

CASE STUDY:

Activities by the Guatemala Sugar Agroindustry supporting the implementation of the Sustainable Development Goal 3 (SDG 3) of the United Nations 2030 Agenda for Sustainable Development.





FUNDAZION
GUATEMALA



**ENSURE HEALTHY LIVES AND
PROMOTE WELL-BEING FOR
ALL AT ALL AGES**





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Ensure healthy lives and promote well-being for all at all ages / Asazgua

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ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AT ALL AGES



Target 3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births.

Target 3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births.

Target 3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases.

Target 3.4 By 2030, enhance international cooperation to facilitate access to clean energy research and technologies, including renewable energy, energy efficiency, and advanced and cleaner fossil fuel technologies, and promote investment in energy infrastructure and clean energy technologies

Target 3.5 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.

Target 3.6: By 2020, halve the number of global deaths and injuries from road traffic accidents.

Target 3.7: By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes.

Target 3.8: Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all.

Target 3.9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.

Target: 3.a: Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate.

Target: 3.b: Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all.

Target: 3.c: Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States.

Target: 3.d: Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks.

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: Pantaleon, 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 3

The Guatemala Sugar Agroindustry has multiple initiatives in place with the aim of ensuring healthy lives and promoting the well-being of the population of Guatemala which are the main objectives of SDG 3. Activities supporting healthy lives by the Sugar Agroindustry are coordinated through the Foundation of Sugar of Guatemala (Fundazúcar).

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 Guatemala 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 health objectives of SDG 3 include: Better Families (Mejores Familias) Program, My Health First Program, the Better Communities for Local Development Program, the Fundazúcar Medical Clinic, Combating the COVID-19 pandemic, Fortification of Sugar with Micronutrients and Water Supply and Wastewater. As a result of the combination of the entirety of these initiatives, the Sugar Agroindustry is able to continuously support improvements in the health of people in Guatemala particularly in the region of influence of the Sugar Agroindustry.

1. BETTER FAMILIES (MEJORES FAMILIAS) PROGRAM



1.1 Better Families (Mejores Familias) Program

Objective and Description

The Better Families Program is an innovative model that promotes food and nutrition security, self-confidence, self-management and leadership in women, as agents of change for the development and well-being of their families and their communities. It is aimed at women of childbearing age and children under the age of 5.

The objective is to train women in practices for the adequate selection, preparation and consumption of food, as well as educating mothers in preventive health with sustainable actions that improve mother-child, family and community conditions and support poverty eradication objectives. It also seeks to strengthen community organization to ensure effective processes of self-management and to make food and nutritional security sustainable.

The program places women as the catalyst for development of their families and communities. It also fosters behavioral change and women empowerment. The food and nutrition security part of the program is based on four pillars: (1) availability, (2) access, (3) consumption and (4) biological use of food.

The program has a monitoring and evaluation system with measurable and quantifiable indicators that allow evaluating the behavioral change in a gradual manner. Due to its positive results, the program has been used by relevant

government entities in Guatemala and Honduras. It has also been implemented by 18 social investors which include companies, foundations and international organizations. Social Investors are individuals or companies that wish to replicate the Fundazúcar programs with their own resources in their geographical areas of interest. They are called “Investors” because they provide a social investment with a commitment to the development of human capital.

Better Families / SPOON BID Program

Fundazúcar was selected by the Interamerican Development Bank (IDB) for the implementation of the regional behavioral change strategy program called Better Families / SPOON BID Program. The objective of this program was to develop capacities of women of childbearing age on behavioral changes for the improvement of infant nutritional practices. The strategy is based on social communication and interpersonal advice focusing on the first 24 months of the lives of children. The program included the distribution of nutritional supplements for children between 6 and 24 months old. The program started in 2019 in partnership with the Ministry of Public Health covering 80 communities in 8 municipalities in the department of Baja Verapaz. The program incorporated monitoring activities of the nutritional state of children. It also included capacity building activities for women on site and through household visits and counseling to participating families.



Due to its positive results, the program has been used by relevant government entities in Guatemala and Honduras.

The Better Families Program is an innovative model that promotes food and nutrition security, self-confidence, self-management and leadership in women, as agents of change for the development and well-being of their families and their communities.



The decades of experience have proved that women who have participated in this program are no longer passive receptors but have become active agents of change achieving major positive transformations of themselves, their families and their communities.



Related Targets

This initiative supports the objectives of Target 3.1 on reducing maternal mortality, Target 3.2 on ending preventable deaths of newborns and children under 5 years of age, and Target 3.d on strengthening capacities for the reduction of and management of national health risks.

Challenges

One major challenge of this initiative is related to the need to convince participants about the benefits that can be derived from a change of behavior in nutritional, health and leadership practices. Also, participation of women in this program has been limited since women are sometimes not allowed to take part in meetings by themselves given gender restrictions due to cultural reasons.

Another main challenge is to ensure that the Law of Food and Nutritional Security of 2005 is implemented as the mechanism that allows the elimination of malnutrition in Guatemala. This law defines the responsibilities of the different institutions that promote the food and nutritional security.

Lessons Learned

A major lesson learned is that positive changes can be achieved for the benefit of women and families when women are empowered with knowledge and skills in nutrition, health, education and leadership prioritizing their freedom, autonomy and self-management. The decades of experience have proved that women who have participated in this program are no longer passive receptors but have become active agents of change achieving major positive transformations of themselves, their families and their communities.

Results

Since 1998, the Guatemala Sugar Agroindustry has supported the implementation of the Better Families Program with measurable and verifiable results that confirm its contribution to the welfare and sustainable development of the population. Since its inception, the program has trained more than 532,000 women in Guatemala and Honduras. The program supports efforts for the reduction of poverty and is making a direct impact in the reduction of chronic child malnutrition by up to 7%.

2. MY HEALTH FIRST (MI SALUD PRIMERO) PROGRAM



Since 2016 Fundazúcar in partnership with the Ministry of Health implements the innovative program "My Health First".

2.1 My Health First (Mi Salud Primero) Program

Objective and description

Since 2016, Fundazúcar, in partnership with the Ministry of Health, implements the innovative program “My Health First”. The program is directed to health professionals of the first level of attention of the Ministry of Health in 27 municipalities of the south coast region. The program objective is the development of technical competencies and the improvement of the service attitude for preventive health. This is an important health service that supports the eradication of poverty and improves the wellbeing of the population particularly in vulnerable communities.

The main objectives of the program include healthy children, family medicine and epidemiological registry to ensure that health posts provide an integrated service to good health and to sickness prevention. Around 500 people have been trained and are providing health services in 65 health posts located in the departments of Escuintla, Suchitepéquez, Retalhuleu, Jutiapa and Santa Rosa.

Related Targets

The “My Health First Program” supports the objectives of Target 3.C on substantially increase health training for the health workforce in developing countries. The activity provides substantive support to the public health agency of Guatemala particularly in vulnerable communities.

Challenges

A major challenge is related to reaching health professionals in very isolated rural communities. Also, there is the need to continue expanding the coverage to more areas with vulnerable communities where effective health services are really needed.

Lessons learned

One of the main lessons learned is that the health workforce needs to receive continuous training to be able to adapt to the changing conditions of vulnerable communities and their health needs. Strengthening capacities is indispensable to learn new health procedures, programs and medications that promote sickness prevention and the wellbeing of the population.

Another lesson is that through this program trained health workers recognize and give more importance to the control and actualization of health statistics of the communities they serve in critical issues such as: vaccination control, infant malnutrition, local sicknesses, and pregnant women health data, among others. This allows better health service and more appropriate decisions.

Results

Positive results are observed in the populations of many communities with respect to their health and wellbeing as a consequence of the My Health First program. The 500 health workers who have been trained through this program are strengthening risk reduction and sickness prevention particularly in the poor and vulnerable communities. This is allowing healthier and more productive people available to compete for better job opportunities.



3. BETTER COMMUNITIES FOR LOCAL DEVELOPMENT PROGRAM



3.1 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 managed by their own community members, as they seek development of their communities with a 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.



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Related Targets

The Better Communities for Local Development Program supports the objectives of Target 3.1 on reducing maternal mortality, of Target 3.2 on ending preventable deaths of newborn and children under 5 years old, of Target 3.3 on ending the epidemics of AIDS, tuberculosis, malaria, etc., of Target 3.4 on reducing premature mortality from non-communicable diseases, and of Target 3.7 on ensuring access to sexual and reproductive health-care services.

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 people prioritizing water and sanitation to ensure better health conditions.



4. FUNDAZÚCAR MEDICAL CLINIC PROGRAM



The Fundazúcar Medical Clinic is providing quality services in communities in Guatemala allowing access to over 45,000 patients to essential health services every year.

4.1 Fundazúcar Medical Clinic Program

Objectives and Description

The Fundazúcar Medical Clinic is located in Escuintla and operates through an agreement with Ministry of Health of Guatemala. It provides medical attention to over 45,000 patients annually offering to the general public five medical specialties: general medicine, pediatrics, dermatology, ophthalmology and odontology. It also provides pharmacy, laboratories and optic services. Patients pay just a symbolic amount of 30 Quetzals (about \$3.9) considering the poverty situation of the target population.

Related Targets

This activity is particularly related to Target 3.8 on achieving universal health coverage and access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all. The initiative is allowing vulnerable communities in Guatemala to have access to essential health services and indispensable medicines.

Challenges

A major challenge is the need to create awareness about the value of preventive health and the need

to visit primary health care facilities on a regular basis. These measures prevent the saturation of hospitals and health consultations with sick patients.

Although the Fundazúcar Medical Clinic is able to provide medical attention to a large number of people, there is always the need to continue expanding these services especially in other vulnerable communities of the country.

Lessons Learned

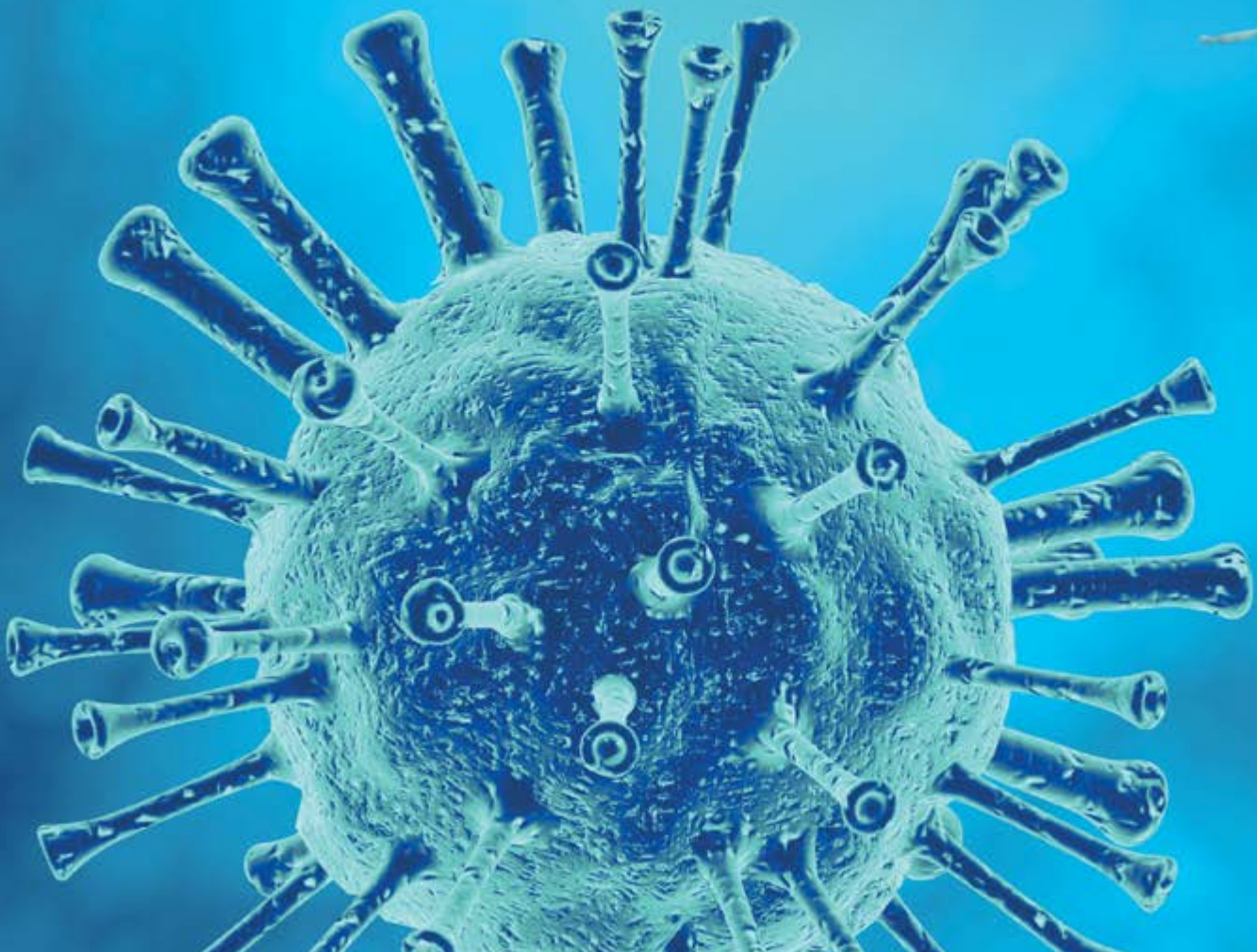
The large number of patients who are benefiting from the health services of the Fundazúcar Medical Clinic proves that health services can be provided efficiently with priority investment in covering as many people as possible especially in vulnerable regions of Guatemala.

Results

The Fundazúcar Medical Clinic is providing quality services in communities in Guatemala allowing access to over 45,000 patients to essential health services every year. The program represents a social protection mechanism covering poor and vulnerable people in Guatemala.



5. COMBATING THE COVID-19 PANDEMIC



5.1 Combating the COVID-19 pandemic

Objectives and Description

During 2020 the Guatemala Sugar Agroindustry made important donations to the government authorities related to the COVID-19 health emergency. The Sugar Agroindustry donated the land for the Santa Lucía Cotzumalguapa Hospital built to attend COVID-19 patients. Additionally, about \$1 million were donated for medical equipment for this hospital located in the south coast region. As of August 2021, over 7,300 kits of personal protection equipment (PPE) were donated to health workers in 65 health centers providing first and second level of attention and located in the departments of Escuintla, Santa Rosa, Jutiapa, Suchitepéquez and Retalhuleu.

Around 21,500 surgical masks were distributed in 26 municipalities and over 2,000 gallons of glycerinated alcohol were donated. These supplies were distributed in 44 markets and public plazas of the south coast region in order to provide protection to the citizens against the COVID-19 pandemic. Additionally, training was provided to street vendors in public plazas on COVID-19 social guidance followed by monitoring activities to verify the implementation of this guidance.

The Sugar Agroindustry also developed the first mechanical ventilator created in Guatemala for patients receiving the necessary medical attention related to the COVID-19 pandemic. This effort included the development of parts, software and electronic systems that allowed the functioning of this innovative ventilator.

The Sugar Agroindustry also donated 110,000 pounds of sugar which were included in the kit “We will move forward” (Saldremos Adelante) distributed by the government to thousands of vulnerable families.

The Sugar Agroindustry conducted communication campaigns to create awareness about the COVID-19 pandemic and the corresponding prevention measures. Two guides were published for the workers of the Sugar agroindustry entitled “Protocol for the prevention of the infection and transmission of COVID-19” and “Protocol for the return to work with health and occupational safety measures on COVID-19.” The internal communication campaign included efforts directed to the collaborators of the Agroindustry and their families about sensibilization and prevention of



COVID-19 at work and at home in five areas: solidarity and myths, telework, home prevention measures, responsibility with our partners and the new normal.

The external communication campaign included efforts for the prevention of COVID-19 in social media and in local communication media supporting the efforts of the government authorities. Eleven videos and nine radio spots were developed to facilitate knowledge dissemination and comprehension of the preventive measures. These videos and radio spots were broadcasted in 19 municipalities, communities and health centers of the south coast region.



Related Targets

The activities related to COVID-19 support the objectives of Target 3.3 related to combating and preventing communicable diseases including pandemics. The effort is also strongly related to objectives of Target 3.8 including access to essential health-care services and facilities and access to safe, effective, quality and affordable essential medicines and vaccines for all and to Target 3.d on strengthen the capacity of the country for early warning, risk reduction and management of national and global health risks.



Challenges

The COVID-19 health crisis represents a major challenge for people, government and institutions all over the world. One of the main challenges for the Guatemala Sugar Agroindustry was the need to design and implement urgent measures in response to a crisis continuously evolving since 2020 and through 2021 and 2022. The timely implementation of actions in the areas of infrastructure, medical technologies, personal protection equipment and communication was difficult but effective resulting in the reduction of COVID-19 cases in Guatemala.

Lessons Learned

An important lesson learned from this effort is the critical role that a private industry can play during an unexpected health crisis like the one originated by the COVID-19. The action should be well-coordinated between the private and public sectors with a united effort towards the common objective of preventing the spread of a virus such as COVID-19. An appropriate and timely communication strategy is key to knowledge dissemination and implementation of preventive measures. Another lesson is related to the importance of building capacities of street vendors in public plazas and markets, health workers, women and Development Community Councils on procedures for the prevention of the spread of COVID-19.

Results

The Sugar Agroindustry through Fundazúcar has trained leaders, health workers and street vendors in relevant themes such as: governance, COVID-19 Protocols, management and self-management of the Program of Integrated Community Development with emphasis on mitigation and prevention of COVID-19. Training has been provided to 1,080 community leaders, 499 health workers in 46 health centers, 143 coordination organs of Development Community Councils and 540 municipal public servants of markets and plazas. 302 daily sessions were coordinated and implemented on cleaning, disinfection, fumigation and abatement in coordination with education and health services, municipalities, and other organizations in the area. 44 markets and public plazas were monitored in the implementation of the prevention guide and protocol of COVID-19.

Many people have benefitted from the diverse efforts conducted by the Sugar Agroindustry in the fight against the COVID-19 pandemic. Efforts have focused on vulnerable communities and on receiving the essential health services at an affordable cost. The contribution related to providing medical equipment (including the new innovative ventilator) and to building and operating the new Santa Lucía Cotzumalguapa Hospital could go beyond delivering critical health services during the COVID-19 pandemic if the equipment and facility continue being used for other health purposes after this pandemic is over.



6. FORTIFICATION OF SUGAR WITH MICRONUTRIENTS: VITAMIN A AND IRON



6.1 Fortification of Sugar with Micronutrients Vitamin A and Iron

Objectives and Description

Vitamin A deficiency is a public health problem in developing countries, affecting the poorest segments of the population, with serious consequences to children health and survival. Guatemala and other countries in Central America have decades of experience in the application of fortification processes for the reduction of vitamin A deficiency. To reach children in vulnerable families suffering from malnutrition with a micronutrient such as vitamin A, it is essential that a food commodity be chosen that is widely consumed, inexpensive, available for purchase in the local markets and manufactured by relatively few producers. Sugar is one of the few commodities with these characteristics in some developing countries in Central America, Africa and Asia (USAID, 2000).

Vitamin A helps to improve vision, strengthen the immune system, eradicate blindness in children and reduce child mortality. During the 1965-1967 period, a national survey conducted in Guatemala identified that 26.2% of children under 5 years old suffered from vitamin A deficiency which affected their immune system and produced night blindness. During the 1969-1974 period, the Institute of Nutrition of Central America and Panama (INCAP) determined that sugar was the best vehicle for providing vitamin A to the most vulnerable population and moved forward developing the corresponding technology for the fortification of sugar with this vitamin. The Guatemala Sugar Agroindustry started the fortification of sugar with vitamin A in 1975.

After the fortification of sugar with vitamin A, the percentage of children with blindness was reduced from 26.2% in 1965/1967 to 16% in 1995/1996 and to 0.3% in 2009/2010. In 1996 UNICEF recognized the Guatemala Sugar Agroindustry as a pioneer on the fortification of sugar with vitamin A, given the positive impacts in the health of children.

The Sugar Agroindustry continues to maintain an appropriate level of fortification in some of the sugar produced in Guatemala as recommended by INCAP and has invested over \$2.3 million in technology updates, process modifications, laboratories, testing, quality control and capacity building since 2008. The Agroindustry has two centers for the fortification of sugar with vitamin A.

Iron deficiency in the nutrition of vulnerable communities prevails in many developing countries. Iron deficiency is a recognized cause of anemia. Iron is a necessary mineral for the transport and storage of oxygen in the blood and muscles. It is also essential for the synthesis of DNA, which is vital for growth, healing, reproduction and immune function. Iron is used by enzymes involved in the synthesis of collagen and hormones. Iron deficiency is more common in premature newborns, infants and preschool children, women of reproductive age, and people with chronic blood loss, such as hemorrhagic gastritis and parasitic infections.

According to data collected in the National Micronutrient Survey of 2009/2010 about 26.3% of children in Guatemala lacked adequate levels of iron. At that time, 47.71% of children in the country suffered from anemia, of which 72.06% between six and eleven months of age had anemia. In the case of women of childbearing age, 18.4% presented iron deficiency, of which anemia was found in 29.12% of pregnant women and 21.43% in non-pregnant women.

The Guatemala Sugar Agroindustry is voluntarily adding iron to the sugar that is mostly sold in western Guatemala since 2008, helping to reduce anemia in vulnerable populations. This activity benefits particularly the western region of the country where people are experiencing the highest nutritional deficiencies.



After the fortification of sugar with vitamin A, the percentage of children with blindness was reduced from 26.2% in 1965/1967 to 16% in 1995/1996 and to 0.3% in 2009/2010.

Related Targets

The fortification with vitamin A and adding iron to sugar supports the objectives of Target 3.2 on reducing the mortality of children under 5 years of age and of Target 3.4 of preventing and treating diseases that allow the reduction of premature deaths. This activity also supports Target 3.d because it strengthens the capacity of Guatemala on risk reduction and management of national health risks.

Challenges

One of the main challenges of this activity is related to the need to continue monitoring the health of children through time. Many children in vulnerable communities could benefit from the fortification of sugar with vitamin A and iron but still suffer from malnutrition due to other causes with serious implication to their health and wellbeing.

Lessons Learned

An important lesson from the experience of decades of fortification of sugar with micronutrients in Guatemala is that 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 country and in particular of the most vulnerable communities.

Another important lesson derived from the experience in Guatemala is that fortification with a locally produce commodity can become a regular practice and can be maintained through time. It is indeed an effective strategy to reduce micronutrients deficiency in the vulnerable communities in developing countries.

Results

The fortification of sugar with micronutrients has proved to be a very successful strategy in Guatemala as demonstrated by the relevant statistics of the last several decades. Today vitamin A deficiency is not a public health problem in Guatemala. The Guatemala Sugar Agroindustry has played a very important role in maintaining the capabilities for the fortification of sugar with micronutrients and is keeping its production for the benefit and wellbeing of the children of Guatemala.

7. WATER SUPPLY AND WASTEWATER



7.1 Water Supply And Wastewater

Objective and Description

Guatemala faces considerable challenges in terms of water resources management. The situation affects the health of the most vulnerable communities in the country. In the latest evaluation of implementation of integrated water resource management, Guatemala scored 20 out of a 100 (GWP, 2021). The Sugar Agroindustry of Guatemala recognizes the importance of integrated water resource management, within its production processes and its promotion in the country. Therefore, the industry has made considerable progress increasing efficiency in irrigation and industrial water use. Also, it has made contributions in water research and capacity building. Roundtable multi-stakeholder consultations have been organized with local governments to facilitate dialogue on water needs and water use among local communities, agro-export companies, governmental organizations and municipalities.

FUNDAZUCAR has an Engineering and Water Sanitation Unit (UNISAN). Created in 2001, UNISAN promotes the execution of infrastructure projects that allow Municipalities access to safe water by providing free expert technical advice.

The Sugar Agroindustry, through FUNDAZUCAR, provides free assistance and technical advice for the preparation of projects, which are necessary for the allocation of funds for construction, contributing to the welfare and development of the communities. These activities support the government authorities who are responsible for the financing and execution of water and sanitation infrastructure works. These projects benefit close to half a million people in rural areas. Community management has allowed the construction of 81 projects. Currently 8 new projects are being built and 35 already have approved funds. Over 240 infrastructure studies have been conducted for different communities.

Another critical area, in which information is collected, is in relation to the levels of community water wells. Groundwater is a strategic resource in the Pacific Lowlands region of Guatemala. Around 40% of the population in this region lacks running water at home and relies on wells to access groundwater. The ICC monitors 249 wells four times a year to follow changes in the water levels and to anticipate any problems that might occur in the region.

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.

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

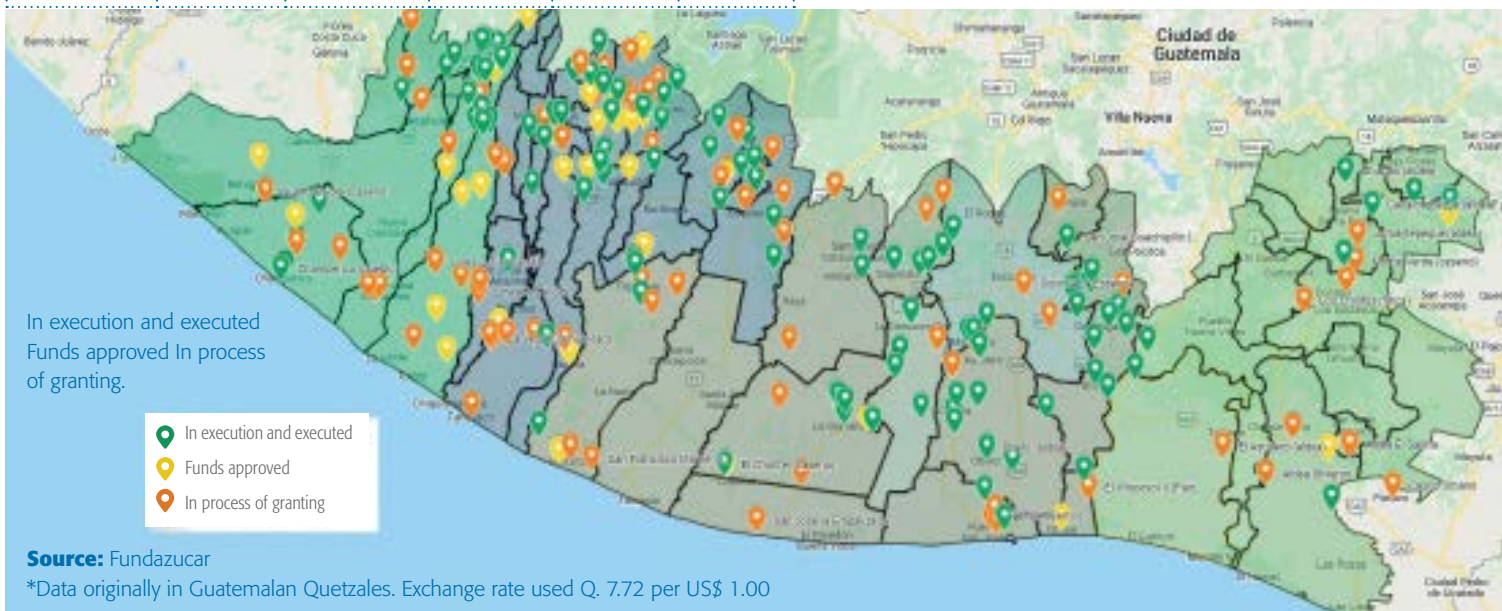


45
with funds
approved

Funds mobilized

Status

Department	Without Municipal follow up	In process of granting	Funds approved	In execution	Executed	Total	Fundazucar'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					



Challenges

Water access in Guatemala is still a major challenge in many communities. The work of the Sugar Agroindustry in this field is very valuable but needs to be coordinated with official authorities and the impact in the long run depends on additional efforts by the government. Other challenges include reliability of water services, water quality, service quality, water disputes and the increase in population in the affected areas that imply the corresponding increase in water access.

Related Targets

These activities support the objectives of several targets of SDG 3 related to the prevention of deaths and illnesses by supporting the availability of clean water for many communities. These activities are particularly related to Target 3.9 on reducing deaths and illnesses from hazardous materials and from pollution and contamination of water.

According to the Global Water Partnership (Central America), the main challenges in water and sanitation are: increasing the percentage of households with access to water, improving the continuity of the service as well as improving water quality (GWP, 2015). The 2018 census showed that sanitation coverage is lagging much more than water service (INE, 2018).

Another major challenge is the lack of political will and capacity from the local authorities to access funding that is available for water and sanitation.

Lessons learned

This experience by the Sugar Agroindustry has demonstrated that in addition to providing support for water access and treatment, other important relevant activities need to be completed or other additional services need to be provided.

In particular, the need to provide sanitation services in isolated communities and the need to perform hydrogeological studies in some areas.

Results

The Sugar Agroindustry, through Fundazúcar has been able to ensure water access to a considerable number of communities in the south coast region of Guatemala. Monitoring support of water quality and quantity is also provided through ICC. These activities support the government authorities who are responsible for the financing and execution of water and sanitation infrastructure works. These projects benefit more than half a million people in rural areas. Community management has allowed the construction of 129 projects. In 2022, 12 new projects are being built and 45 already have approved funds. Over 290 infrastructure studies have been conducted for different communities.





INTERLINKAGES WITH OTHER SDGs

Activities by the Guatemala Sugar Agroindustry related to “Ensuring Healthy Lives and Promoting Well-Being for All at All Ages” (SDG 3) include interlinkages with other SDGs. One clear interlinkage is Education (SDG 4) as the Sugar Agroindustry offers capacity development activities for the communities in its area of influence in order to improve their health and wellbeing. These activities are

also related to SDG 17, as multiple partnerships among different stakeholders are required in order to fully implement the Sugar Agroindustry’s SDG 3 initiatives. Finally, the interlinkage between SDG 3 and SDG 1 (Ending poverty) is recognized, as the health services provided by the Sugar Agroindustry come at reduced or no cost to many patients in Guatemala.

CONCLUSIONS



The Guatemala Sugar Agroindustry has important activities in its sustainable development strategy strongly supporting good health and the wellbeing of the population in Guatemala. These activities include: Better Families Program, My Health First Program, the Better Communities for Local Development Program, the Fundazúcar Medical Clinic, Combating the COVID-19 pandemic, Fortification of Sugar with Micronutrients and Water Supply and Wastewater. By implementing and monitoring the results and efforts of these activities, the Sugar Agroindustry has been

able to ensure major improvements in the health of people particularly those living in vulnerable communities. The effort represents a critical part of the integrated approach followed by the Sugar Agroindustry in its social strategy that promotes healthy lives and sustainable development. By providing health services, medical equipment and facilities as well as timely support to combat the COVID-19 pandemic, the Sugar Agroindustry has been able to ensure progress in critical health issues which represent priorities for Guatemala.

REFERENCES AND SOURCES FOR ADDITIONAL READING

Arroyave, G., Mejía L. and Aguilar, J. (1981). The effect of vitamin A fortification of sugar on the serum vitamin A levels of preschool Guatemalan children: a longitudinal evaluation. *The American Journal of Clinical Nutrition*. 34.pp.40-49, January 1981.

Arroyave, G.; Aguilar, J.; Flores, M.; Guzman, M; (1979) Evaluation of sugar fortification with vitamin A at national level, Washington D.C.: Pan American Health Organization. 1979.

Asazgua (2021), *Memorias de Labores 2020*. Asociación de Azucareros de Guatemala. 2021.

Asazgua (2020), *Memorias de Labores 2019*. Asociación de Azucareros de Guatemala. 2019.

Dary, O., Martinez, C., Guamuch, M. ; (2005) *The Sugar Fortification with Vitamin A in Guatemala: The Program Success and Pitfalls*, Washington D.C.: Pan American Health Organization. Scientific Publication 612. 2005.

Fundazúcar (2018). *Informe de Resultados*. Fundación del Azúcar. 2018.

Global Water Partnership (GWP) Central America (2021). *Situación de los Recursos hídricos en Centroamérica*. 2021. www.gwpcentroamerica.org

INCAP, USAID, (2012). *Sistema de Vigilancia de la Salud en Guatemala: Fase I: Prototipo de evaluación en cinco departamentos del occidente de Guatemala*.

INCAP (1973). *Nutritional Evaluation of Population of Central America and Panama, Regional Summary, 1965-1967*. Institute of Nutrition of Central America and Panama, (1973).

International Sugar Organization (2022): “*Sugar Year Book 2022*”, Londres, 2022.

USAID (2000): *Vitamin A, Sugar Fortification in Central America: Experiences and Lessons Learned*. MOST: The US Agency for International Development Micronutrient Program. Mora, J., Dary, O., Chinchilla, D., Arroyave, G. USAID, August 2000.

United Nations (2015): *Transforming our World: the 2030 Agenda for Sustainable Development*, A/RES/70/1.

<https://sustainabledevelopment.un.org/post2015/transformingourworld/publication>



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**WATER &
ENERGY**
SOLUTIONS
NETWORK

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