



**Report Update
December 2022**

Welcome to Ulew Fuego

Ulew Fuego is an experimental center by Asociación SERES for leadership and ecosystem regeneration located in El Rodeo Escuintla in the Boca Costa region of Guatemala. The center offers an experimental agroecology space for youth and farmers where resources and opportunities come together to inspire the creation of fairer and more resilient communities.

During 2022 we have impacted 350 people from rural communities in Escuintla that have been trained at the facilities of the Ulew Fuego training center.



Accessing Water

The project began with the preparation of the land so that the drilling machinery would not have problems entering the project facilities.

SERES staff worked to improve vehicle access by widening the road, uprooting of trees that could disturb the entrance of the machinery, finally work was done on the leveling of the platform drilling.

The drilling machinery entered the facilities of the project on December 22, 2021 in total they mobilized 3 trucks to carry out the drilling work.

Drilling work began on Monday, January 3, working two shifts a day, one shift from 7am - 4pm and the second shift from 17:00 - 5:00 am from Monday to Sunday. Twenty-five 20-foot tubes were entered with the aim of drilling and extracting substrate from the soil.

The work of drilling ended on Thursday, January 13, 2022 where proceeded to extract the 25 tubes and the Electrical Register to identify pervious areas within 500 feet, subsequently began the process of encasing and placement of bentonite and gravel for the pipeline absorption.

From 200 feet deep pipe was installed to absorb water from the freatic level. In total 25 tubes of 8" black steel ASTM A-53 were placed.



The pump used in the well is a Franklin Electric 5hp triphasic submersible pump. Which was installed on April 26 of this year, it was installed with 23 tubes of 2 "heavy type schedule 40, at a depth of 480 feet being tested with a 10KVA gasoline electric generator. In the test the pump gave a flow of 25GPM at the level of the face of the well. The duration of the test was 2 hours without reducing the phreatic level of the water inside the well. It is worth emphasizing that the reason why it was tested with an electric generator is because the solar panel energizing system was not installed by that date.

On Monday, May 2, the installation of the photovoltaic solar system began to energize the pumping system, with a total of 14 550W polycrystalline solar panels, Trina Solar brand, which is operated by a hybrid inverter with the capacity to transform DC energy. in AC. Said system has the characteristic of working without a battery system but it will only work when the solar irradiance is optimal for the generation of solar energy.



Pump installation inside the mechanical well.

In order to advance the project, we have acquired two 10,000-liter capacity tanks to store and distribute water in the 25-acre project.

One of the two tanks has been installed in a 5 meter high tower which will have the function of distributing water from the well to all points of the project by means of gravity and the second tank will be in charge of supplying the water needs of the center training and demonstrative areas of sustainable agriculture.

It is worth emphasizing the community support to get this tower, this tower was installed in the ATUS transitional shelters which served to supply water to the 5000 shelters, with the support of the community of La Dignidad we managed to get this tower for the center and the agricultural plots of the project.

The electrical cables from the well have been piped to the control panels. The final test with electricity is pending until the connection is finalized in the next month.



Tower installation view in project



Electricity Project

The funds from Diversity Foundation have been used to energize the Ulew Fuego facilities (Training Center and water pumping system) through the connection of a photovoltaic solar system. The 6.6kw solar panel system will provide us with lower operating costs and products derived from the operation with a lower environmental impact. Currently, the solar panel system is installed and in operation. In the process of installing the solar panels, we included 16 young people from La Dignidad and Rodeo in basic home electricity training and design of photovoltaic solar systems.

We have also been approved the connection to the national electricity grid by EEGSA. We now have a connection box and electricity poles to be able to connect and the company has made a visit to supervise the work.



National electricity grid connection box



Installation of photovoltaic solar system, carried out by young students from the Rodeo community.

Harvesting Opportunities

Since 2017 we have worked together with farmers in the areas of El Rodeo Escuintla. Annually, we have granted 30% of the land so that farmers can work their short-cycle crops. In the process we have supported 83 families in the area. This 2022 a total of 18 families have participated in the development of family agricultural plots. At the beginning of October the families managed to harvest a total of 150 qtt of corn.

Product	Average Production /family [qtt]	Total production of the land [qtt]	Local price [\$/qtt]	Savings/family plot [\$]	Total Saving / 18 families[\$]
White Corn	8	150	\$40	\$320	\$6,000.00

This 2022 the corn harvest decreased because a lot of farms weren't able to buy agro-supplies to maintain their plots. The demand for land for this year increased due the price of corn and a lack of jobs in the area .

An average family benefited has 6 to 10 members. This amount of grain supports a family with a year round supply of corn, helping them by not needing to buy corn. The long-term objective of the project is to provide new sources of economic income to the community so that in addition to their crops they can increase their economic income and meet their needs.

An analysis of food insecurity mentions that the increase in the prices of the Minimum Expenditure Basket, especially basic grains, affects more than half of the population (57%) due to lack of money.

Training the Community

We have trained 350 youth participants, community members and farmers from the project's area of incidence. We have carried out training related to community agroforestry and pollinators where agroforestry was practiced with banana and passion fruit. Other training was related with water optimization techniques in family farming.

The optimal use of water resources is a priority in rural areas, but it is also the treatment of black and gray water. Improperly managed gray water contaminates the environment and creates nests of insects such as vectors (mosquitoes) that cause epidemics. That is why we have provided ecological techniques for the treatment of gray water through banana circles, which allow us to take advantage of said water to create optimal conditions for the production of bananas and at the same time filter gray water.

We partnered with Proyecto CAN, to integrate nutritional workshops for mothers and youth in the community on how to best use native trees, seeds and local produce to prepare healthy and nutritious meals.





Apiary

Taking into account the value of bees in the ecosystem as pollinating agents and a source of income for small producers, we have strengthened the Ulew apiary. We currently have 12 hives in which we hope to have our first harvest by March 2023. We have managed to train 30 people in beekeeping techniques.

We are partnering with one of SERES youth entrepreneurs, who won seed funding to equipped the apiary with suits, beehives and another materials, to provide beekeeping educational tours for schools and groups, as well as commercialize the honey produced at Ulew Fuego under the business ApiCenter.



FINANCIALS

INCOME	\$	4,000.00
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EXPENSES

Construction Costs (Solar Panels)	\$	2,000.00
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Personnel Costs	\$	150.00
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Operational Costs	\$	1,605.00
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Program Activities	\$	245.00
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BALANCE	\$	0
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