) is an institution that for more than 27 years has been dedicated to providing loans in 20 countries around the world in Latin America, Africa, the Middle East, Eurasia, and South Asia.

At an international level, FINCA was born with the hope of being a change agent, providing financial services to entrepreneurs seeking to strengthen their business opportunities, within the demands of a competitive and demanding world. Our range of financial services has been growing and including more products according to the needs of our clients.

## Product

- **Agricultural credit:** focused on the agricultural sector for the growth of production and harvest.



- **Fundación Fondo de Desarrollo Local de Guatemala-FFDL**

The Local Development Fund Foundation of Guatemala was born in 1989 from the International Fe y Alegría movement in Guatemala, with the vision of contributing to the comprehensive development of families. In those years, Fe y Alegría started a program to grant microcredits to the parents of the children it cared for.

Historically, the Foundation has 32 years of contributing to the integral development of people through the granting of microcredits. Its headquarters are located in Guatemala City, it has 3 branches located in Guatemala City, Chimaltenango, Quetzaltenango, and Mazatenango, each of the three branches serving various departments and their municipalities.

## Product

- **Green Credit:** in the installation of solar panels and heaters.



- **Microcredit Maya Versátil**

The company is incorporated in Guatemala with 16 years of experience in the market; They provide microfinance, entrepreneurship, environmental, and development services to individuals, groups, organizations, communities, businesses, and institutions that contribute to economic development.

**The purpose of the institution** is to open development opportunities for sectors of the community that do not have access to the banking system; we believe these opportunities would unlock the potential of our community, increasing local employment opportunities and reducing poverty in our region.

### Products

- **Agricultural loan:** it is aimed at financing agricultural and livestock activities. Destinations: animal husbandry, sale of agricultural products, vegetable cultivation, purchase of equipment, and marketing.
- **Green Credits:** destined so that Guatemalan companies can make friendly investments in the environment through energy efficiency and renewable energy, to be self-sustaining. Destinations: LED lighting, power generation for self-consumption (solar panels), irrigation systems, solar heaters, and any other investment that provides a minimum of 20% global savings.



- **Cooperativa REFIKOM, R.L.**

The community financial system is accessible, timely, and efficient to promote comprehensive development. Community Savings and Credit Cooperative that finances productive initiatives in an accessible, timely, and efficient manner; integrated into a general strategy to promote comprehensive development in western Guatemala.

### Product

- **Livestock credit:** loans for the production and breeding of pigs, cattle, poultry, and fish.



- **Micoope San Miguel Gualán**

The MICOOPE System is made up of institutions that carry out work attached to the principles of Cooperation, Solidarity, and Mutual Aid, contributing their work and effort for the satisfaction of more than 2,000,000 Associates.

### Product

- **Agricultural credits:** destined mainly to finance the agricultural sector; for short, medium, or long-term productions, through payment conditions associated with the production and marketing cycle of your products. Also, financing for the implementation or improvement of crops and/or transformation of agricultural products, seeking to increase production, productivity, and/or competitiveness.



- **COOAJO, R.L.**

The cooperative model of savings and credit, which generates wealth through participation, influences the achievement of social, economic, and environmental sustainability in the places where we have a presence.

### Products

- **Agricultural Credit:** Working capital for crops: maintenance of crops and purchase of land for agriculture



- **COOPERATIVA COBÁN**

Cooperativa's primary objective is to improve the quality of life of those who use financial services, offering equitable benefits to all and providing timely solutions.

**Product**

- **Loans for Livestock:** credit for production costs (breeding and fattening of cattle, pigs, goats, horses), purchase of assets, construction of infrastructure to improve productivity, and purchase of land for livestock purposes.



- **Cooperativa Chiquimuljá R.L. MiCoope**

Cooperativa Chiquimuljá is MICOOPE is made up of 13 service points that carry out work attached to the principles of Cooperation, Solidarity, and Mutual Aid, contributing their work and effort for the satisfaction of more than 44,000 Associates. meet the needs of members.

**Product**

- **Agricultural credit:** destined to finance the agricultural sector, for productions in the short, medium, or long term, through payment conditions associated with the cycle of production and commercialization of products. They also provide financing for the management and purchase of domestic animals for production, marketing, and use.



- **Cooperativa Guayacán**

Cooperativa de Ahorro y Crédito Integral Guayacán, R.L., was founded on July 5, 1966, by the Rev. Father Vicente Haselhorst, who formed a group of 26 enthusiastic people and aware of the economic needs of the town of Guastatoya, gathered a capital of Q.1,000.00; Thus, it began its operations in a small office in the Parsonage, within the Catholic Church of this city.

#### **Product**

- **Agricultural loan:** poultry projects, fattening and raising cattle or pigs, as well as coffee, vegetables, and legumes.

## **4.3 Insurance institutions**

### **4.3.1. AGIS**

The AGIS is a non-profit Association, which brings together 17 Insurance Companies authorized and supervised by the Superintendency of Banks of Guatemala.

During the development of the study, it was possible to approach and participate in an AGIS steering committee, in which the following interesting annotations for the study were extracted:

- It is difficult to design a product to ensure livestock because there is a high moral hazard and it is likely that at the time a claim is filed for any affectation, it will be complex to identify whether the livestock was insured or not.
- For the design of a product, it is necessary to have a subsidized insurance model, taking into account the high risk that this type of product represents. It is suggested that the government allocate incentives that allow them to be part of this subsidy so that the premiums of the insured are affordable for all producers.
- Sufficient information must be available to determine the segment to which the insurance will be directed. This will also provide the necessary information to design the product at a commercial and cost level.



- Like the design of the product, for which there is a facilitating ecosystem, it is necessary to design the access strategy, facilitating the sales channel. For this, they have expressed the importance of approaching microfinance or financial institutions, to have greater proximity and capillarity with the consumer.
- The possibility of compulsorily ensuring producers with high climatic risks should be evaluated. This would increase the base of insured producers and facilitate the increase in coverage.
- It is necessary to have an institution that provides quality climate information to make decisions, both in the approval of policies, monitoring, and claims process.

### 4.3.2. Identification of insurance institutions

To characterize the insurance institutions identified in this study, the following criteria were established that allow us to see the focus and interest of the institution in the agricultural sector, specifically livestock and climate change mitigation focus:

- Offers agricultural insurance.
- Offers weather insurance.
- Offers exclusive products for livestock.

Institution	Agricultural insurance	Climate insurance	Exclusive product for livestock
<b>SEGUROS G&amp;T, S. A.</b>	YES		YES
<b>ASEGURADORA RURAL, S. A. (Ban Rural)</b>	YES		YES
<b>ASEGURADORA COLUMNA</b>	YES		NO

Source: Own elaboration

Below is the detail for each Insurer:



- **SEGUROS G&T, S. A.**

Largest insurance company in Central America according to AGIS. They have more than 350,000 customers with a high level of satisfaction. When purchasing G&T Insurance, you have the support

of BANCO G&T CONTINENTAL, S.A. one of the most important and solid banking institutions in the region for 48 years, with higher average asset growth. It has a rating (AA-) granted by Fitch International Ratings. We have private capital with the highest net income in Central America.

### Product

- **Livestock Insurance:** the risk of death caused by:
- **(Livestock Insurance) Accidents:** This coverage protects against the risk of death of animals caused by accidents such as Fractures, trauma, electric shocks, snake bites, landslides, or esophageal obstruction by foreign bodies.
- **(Livestock Insurance for) Disease:** This coverage protects against the risk of foreseeable and unforeseeable diseases caused by: Bacteria, viruses, parasites, fungi, and metabolic diseases.
- **Forced Slaughter:** This coverage authorizes the slaughter of those cases that are irreversible as a result of an accident or illness.



- **COLUMNA, COMPAÑÍA DE SEGUROS, S. A.**

**Seguros COLUMNA** is a young company, with a high social sense, began operations 25 years ago, emerged from the cooperative sector of Savings and Credit, and is part of the Cooperative Financial Corporation, and its origin dates back to the beginnings of the federation. Since then, it has administered a group life insurance program for those of the affiliated cooperatives, especially for savers and loans, following the model of the cooperatives in the United States of America and Canada. Said service was provided by the Cuna Mutual Insurer (USA) and for this, it had the Department of Mutual Protection. Other products were then added, such as group life insurance for cooperative employees and directors, funeral expenses insurance for spouses and spouses, and insurance to protect cooperatives against the risks inherent in financial intermediation.

## Product

- **Agricultural Insurance:** offers benefits to the associate in case of drought, rain or flood, strong winds, volcanic drought, or lack of soil (excess moisture).



- **ASEGURADORA RURAL, S. A. (Ban Rural)**

Rural Insurance, S.A. It was born in May 2007 with the mission of bringing insurance benefits to the entire population of the country, so that each Guatemalan family has insurance tailored to their possibilities.

For the development of its activities, the Insurer is governed by Decree No. 25-2010 and its regulations, the Commercial Code, its corporate deed, and the general laws of the country. Within these activities, it can carry out insurance operations in the life and damage branches. The Insurer is supervised by the Superintendency of Banks of Guatemala and is a member of Grupo Financiero Banrural.

## Product

- **Livestock Insurance:** Cattle, Pigs, Goats, and Sheep: it is a financial tool that prevents the loss of capital by protecting the investment made in pig herds, used for the production of meat and its derivatives, which are exposed to the risk of death caused by accidents, diseases or forced slaughter.

## 5 Identification of information, characteristics, and/or relevant conditions in the primary actors

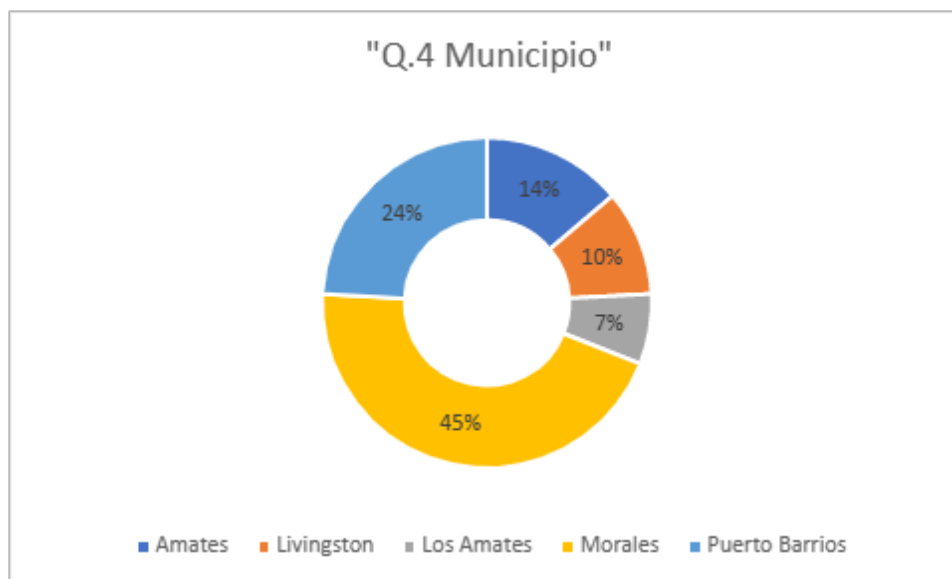
Livestock producers are the primary actors in this study. 58 surveys are applied directly to livestock producers, additionally, surveys are applied to MAGA extension agents.

### 5.1. Findings from producer surveys

The main results of a sample of 58 producers are presented below.

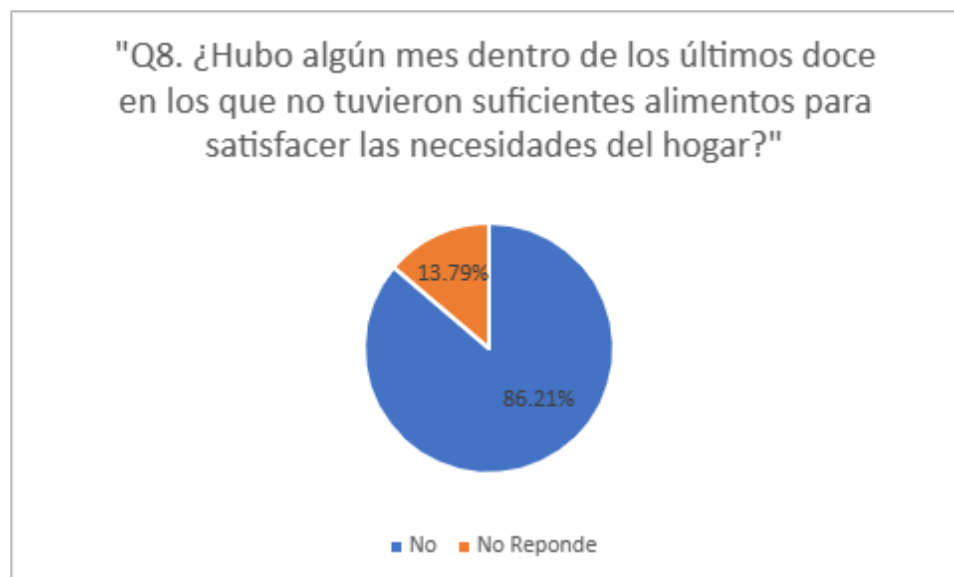
#### 5.1.1. Characterization of livestock producers

Of the livestock producers who participated in the survey, 82.7% are heads of household, distributed in the following municipalities:



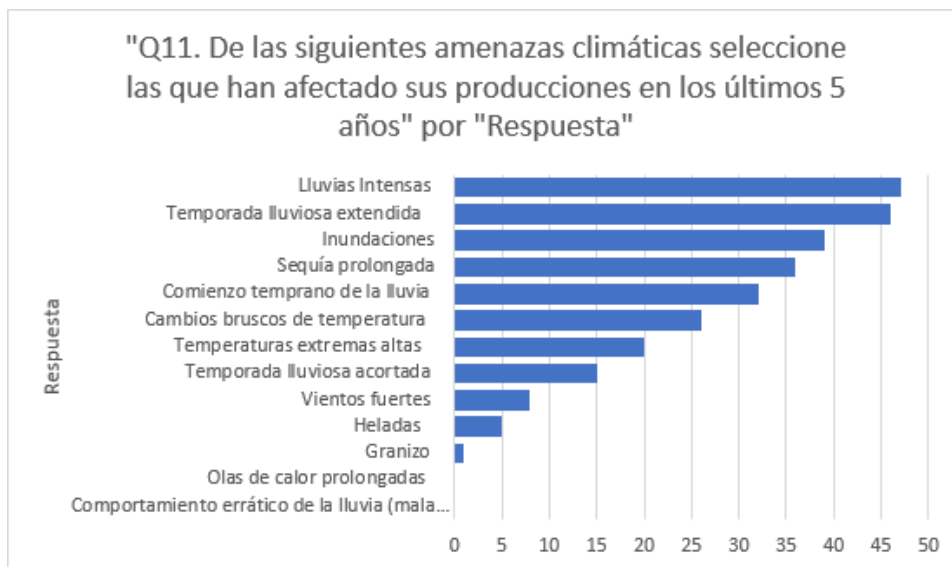


Regarding the scarcity of access to food, 86.21% express not having difficulty accessing food in the last twelve months, and 13.8% prefer not to answer. Demonstrating the survey in the livestock part on the issue of food safety the solution they choose when they go through an economic crisis is the sale of a cow.

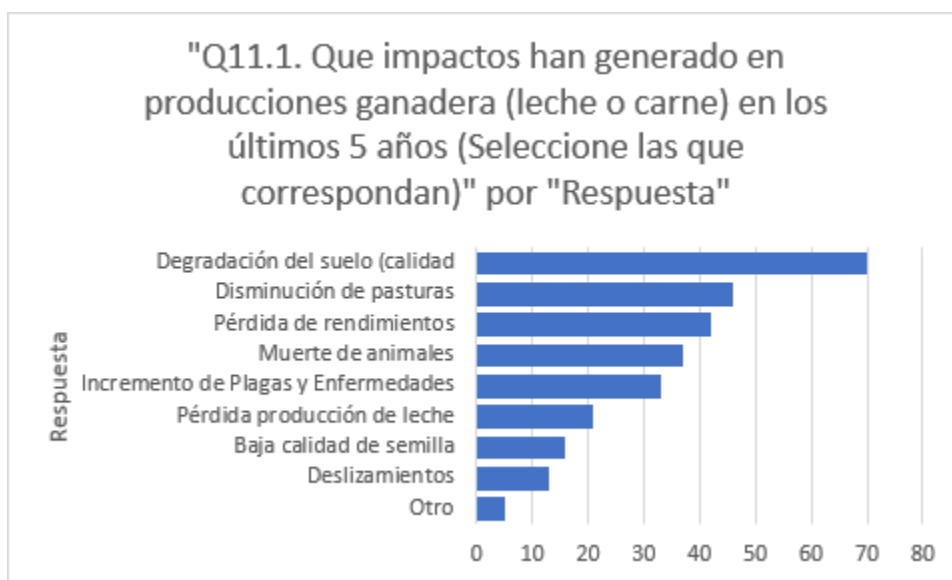


### 5.1.2. Information on climate threats and their impact

Regarding the incidence of climatic events and their impact on livestock producers, it was found that the main climatic threats that producers have experienced are heavy rains and the extended rainy season, each with an incidence of 17%, followed by floods with 14%, prolonged drought with 13% and early onset of rain with 12%.



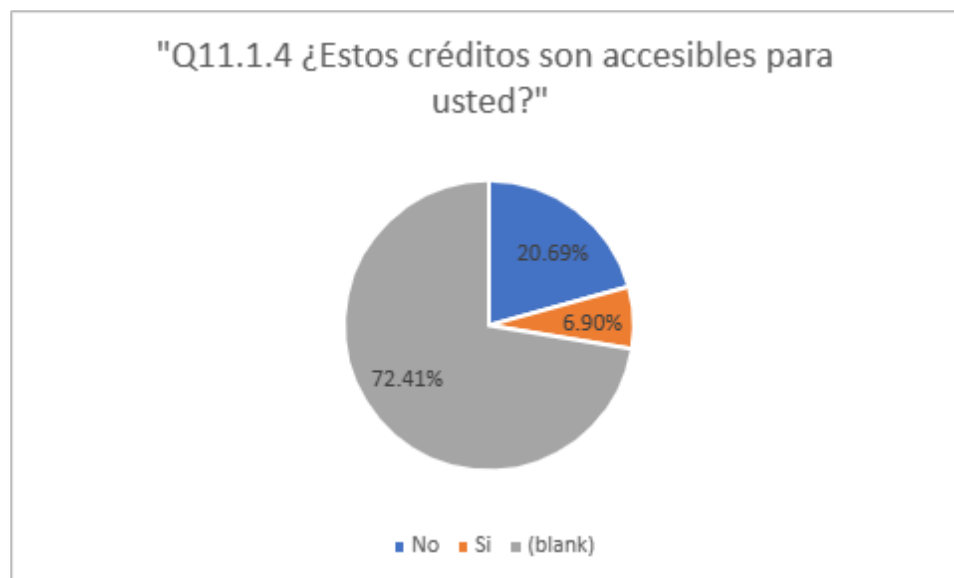
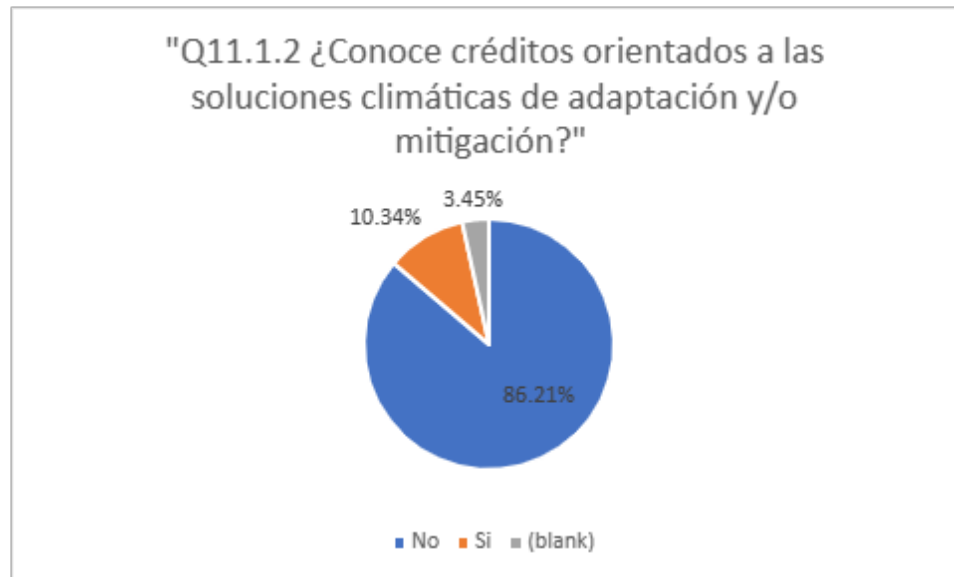
The main impacts that these threats have generated in livestock production are soil degradation by 25%, pasture decrease by 16%, loss of yields by 15%, death of animals by 13%, and the increase in pests and diseases by 12%.



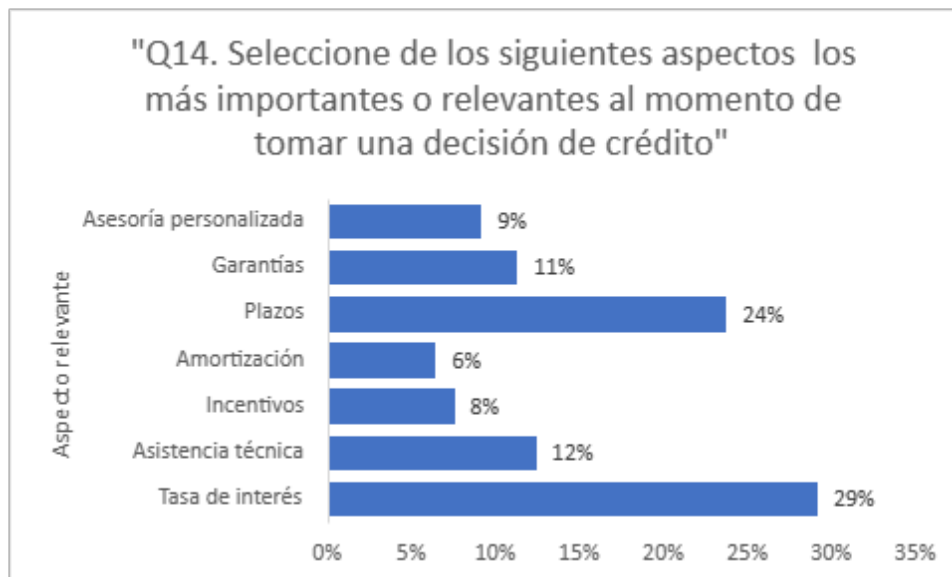
### 5.1.3 Information about financial services

Regarding financial services, livestock producers state that they are not aware of credits aimed at climate adaptation and/or mitigation solutions, only 10.34% indicate that they are aware of this

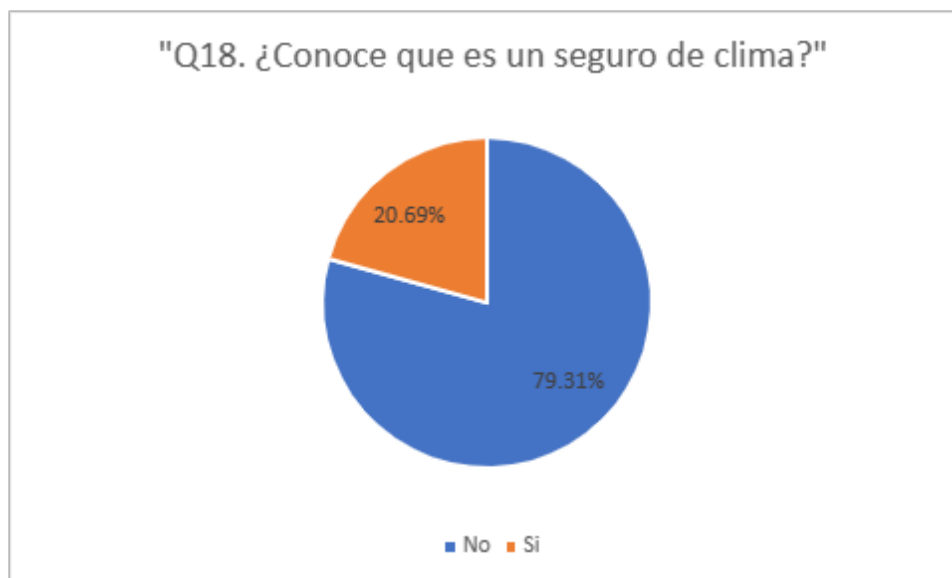
type of credit. For this same reason, they cannot answer if these credits are accessible to them, and only 6.9% indicate that they are accessible.



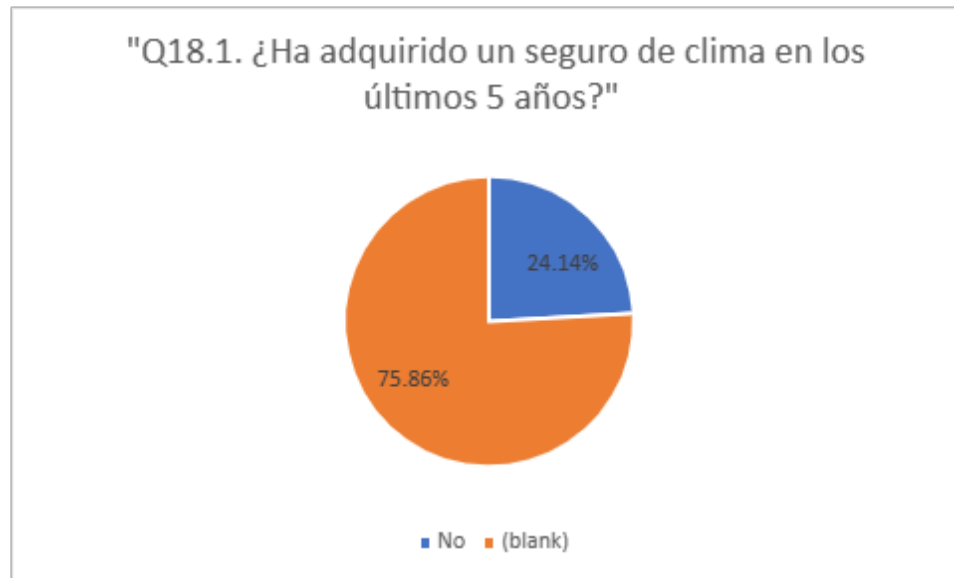
Livestock producers, when making a credit decision, value the conditions of the same, taking into account the interest rate at 29%, and the terms at 24%; they also consider technical assistance at 12% and guarantees as relevant aspects.



Regarding weather insurance, only 20.69% of livestock producers know what weather insurance is, and none reports having acquired one in the last 5 years.







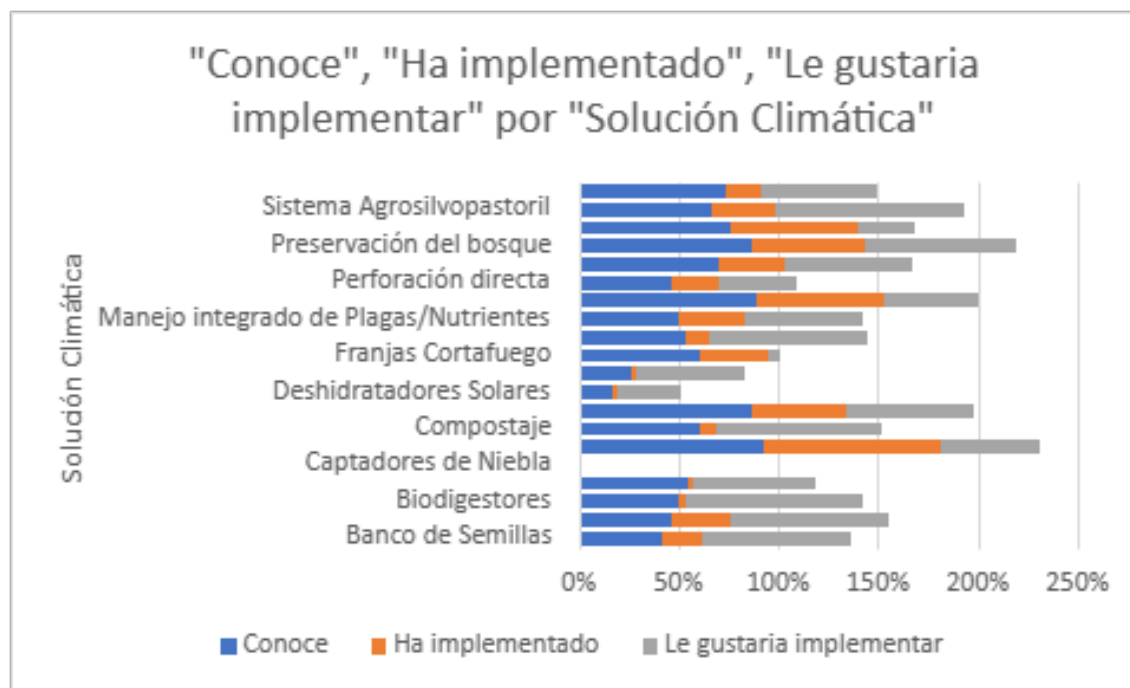
The following are the observations of livestock producers regarding weather insurance:

Observation
Banrural safe for agriculture
Know that Proagro is a Mexican company that provides insurance through Banrural financial
I was unaware until today that it was weather insurance.
Until the day of the survey, he learned that it is climate safe
Even in the survey, he found out that it is
You don't know what weather insurance is
I have not heard, until today in the survey that it is climate safe.
You have not purchased it because the costs are very high for insurance
they haven't heard
I didn't know it existed, until now in the survey.
You do not have any knowledge of any climate insurance
It has been heard that Banrural offers insurance for cattle death, but the costs are very excessive, but when they want to cover it, they put butts to be able to change or cover it.
If you know of insurance focused on crops, but specifically on climate, do not
He knew that it is until today in the interview

In the conversations, the producers mentioned that they value the developments that are made to provide loans or insurance that protect them against economic losses caused by natural disasters.

### 5.1.4 Information on climate solutions

Climate solutions are good practices that promote resilience to climate change in agricultural producers, the study identified the level of knowledge and application of these climate solutions within participating producers, below are the results:



The following table shows in greater detail the interest of livestock producers for each climate solution:

Climate solution	Knows	Has implemented	Would like to implement
Seed bank	41%	21%	75%
Windbreak barriers	47%	29%	80%
Biodigesters	50%	3%	89%
Solar water pumps	55%	2%	61%
Fog catchers	2%	0%	0%
Live fences	93%	88%	50%
Composting	60%	9%	83%
Water conservation	86%	48%	64%
Solar Dehydrators	17%	2%	32%
Stables with controlled environments	26%	3%	54%
Fire Strips	60%	34%	7%
Vermicompost	53%	12%	79%
Integrated Pest/Nutrient Management	50%	33%	60%
Improved Pastures	90%	64%	47%
Direct drilling	47%	24%	38%
Fodder Plants	71%	33%	64%

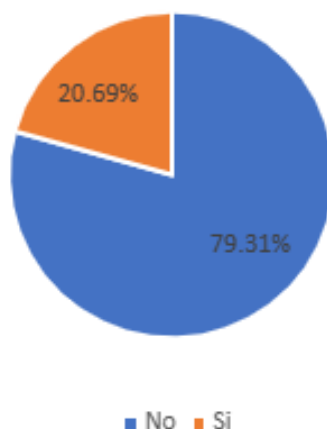
Forest preservation	86%	57%	76%
Water reservoir	76%	64%	29%
Agrosilvopastoral system	67%	31%	95%
Irrigation systems	74%	17%	58%

The following are the data for the area of implementation, cost, and training for each climate solution:

Climate solution	Average Implementation area *m2	Average Implement cost	Received technical assistance
Seed bank	5,577	83	8%
Windbreak barriers	57,967	6,400	12%
Biodigesters	8	100,000	100%
Solar water pumps			0%
Fog catchers			
Live fences	500,044	20,105	8%
Composting	2,682	1,167	0%
Water conservation	75,086	25,588	0%
Solar Dehydrators			100%
Stables with controlled environments	3,750		0%
Fire Strips	106,042	8,732	5%
Vermicompost	97	2,125	0%
Integrated Pest/Nutrient Management	175,353	9,511	11%
Improved Pastures	621,463	71,639	8%
Direct drilling	9	53,900	14%
Fodder Plants	88,660	7,708	5%
Forest preservation	446,371	12,382	15%
Water reservoir	4,298	101,705	16%
Agrosilvopastoral system	339,661	20,438	11%
Irrigation systems	95,977	70,000	10%

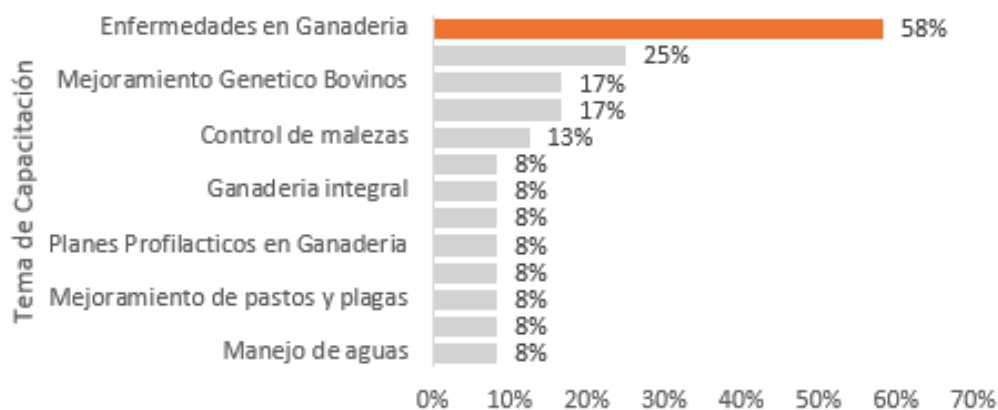
Training and technical assistance are fundamental mechanisms for the promotion and implementation of climate solutions for resilience, only 20.69% of the producers stated that they had been trained in the last 5 years. The main training topic was Livestock Diseases and to a lesser extent (25%) Climate Themes.

"Q12. ¿En los últimos 5 años ha recibido asistencia técnica y/o capacitaciones?"



"Q12.1. Mencione los temas de los que ha recibido asistencia técnica y/o capacitaciones →

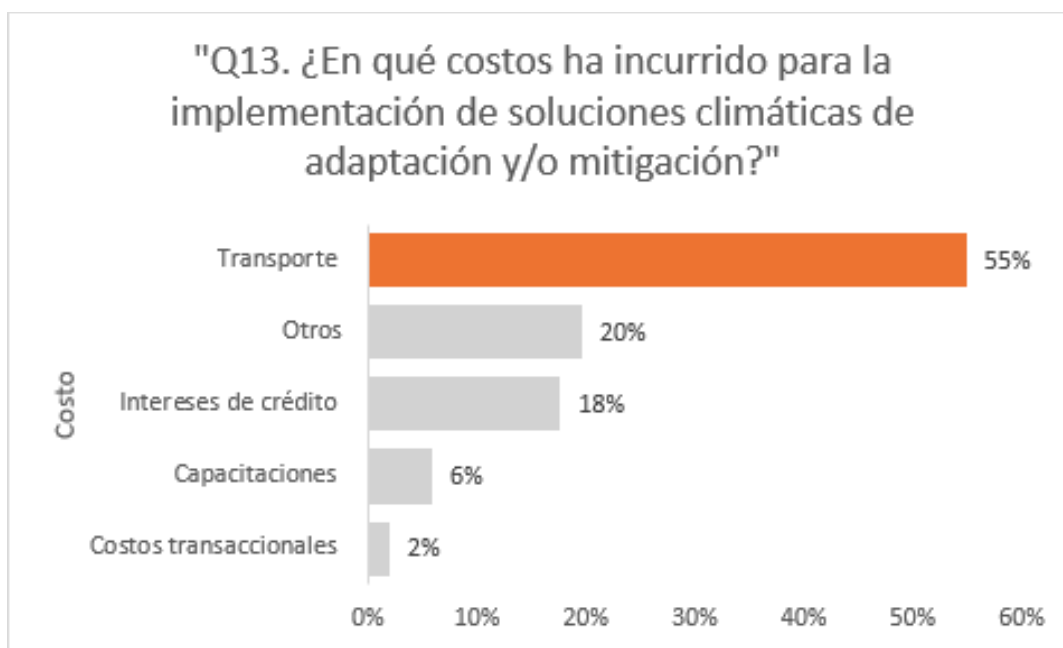
Tema × 1."



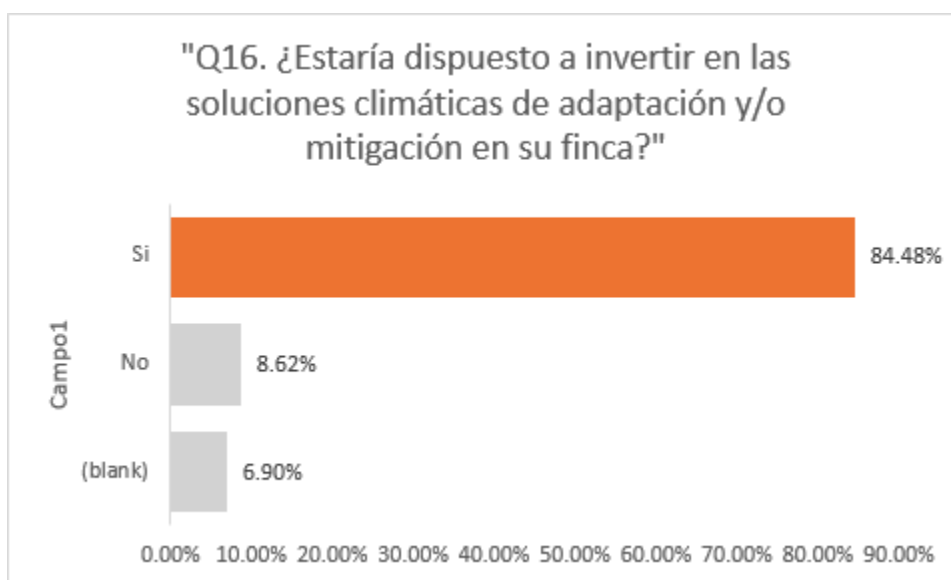
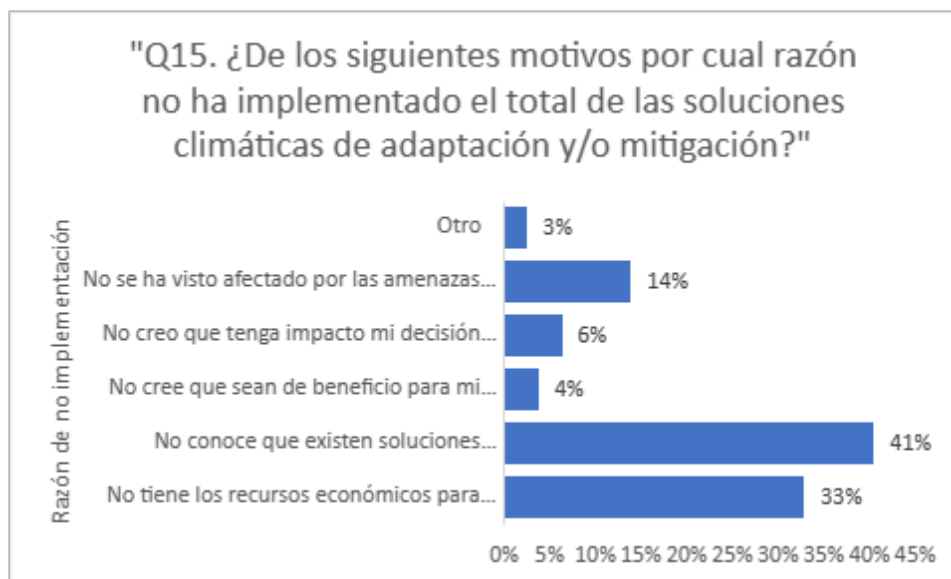
Training Topic	Participation
Diseases in Livestock	58%
climatic themes	25%
Weed control	17%
forest conservation	17%
Bovine Genetic Improvement	17%
Comprehensive livestock	8%
Improvement of pastures and pests	8%

silvopastoral	8%
Weed control	8%
pest control	8%
Hydroponics	8%
Pests, diseases, and soils	8%
Prophylactic Plans in Livestock	8%
water management	8%

Those who have implemented climate solutions state that the main cost is transportation (for bringing from the municipality to the farm) at 55%, followed at 20% by others, unfortunately, there was no specification of this concept.



41% of livestock producers state that they do not know of the existence of climate solutions, this being the main reason why they have not implemented them, as well as for not having economic resources to implement them with 33%. However, 84.48% would be willing to invest in climate solutions on their farm.



Livestock producers value the following characteristics of climate solution providers in the following order: Guarantee of the delivered product, Delivery of the product on the farm, being the most relevant. They also highlight the local presence, national presence, support service, and technical assistance.

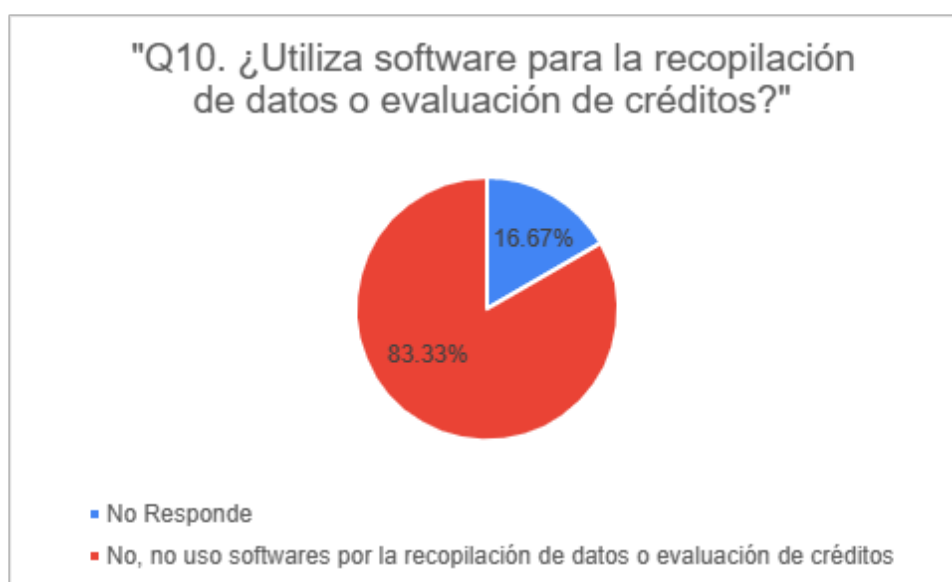
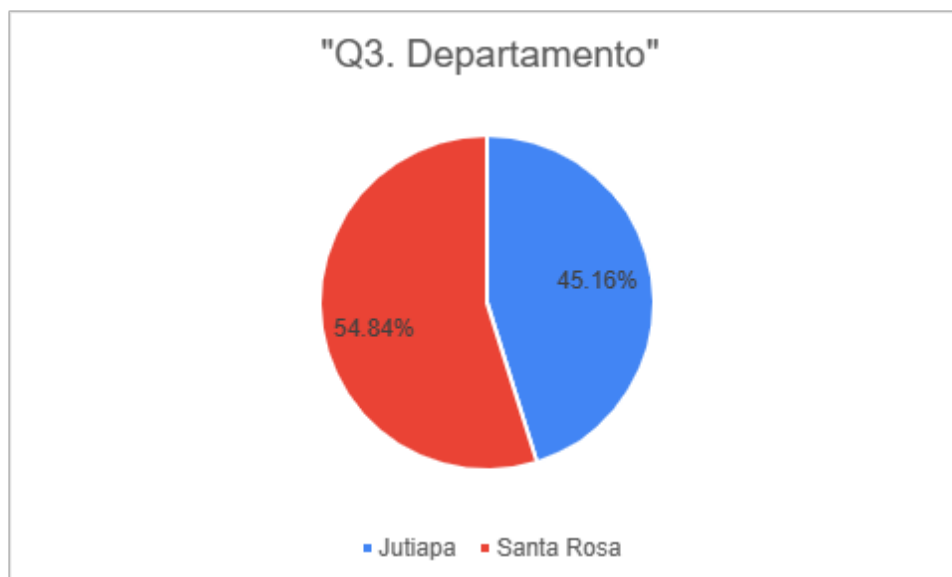


## 5.2. Findings from surveys of field staff (extension agents)

31 surveys were carried out to MAGA extension agents, the results are presented below.

### 5.2.1. Characterization of respondents

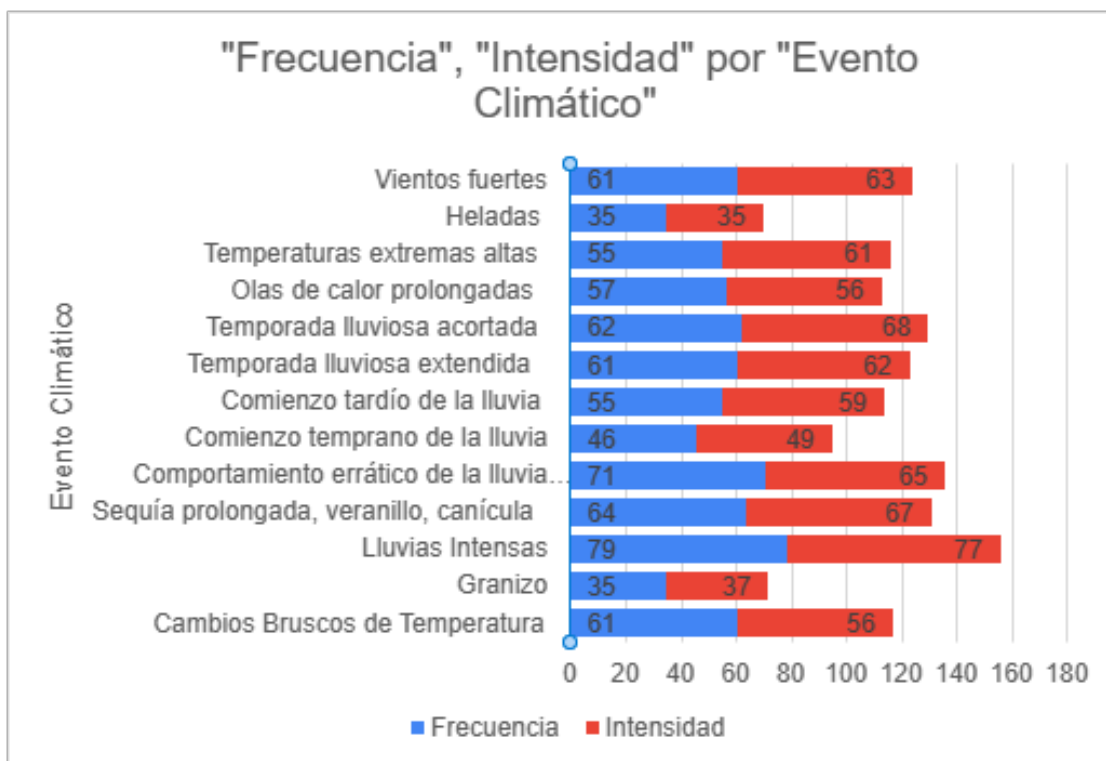
The surveyed extension agents are located in the departments of Juliapa (54.8%) and Santa Rosa (45.16%) and do not use software to collect data or evaluate credits.



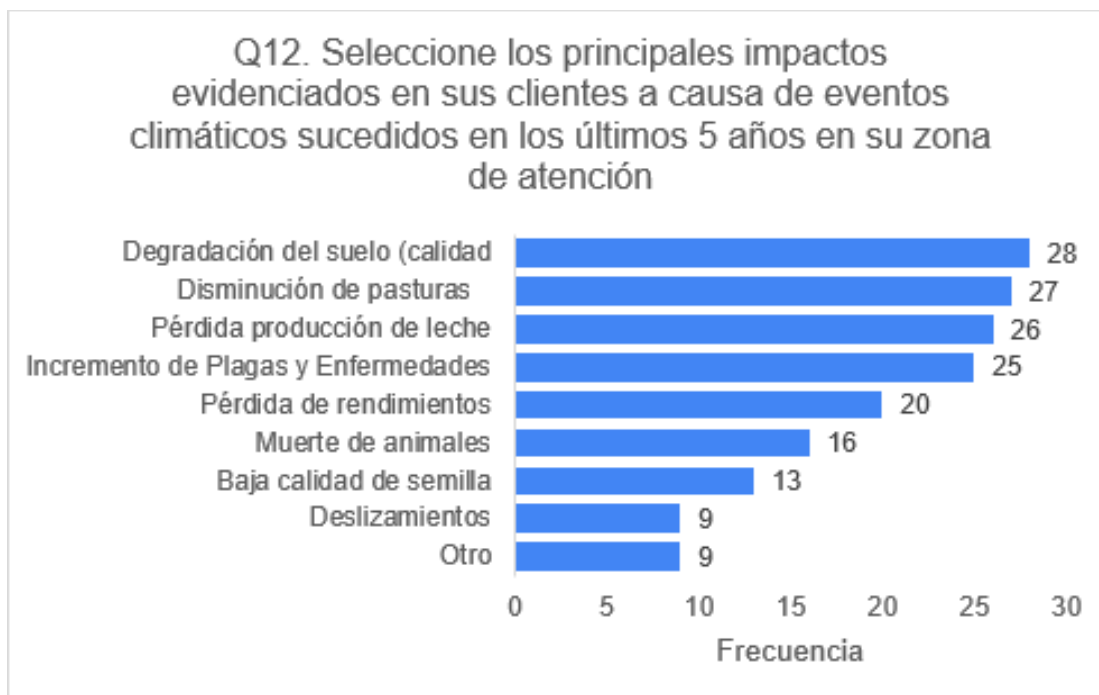
### 5.2.2. Information on weather events and their impact

The extension agents were asked to rate the level of frequency and intensity of climatic events, finding that the most frequent events were intense rains, the erratic behavior of the rain, prolonged drought, mid-summer drought, heatwave, strong winds, extended rainy season, and sudden changes. Of temperature. Regarding those of greater intensity, they mention Intense rains, Shortened rainy season, Prolonged drought, summer, heat waves, Erratic behavior of the rain, Strong Winds, Extended rainy season, and extremely high temperatures.





According to the extension agents, the most frequent impacts in their order have been: Soil degradation, Decreased pastures, Loss of Milk Production, and an Increase in Pests and Diseases.



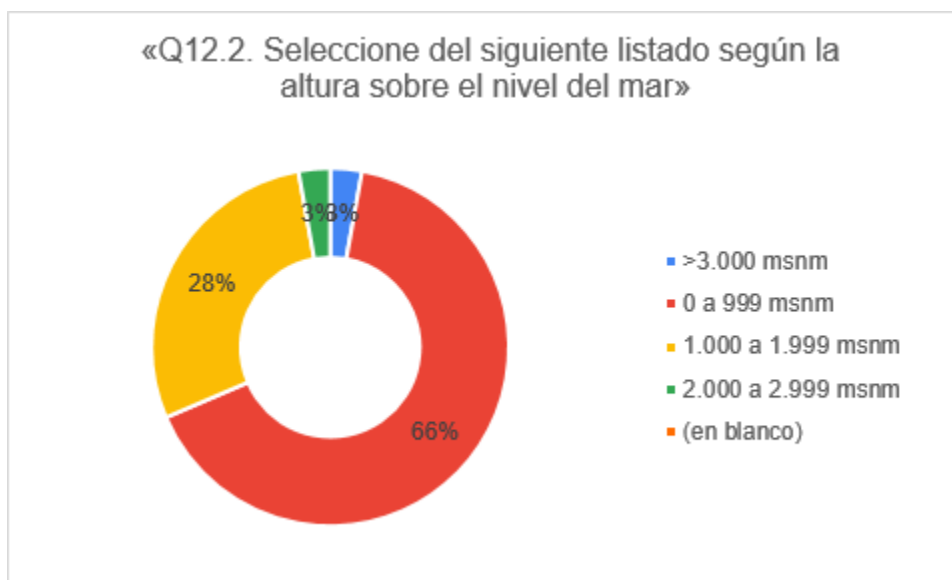
Additionally, they mention events such as the death of animals due to electrical storms, animal trafficking from one country to another, material damage due to wind, and floods, lack of water and

food in summer, and a decrease in sale prices. They emphasize the importance of conserving water, since if it does not rain in the required time, the availability of food decreases.



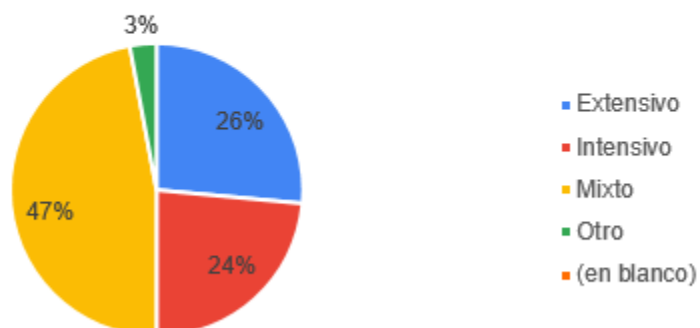
The most impacted livestock activities according to extension agents are Milk Production, Dual Purpose Production, and meat production.

Producers located at heights from 0 to 999 meters above sea level, for 66% of the surveyed extensionists are the most affected, followed by those located between 1 km and 1.9 km above sea level.



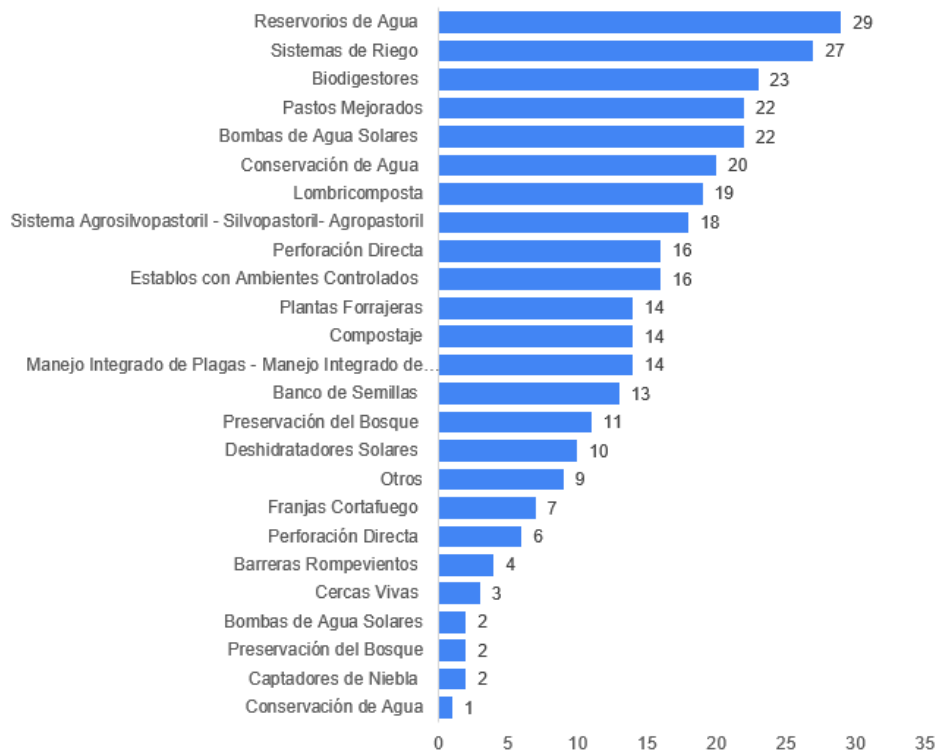
47% of the extensionists consider that the mixed system is more impacted by climatic events, followed by the extensive and the intensive. decreases the amount of food, and crop yields. They justify their response by mentioning that variables such as food availability, and dependency on purchased pastures, are affected by price variations due to supply and demand.

«Q12.4. Seleccione del siguiente listado según sistema productivo, cuál se ve más impactado como consecuencia de los eventos identificados en los productores ganaderos en los últimos 5 años»



Water reservoirs, risk systems, biodigesters, improved pastures, and solar water pumps are the climatic practices that extension agents most frequently consider necessary to use financing mechanisms to implement them.

Q13.1. ¿De las siguientes Prácticas Climáticas de adaptación y/o mitigación seleccionadas, para cuales considera necesario usar mecanismos de financiamiento?



Other climatic practices mentioned by the extensionists are the preparation of concentrates, artificial insemination, fodder management, genetic improvement for cattle, soil conservation structures, collection centers or slaughterhouses, silage, and rainwater harvesting, among others. And when inquiring about the Climate Adaptation and/or Mitigation Practices to which credit has been granted, water reservoirs were mentioned only once.

## Conclusions

- The call for producers to carry out surveys must include a benefit for them, taking into account the time they spend solving the survey, for example, delivery of information relevant to them, and information on products and services, this facilitates the reception.
- The support of commercial houses, organizations, or institutions present in each region increases the participation in the study by the producers, due to the trust and recognition that these institutions can provide.
- The main climatic threats that affect livestock producers in the Izabal region are sudden changes in temperature, heavy rains, changes in the rainy season, overflowing of rivers and floods, causing loss of yields to livestock farmers, and a decrease in pastures. and soil degradation.
- One of the most relevant and important aspects considered and highlighted by the majority of livestock producers is the lack of constant training to be updated and trained in the implementation of the different mitigation and adaptation practices to climate change to managing their standard and optimal farm and this can be self-sustaining.
- The topics of most interest to ranchers are Pastures, forages and new technologies, Silvopastoral systems-agrosilvopastoral systems, Rainwater harvesting systems in dry regions, Soil conservation practices, Forest conservation practices, Conservation practices of water, Silage practices, Species that adapt to dry regions and regions with excess water, Seeds and improved pastures, with necessary soil requirements, Edges, and drainage.
- The perception is that there is no support from the government institutions in charge of the agricultural and livestock sector; They do not provide technical assistance and training.
- The perception of government corruption generated comments such as that they preferred that the offer of insurance and credit comes from a private entity since they do not feel safe acquiring a service from a public entity.
- Livestock producers present problems with the pre-classification of credits due to bank requirements.
- Within the comments in the conversations with those surveyed, phrases such as: "Most people are aware of the credits provided by banks, but they are acquired for other purposes, or they request a loan for home construction, but they invest it. in cattle maintenance, since it is the only way to be able to obtain credits."
- The following recommendations for climate resilience were received: develop and use more production of organic fertilizers and herbicides, recover ancestral agricultural and livestock production practices, and improve the market for the sale and production of livestock and their derivatives.

## Recommendations

According to the results of the study and to promote an enabling environment for financial services of resilience in livestock in the Peten, Izabal, Jalapa, Jutiapa, and Santa Rosa departments of Guatemala, we allow ourselves to make the following recommendations:

- Develop specific taxonomies for the livestock sector.

The green or environmental taxonomy is a classification system whose objective is to clarify and classify which investments and economic activities are sustainable, aiming at objectives of mitigation and adaptation to climate change, sustainable use and protection of natural resources, and protection and restoration of biodiversity and ecosystems.

The taxonomy supports the different actors of the public and private sectors in the identification and evaluation of investments that can contribute to the fulfillment of environmental objectives. Additionally, it is a tool that allows qualifying the adequate implementation of technologies and practices for adaptation and mitigation within the financed agricultural projects, as well as facilitating the tracking of investments in climate change.

- Strengthen the capacities of financial institutions to enable financial products and services with a resilient approach.

Although the study shows a good offer of financial products, these are not known by livestock producers, it is recommended to improve the climate risk management capacity in the credit risk assessment processes in the financing of projects in the livestock sector, so that Institutions can understand the climate risks to which they are exposing themselves, and generate business continuity plans, as well as improve their internal processes and design specific financial products that promote resilience in this sector, improving accessibility and credit conditions ( terms, interest rate, guarantees, and technical assistance).

This includes that the field personnel of the financial institutions can access information that facilitates their analysis, including agricultural, livestock, and climate issues for the placement and advice of credits.

- Implement and continuously monitor demonstration plots with climate change mitigation and adaptation practices, so that livestock producers can replicate them in their territories.

- Implement instruments to obtain updated climate information, so that the information can be disseminated by applications or some system, to generate early warnings of climate threats and thus take mitigation measures to reduce environmental and economic losses.
- Study the funding lines available and promote funds for financing resilience. The creation of a fund for mitigation or adaptation to climate change contributes to the reduction of the financial cost conditioning the verification of the effectiveness of technologies and practices for resilience.

# Annexes

**Annex 1. Semi-structured Interview General Entities**

**Annex 2. Semi-structured Interview Financial and Insurance Companies**

**Annex 3. Producer Survey**

**Annex 4. Field Staff Survey**



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