

## CASE STUDY:

Activities by the Guatemala Sugar Agroindustry supporting the implementation of the Sustainable Development Goal 11 (SDG 11) of the United Nations 2030 Agenda for Sustainable Development.











# **MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE**



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Make cities and human settlements inclusive, safe, resilient and sustainable / Asazgua

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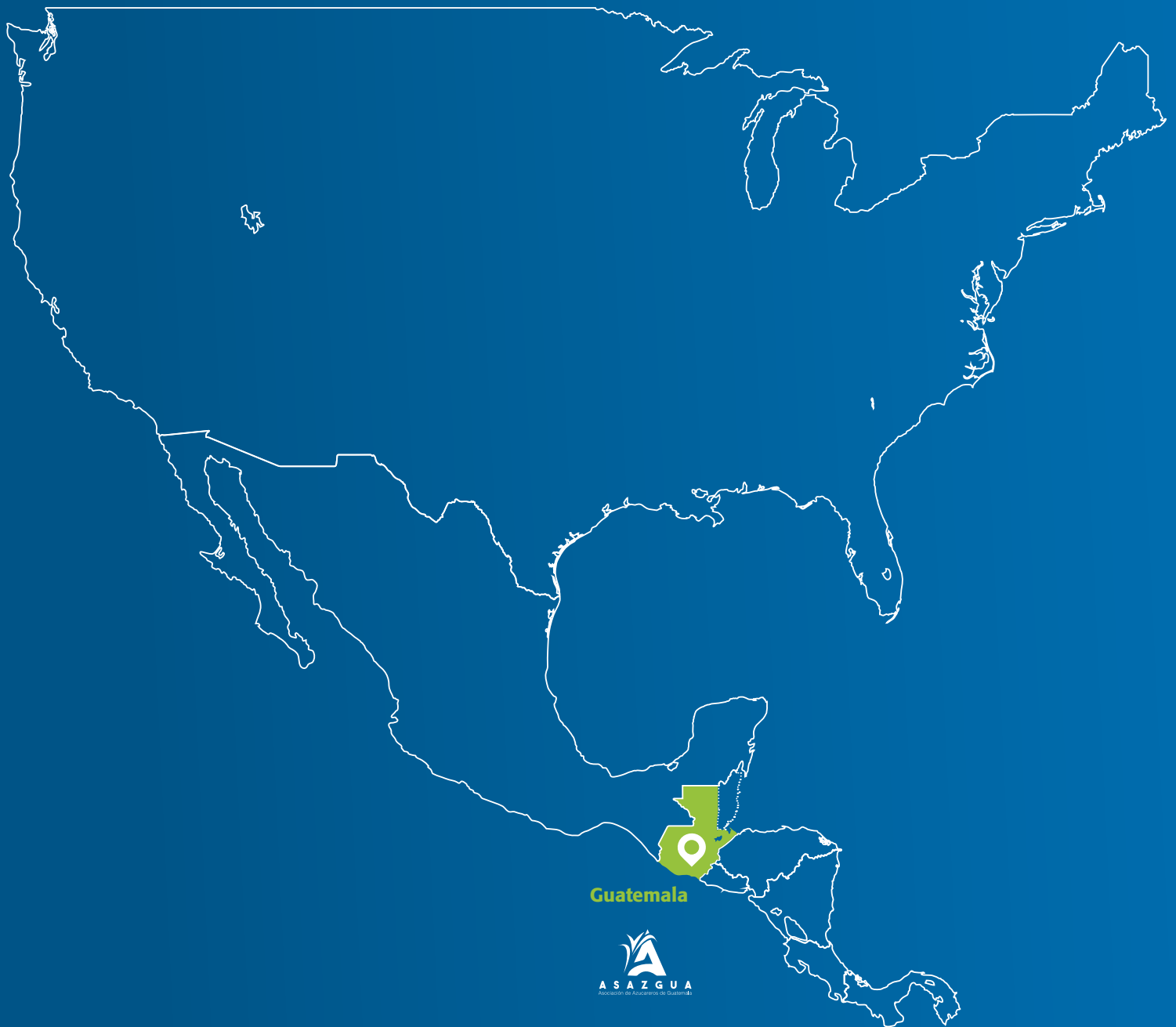
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# MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE



**Target 11.1** By 2030, ensure access for all to adequate, safe and affordable housing and basic services, and upgrade slums.

**Target 11.2:** By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.

**Target 11.3:** By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.

**Target 11.4:** Strengthen efforts to protect and safeguard the world's cultural and natural heritage.

**Target 11.5:** By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations.

**Target 11.6:** By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.

**Target 11.7:** By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities.

**Target 11.a:** Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning.

**Target 11.b:** By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.

**Target 11.c:** Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials.

**Source:** United Nations, 2015





**The volcanic soils of southern Guatemala are exceptional for the growth of sugarcane**

# THE GUATEMALA SUGAR AGROINDUSTRY

As of 2021, Guatemala was the third largest producer in Latin America and the sixth largest exporter of sugar in the world. Sugar is the second agroindustrial product most exported of Guatemala. The Guatemala Sugar Agroindustry generates almost US \$700 million in foreign exchange annually and provides more than 55,000 direct jobs and 278,000 indirect jobs in the country. Besides, the sector receives products and services from more than 6,000 small, medium-sized and large enterprises, which also generate more employment. Only 2.97% of the cultivable land in Guatemala is used for sugarcane production. Asazgua, the Association of Sugar Producers of Guatemala, was created in 1957 to coordinate the activities of the Guatemala Sugar Agroindustry. It includes 11 sugar producers and five technical organizations specialized in research, climate change, sugar exportation and social responsibility (Asazgua, 2020). In addition, since 2022, it counts with an organization specialized in innovation. The sugar producers that are members of Asazgua include: Pantaleón, Concepción, Palo Gordo, Santa Ana, Magdalena, Santa Teresa, La Unión, Madre Tierra, Trinidad (San Diego), La Sonrisa and El Pilar.

The Guatemala Sugar Agroindustry is committed to generating opportunities and prosperity for the people of Guatemala that support the country's sustainable development. It promotes decent and valuable jobs for the wellbeing of the population, while at the same time promoting environmental protection and conservation.

The Guatemala Sugar Agroindustry follows sustainable development principles as reflected by its strategic objectives and integrated actions and programs, supporting social wellbeing, economic growth, industrialization, and environmental protection. The activities of the sugar industry

in Guatemala are recognized as examples of "Good Practices" in the effective implementation of the United Nations 2030 Agenda for Sustainable Development and the Sustainable Development Goals.

Associated organizations supporting specific sustainable objectives of the Guatemala Sugar Agroindustry have been created in the last decades. In 1990 Fundazúcar was launched as the social branch for the development and implementation of programs and projects on health, education and development. In 1992 Cengicaña started research activities to develop new varieties of sugarcane, to have integrated pest management, to study land quality and to implement more efficient processes for the cultivation of sugarcane and for the production of sugar. In 1994 Expogranel, one of the most efficient boarding terminals for sugar export in the world, was launched to cover international markets in a more efficient and competitive manner. In 2010, the Private Institute for Climate Change Research (ICC) was created to perform research, activities and projects related to climate change. In 2022 the Innovation Hub was created to develop a program of innovative projects through the identification and optimization of products, activities, processes and business models of the Sugar Agroindustry.

At the international level, the Guatemala Sugar Agroindustry supports the work of ICC on climate change mitigation and adaptation with other countries of Central America. Also through Asazgua, it participates actively in the Global Network on Sustainable Water and Energy Solutions. This is an initiative led by the Division for Sustainable Development Goals of the United Nations Department of Economic and Social Affairs (UNDESA). The Network promotes integrated water and energy solutions that address climate change objectives worldwide.

# SUSTAINABLE DEVELOPMENT STRATEGY

The Sustainable Development Strategy of the Guatemala Sugar Agroindustry is based on its vision, mission and objectives which promote a comprehensive and forward-looking transformative pathway to prosperity and well-being for the people of Guatemala, at the same time supporting a healthy and sustainable planet. It follows an integrated approach based on transformation and adaptation to changes expected in the future due to new challenges. With its inclusive participation policy with multi-stakeholder

partnerships, the Sugar Agroindustry, through ASAZGUA, coordinates the work of enterprises of the guild, governmental entities and civil society to achieve the final goal of prosperity and sustainable development for Guatemala. The Guatemala Sugar Agroindustry is a global example of efficiency and technological advance representing a very relevant factor for the economy of Guatemala with important positive impacts also on the social and environmental dimensions of sustainable development.

## Objectives

1. Increase productivity through development and improvements in the field and in factories.
2. Provide technical training and capacity building for human resources.
3. Develop projects and programs that increase the capacity of the production systems in the field and in sugar factories, in distribution and commercialization of products, and of the export boarding systems.

One of the objectives of the Guatemala Sugar Agroindustry is to Increase productivity through development and improvements in the field and in sugar refineries.



## Vision

Before 2025 the Guatemala Sugar Agroindustry will be the most respected productive sector of the country due to diversification, competitive efficiency, generation of dignified jobs, and respect for the environment, suppliers and communities with whom it relates.

Given its policy of unified action, proactive attitude and strong socioeconomic support, the Sugar Agroindustry leads as a positive agent of change for integral development, boosting the progress of its members and the country.

## Mission

The Guatemala Sugar Agroindustry mission includes the following: to act in united manner to cultivate and process sugarcane to produce sugar, electricity, ethanol and other products; to undertake other activities to increase the value of the associated enterprises with a positive impact on the integrated development of the country; to innovate constantly improving competitive efficiency; to facilitate national and international commercialization of sugar; and to ensure sustainability while building trust responsibly.





# THE GUATEMALA SUGAR AGROINDUSTRY AND THE SDG 11

The Guatemala Sugar Agroindustry has initiatives in place with the aim of making cities and human settlements safe, resilient and sustainable. These are some of the major objectives of SDG 11. Most Activities supporting these objectives are coordinated through the Foundation of Sugar of Guatemala (Fundazúcar). Other activities related to the adaptation of human settlements to climate change impacts and vulnerability reduction are conducted by the Private Institute for Climate Change Research (ICC).

Asazgua created Fundazúcar in 1990 as the social branch of the Guatemala Sugar Agroindustry for the development and implementation of programs and projects on health, education, development and the wellbeing of the population. The Foundation implements programs at the community level with a focus on women, youth, teachers, health workers, community leaders and municipal leaders who are all key actors for responsibly citizenship. A considerable number of people in municipalities of interest of the Sugar Agroindustry live in vulnerable communities exposed to poverty in most of its forms. The Social Strategy of the Sugar Agroindustry emphasizes building human capital with an integrated focus that empowers people to implement changes towards the improvement of their quality of life and wellbeing.

The most important activities of the sustainable development strategy of the Sugar Agroindustry supporting the objectives of SDG 11 include the Participatory Municipal Development program, the Better Communities Program for Local Development and the Climate Change Adaptation and Disaster Risk management Program. As a result of the combination of these initiatives, the Sugar Agroindustry is able to support efforts to promote sustainable cities and human settlements in Guatemala particularly in the region of operation of the Sugar Agroindustry.



# 1. PARTICIPATORY MUNICIPAL DEVELOPMENT PROGRAM





## 1.1 Participatory Municipal Development Program

### Objective and Description

This program, which began in 1997, facilitates planning processes for municipal integral development in a prioritized manner, promoting community organization, citizen, and institutional participation. Fundazúcar provides technical and administrative advice for the planning processes for the integral development of communities and municipalities.

This assistance is provided according to the Law of Urban and Rural Development Councils. This law established that one of the functions of the Community Development Councils is: “to formulate policies, plans, programs and development projects, based on the needs, problems and solutions of the communities, as prioritized by them, and make corresponding

suggestions to the Municipal Development Council so that these can be incorporated into the Municipality’s policies, plans, programs and development projects.”

This program promotes planning processes for integral community and municipal development, to achieve the development of each of the municipalities that participates in the program. It strategically promotes civic participation and self-management, allowing to meet the basic needs of the populations of each of the Municipalities, with the endorsement of the corresponding Municipal Authority. Knowledge, dissemination and application of existing laws are essential particularly with respect to those related to local planning processes.







**Fundazúcar provides technical and administrative advice for the planning processes for the integral development of communities and municipalities.**



## Related Targets

The Participatory Municipal Development Program supports the objectives of Target 11.3 on enhancing inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management. The activities are also related to the objectives of Target 11.a on supporting positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional developing planning, and of Target 11.b on substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans.

## Challenges

A major challenge is changing the strategy for assistance towards responsible citizen participation with planning that prioritizes the development of capacities to generate favorable conditions for the development of municipalities that are attractive for investment. It is important to promote responsible and organized participation to ensure inclusion, empowerment and ownership which are factors that support sustainable human development.

## Lessons Learned

An important lesson learned from this initiative is that planning assistance is a key activity for the successful definition and implementation of municipal development programs. The combined effort of the public and private sectors is critical to achieve success through time and should be responsive to the continuous changes in the social and economic conditions of the communities and municipalities.

## Results

The Sugar Agroindustry has been successful in the last decades supporting the planning processes for municipal integral development in a prioritized manner, promoting community organization, citizen, and institutional participation particularly in communities located in its area of operation in Guatemala. Many communities have benefitted from this support which fosters inclusive societies and sustainable and resilient human settlements. The program has supported the development of 42 municipalities with effective training and planning processes. More than 600 persons have been trained in productive areas that strengthen economic development.

## **2. BETTER COMMUNITIES FOR LOCAL DEVELOPMENT PROGRAM**





## 2.1 Better Communities for Local Development Program

### Objective and Description

The Better Communities for Local Development Program began in 1997. The objective of the program is to foster citizen participation, leadership and decision-making by community groups within the framework of the national institutional structure, through the formulation and execution of “Comprehensive Community Development Plans” (PDIC). These plans are administered and managed by the habitants of the community led by the Coordination Organs of the Development Community Councils which seek development of their communities with short, medium and long-term vision.

The Program is implemented by the different community actors who have been trained and informed to better benefit from state offers. The community actors include women, community leaders, youth, health workers and municipal employees. The behavioral change training for these actors is focused on the common objective of the PDIC.

The Program promotes responsible citizenship through active participation of people in the building of social support, strengthening of institutions

and the harnessing of public services. These are indispensable elements for sustainable human development and for the building of attractive municipalities for investment and job generation.

The Program was designed to bring consultancy to the community members from the identification of their main needs to the development of a plan that allows the improvement of life-quality in their communities. The program is implemented in 143 communities. Annual operative plans (POA) are developed to follow the progress in the implementation of the PDIC and ensuring execution of priority projects.

In the Community Development Plans, projects are defined and prioritized by local representatives who are also involved in defining the timeframe to carry them out. Fundazúcar trains and provides technical assistance to community members so that they can manage and execute these projects. Community representatives are educated on relevant laws, processes and other legal requirements.







**In the Community Development Plans, projects are defined and prioritized by local representatives who are also involved in defining the timeframe to carry them out.**

## Related Targets

The Better Communities for local Development Program supports the objectives of Target 11.3 on enhancing inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management.

## Challenges

A major challenge is ensuring the full participation of community representatives in all the steps of the process. Also, it is essential to ensure long-term attention, support and monitoring of this program given the importance of incorporating local knowledge in the decision-making process.

An important challenge is to create synergies between the community representatives (agents of change) and the state organizations that provide services to ensure a focus on mental and physical health of the communities. The objective is to transform the culture of reliance on public assistance to a culture of self-management and promotion of community participation through responsible citizenship that starts at home with maternity and paternal responsibility.

An additional challenge related to health is the need to modify the conduct of the population towards preventive health instead of curative health. By

doing this, most medical services take place at the first level of attention of the Ministry of Health avoiding the saturation of the higher levels.

## Lessons Learned

By focusing on the training of women as the agents of change a generational transformation can be achieved with a change of behavior that translates into improvements on the quality of their lives, their families and their communities. Empowering women has allowed an increase in the participation of women in key positions of the coordination organs of the Development Community Councils.

Broadening and strengthening the planning process through the promotion of participation, leadership and decision-making by community groups is indeed necessary to ensure peaceful and inclusive societies that foster sustainable development of human settlements.

Responsible citizen participation is not the fastest and easiest path, but it is the path to sustainability and community commitment to achieve development. Breaking with the top-down development paradigm, development and public policies can be effective when implemented at the local level.

Results

The Sugar Agroindustry has been successful in the last decades supporting the formulation and implementation of Comprehensive Community Development Plans particularly in communities and human settlements located in its area of operation in Guatemala. Many communities have benefitted from this support which fosters peaceful and inclusive societies. A total of 421 Comprehensive Community Development Plans have been implemented with active participation of people from the communities especially those from the south coast region and the highlands.

The Guatemala Sugar Agroindustry plays an important role supporting general efforts to ensure a healthy life and to promote the wellbeing of all the people and of all ages. Through the Comprehensive Community Development Plans about \$27.5 million of public funds have been mobilized for the benefit of more than 534,200 persons prioritizing water and sanitation to ensure better health conditions.

The Guatemala Sugar Agroindustry plays an important role supporting general efforts to ensure a healthy life and to promote the wellbeing of all the people and of all ages.

UNISAN STUDIES 2001-22

This unit, created in 2001, promotes the execution of water and sanitation infrastructure projects at the municipal level, providing professional technical assistance.

+US\$ 40 million in funds mobilized  
Population coverage 541,039



290  
projects  
designed



12  
on execution

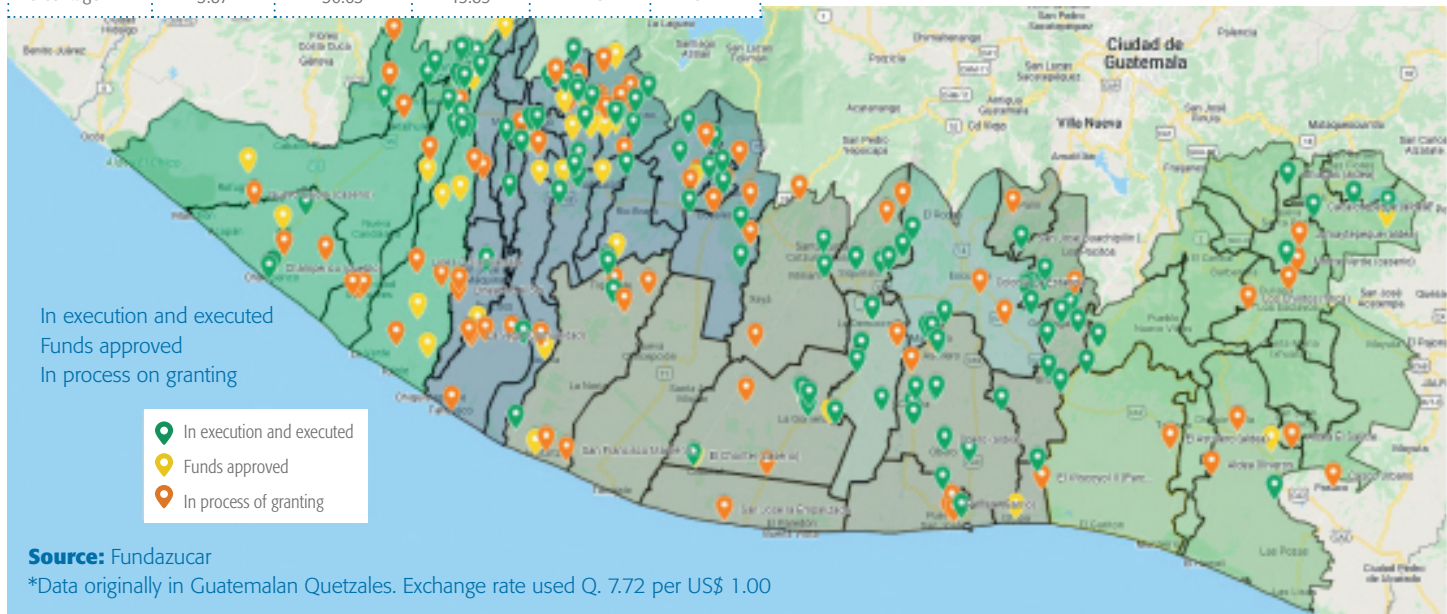


129  
executed



45  
with funds  
approved

Funds mobilized				Status						
Depart-ment	Without Muni-ci-pal fol-low up	In process of granting	Funds ap-proved	In execution	Execut-ed	To-tal	Fundazu-car's contribution	Cost of investment	Beneficiaries	Mobilized funds
Santa Rosa	0	9	3	1	5	18	\$564,446.98	\$7,055,587.22	31,421	\$3,007,791.33
Escuintla	5	35	8	3	62	108	\$2,267,494.09	\$28,343,676.29	291,589	\$15,294,319.58
Suchitepéquez	5	39	18	2	41	105	\$1,667,506.10	\$20,843,832.70	133,855	\$13,701,764.90
Retalhuleu	1	14	16	6	21	58	\$1,009,748.81	\$13,746,860.12	81,834	\$8,175,717.70
Jutiapa	0	1	0	0	0	1	\$86,136.99	\$1,076,712.37	2,340	\$0.00
Total	11	98	45	12	129	290	\$5,595,332.97	\$71,066,668.70	541,039	\$40,179,593.50
Percentage	3.87	30.63	15.85	4.23	45.42					



Source: Fundazucar  
\*Data originally in Guatemalan Quetzales. Exchange rate used Q. 7.72 per US\$ 1.00



# **3. CLIMATE CHANGE ADAPTATION AND DISASTER RISK MANAGEMENT PROGRAM**





### 3.1 Climate Change Adaptation and Disaster Risk Management Program

#### Objectives and Description

Guatemala is placed among the ten most environmentally vulnerable countries of the planet. This vulnerability is to a great extent due to its geographic location (between the Pacific and Atlantic Oceans). The topography of the country has played an important role for the Pacific plains, since it has created an important area for agricultural development. The geophysical characteristics together with the socio-economic conditions determine high levels of vulnerability (SGCCC, 2019). A major objective of the climate change policy of the Guatemala Sugar Agroindustry is the implementation of the best and most efficient practices of adaptation that allow the protection of natural, cultural and built assets and services of human settlements located in the area of influence of this agroindustry. These practices are being implemented mainly by the ICC.

#### Some of the more important climate change adaptation activities include:

- Risk management of flooding and early warning including: flood emergency plans for Escuintla and other departments; early warning system for floods; mitigation works; flood zones in the south coast and community risk; and emergency attention for natural events
- Support to communities and municipalities in the management of water and health including potable water systems (design and construction) through Fundazúcar
- Efficiency, reuse and recycling of water including advances in efficiency and reuse of factory water, and advances in wastewater management







**The ICC has contributed with the development of projects for the monitoring, evaluation and action in emergency situations that have resulted in financing from international corporations and the private sector.**

This Disaster Risk Management Program of ICC supports disaster risk reduction by promoting actions based upon the analysis of natural and social factors. It identifies the main climatic hazards of the area contributing to the understanding and monitoring of potential risks. In the social scope, the program performs diverse analysis of the vulnerability of towns and human settlements, their infrastructure and production systems allowing the identification of weak points and priority actions to reduce these risks.

Since 2011, ICC has been conducting research about the behavior of the flood hazards of the Pacific watersheds of Guatemala. The objective is to identify flood-prone areas and the impact on the lives of people in affected communities as well as infrastructure and production systems. These activities include: eight hydrological studies, nine studies of unidimensional and bidimensional hydraulic models, one study of precipitation intensity in five watersheds of the Pacific of Guatemala and 135 technicians trained from the public, private and academic sectors.

ICC has developed a comprehensive flooding map for the flooding zones of the Pacific basin of Guatemala. Also, local maps have been developed for flooding zones requested by local municipalities and communities that incorporate local and scientific knowledge. The areas that have been studied include: Sipacate, San Jose Port, Antigua Guatemala, Escuintla, and Santa Lucia Cotzumalguapa. (ICC, 2020).

With the purpose of mitigating the impact from floods in the south coast specifically in communities, productive systems and infrastructure, longitudinal dikes are being implemented in vulnerable points of the banks of the rivers Coyolate and Achiguate. Since 2012, ICC has contributed to the execution of projects from private, public and NGO organizations with the objective of diminishing the vulnerability of floods and supporting the development of communities and human settlements.

Due to the vulnerability of the Guatemalan territory to hydrometeorological phenomena, since 2011 ICC has



monitored and has warned its members accordingly so they can make appropriate decisions in emergency situations. The ICC has contributed with the development of projects for the monitoring, evaluation and action in emergency situations that have resulted in financing from international corporations and the private sector. These actions have contributed to the creation of the Center of Emergency Response as a public private partnership where ICC acts as the link between

the private and public sectors for the management of emergencies. The process was part of a project funded by the European Commission. Due to the high frequency of disaster events in southern Guatemala, the plans have been put into operation three times from 2017 to 2020. All the sugar companies, Asazgua, and Fundazúcar deploy staff and resources to help authorities and communities during the emergencies.



Appropriate decisions in emergency situations. The ICC has contributed with the development of projects for the monitoring, evaluation and action in emergency situations that have resulted in financing from international corporations and the private sector.





**The work of ICC with support from the Guatemala Sugar Agroindustry and its members has been key to the advances on emergency preparedness and contingency plans addressing potential disaster risks.**

## Related Targets

Climate change adaptation and disaster risk management activities in communities and human settlements contribute to the objectives of Target 11.5 on reducing the number of people affected and decreasing economic losses caused by disasters including water-related disasters with the focus of protecting the poor and people in vulnerable situations.

## Challenges

Obtaining funding for the implementation of projects in disaster risk management and climate change adaptation represents an important challenge, especially considering the need to scale up. Throughout history, risk has been created by establishing human settlements in hazard-prone areas, especially flooding and landslides. Relocating would be the most effective way to save lives and houses but it is an extremely complex process. Therefore, any measures taken can only mitigate risk but cannot be totally effective.

## Lessons Learned

The participation of all stakeholders is essential to the successful implementation of projects in the realm of disaster risk management. Research is essential to understand risks

and it is the starting point for the analysis of mitigation options and planning. For information to be relevant not only does it need to be readily available, but scientists need to be close to the stakeholders explaining it and informing decisions. In countries like Guatemala, an important component of climate adaptation and vulnerability reduction is disaster risk management. It is rather urgent because disasters have been part of life in the region and they seem to be increasing due to climate change (SGCCC, 2019).

## Results

Much has been achieved in the last decade in relation to assessing disaster risks and in implementing adaptation programs to climate change impacts in human settlements and communities. The work of ICC with support from the Guatemala Sugar Agroindustry and its members has been key to the advances on emergency preparedness and contingency plans addressing potential disaster risks. The work supported by the Guatemala Sugar Agroindustry has enhanced the resilience of many communities and human settlements with respect to climate change impacts, particularly in the south.



## INTERLINKAGES WITH OTHER SDGs

The activities of the Guatemala Sugar Agroindustry related to the objectives of SDG 11, on making cities and human settlements safe, resilient and sustainable, are greatly interlinked to activities related to SDG 16 (peaceful and inclusive societies) and SDG 8 (economic growth). Many of the activities and efforts by Fundazúcar and ICC ultimately promote sustainable human settlements with responsive, inclusive, participatory and representative decision-making at the community level. Other strong

interlinkages are with respect to poverty eradication (SDG 1), climate change (SDG 13) and partnerships (SDG17), given the important commitment of the Sugar Agroindustry for supporting effective policies and actions that promote prosperity and the well-being of the population in the region and based on the integrated approach with respect to partnerships in which all stakeholders are encouraged to be part of the relevant actions.

**The work supported by the Guatemala Sugar Agroindustry has enhanced the resilience of many communities and human settlements with respect to climate change impacts, particularly in the south.**



# CONCLUSIONS



The Guatemala Sugar Agroindustry has a number of important activities promoting safe, resilient and sustainable communities and human settlements in Guatemala. Its Participatory Municipal Development program and the Better Communities for Local Development Program represent actions that support responsive, inclusive, participatory and representative decision-making at the community and municipality levels. The activities related to climate change adaptation and disaster risk management have been able to support many communities and human settlements during natural disasters by developing and implementing emergency preparedness and contingency plans.

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