



Well to Live

water well drilling + equipping to provide access to safe drinking water to 5 Wayuu communities in La Guajira, Colombia.

January, 2024

Providing access to safe drinking water to the Wayuu communities in La Guajira, Colombia, is an enormous humanitarian challenge.

The Wayuu, an indigenous group, have been disproportionately affected by water scarcity. The diversion of water sources for large-scale projects like Cerrejon coal mine or El Cercado Dam has reduced availability and have led to the depletion of groundwater and the contamination of remaining sources.

The situation is so dire that many communities dig wells, often with limited success, to find some water, which is frequently not safe to drink.







The Well to Live Project

Third Wave Volunteers partnered with **WATERisLIFE** to address this situation. As NGOs with many years of experience in emergency relief and access to safe water worldwide, we decided to go ahead with a Feasibility Assessment for the Drilling of Deep Wells for Safe Water Supply in Five Wayuu Communities in La Guajira.

Assessment conducted during Q4 of 2023



The five main assessed communities have a total of **214 families (1,130 people)**. Our mapping identified 13 additional neighboring communities with approximately **400 families (2,080 people)**.

In total, the wells could benefit 18 communities with 3,210 people approx. In addition, three schools in the area would benefit from access to safe water.

These 5 communities do not have reliable access to safe water, and they must move between 3 and 4 km to gather water, either on foot or by motorbike.



Jurralen



Walashimana



Waletpa



Cochinamana



Ojiakat



- 5.2 people per household (average).
- 95% of the households said they have no access to safe water. The main water purification methods regularly used are **Boiling water (36%), None (55%),** and Filtering with water purifiers (1%).
- 98% of households declared no access to toilets, while 95% declared no access to water storage facilities.
- 72% of respondents do not have access to sufficient food.
- 82% of households have resorted to severe coping strategies to cope with hunger.

Technical Feasibility



When analyzing the hydrogeological profiles of Maicao at the coordinates of the selected communities at depths of 100 carried out by the Colombian Geological Service (INGENIMAS), the modeling of iso-resistivity curves showed that the resistivity is less than 10 Ohm, which indicates the presence of water (weakly fresh or brackish) at a depth of between 120 and 150 meters. The curves showed that the (apparently semi-confined) aquifers in the area currently have a column of water available to be extracted by drilling. This information should be confirmed with a deep geodemographic in the sector or with a geoelectric Vertical Electrical Sounding (VES) in the place determined for the drilling of the wells*

It is also recommended to build water systems with water purification methods adjusted to the physical-chemical and microbiological parameters of the available water, which is usually slightly fresh or brackish.

* These studies are required by the Corporación Autónoma Regional de La Guajira -CORPOGUAJIRA (environmental authority of the department) to provide permits for groundwater exploration and prospecting.

Sociocultural feasibility



There is social and cultural viability. The communities expressed their willingness for the wells drilling and to share the water among the communities. However, a thorough consultation with all communities is required to determine the specific location of the systems to reach cultural and social agreements. The cultural agreement based on the Wayuu cosmivision involves the indigenous authorities defining the wells; locations according to their traditions, including ancestral practices such as spiritual consultations, dreams, and harmonization rituals. After these agreements, geoelectrical tests and topographical studies for the infrastructure can be carried out.

A social agreement is required to ensure access to water for the communities, shared management, and maintenance of the systems between the communities.

There are no disputes between Wayuu clans, and there is the political will of the different communities to promote the creation of self-management models for water wells to ensure their sustainability.

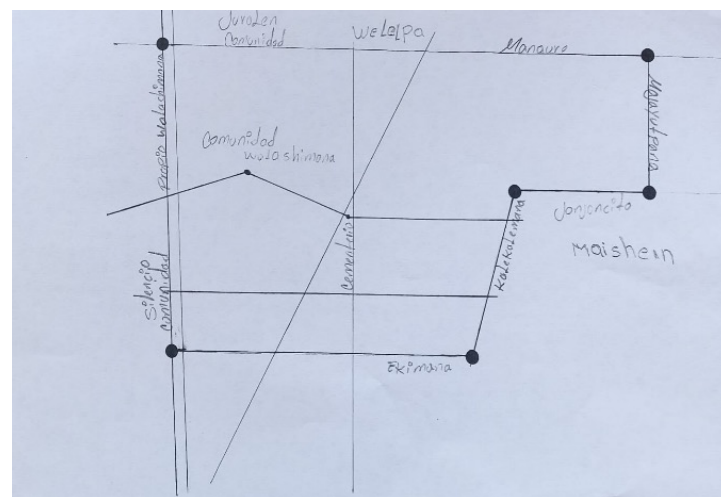
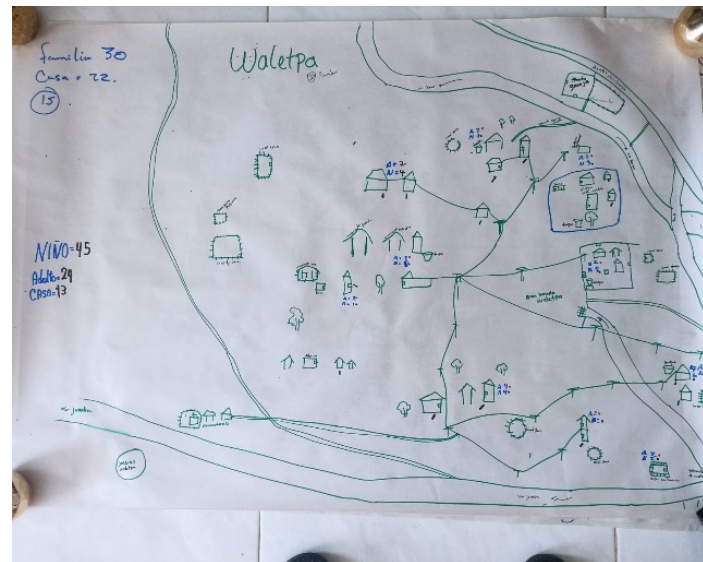
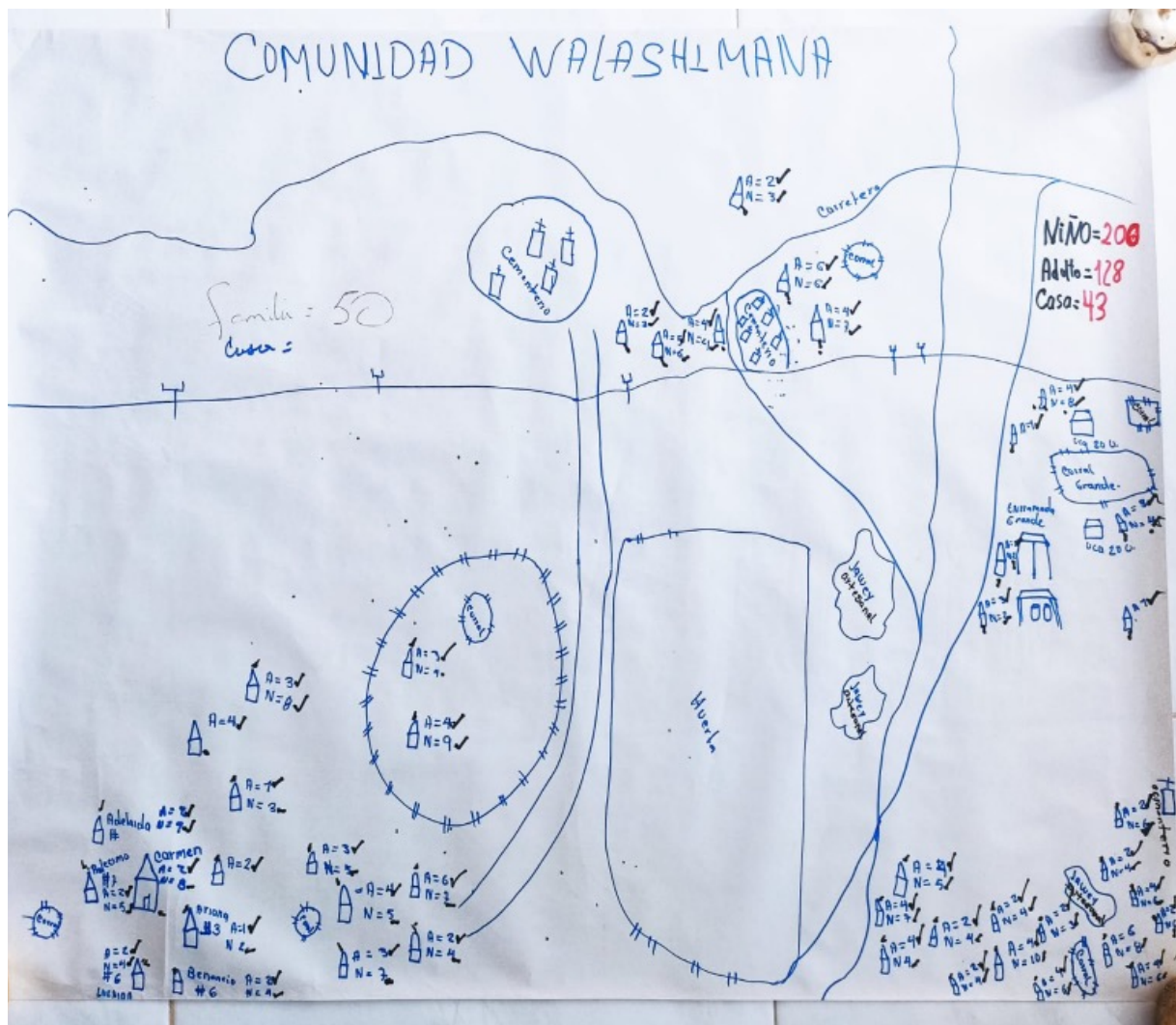


The technical analysis confirmed that **THERE IS UNDERGROUND WATER that can be supplied to the communities.** The Social and cultural assessment, indicated that there's willingness and support, but deciding on the location and responsibilities of each community is key.



Community engagement sessions and planning.

The key aspect of the project, after confirming water availability, and before getting into the implementation, is deciding on the LOCATION of the wells and the ROLE that each community will have.



Expected impact:

600 families / 3,210 people
(for both Option A and B)

Scope:

Additional technical assessment and water testing, mapping, drilling each well, creating water points, installing solar powered pump, water storage units, and filtration systems.

Project Design, Planning, and Management; Specialized Labor; and Logistics costs are included.

Total cost per well:

\$148,000 USD

Colombian military will lower these costs significantly by providing free labor, security, trucks and drilling equipment.

OPTION A

Two equidistant wells

Cost: \$296,000 USD

Two is the minimum number of wells to reach the 600 families. It would be necessary to locate them in equidistant places, with people walking on average between 2 and 2.5 kilometers to collect water. Establishing equidistant points and making agreements between communities can be more costly overtime. They will have access to the water, but it'll be more difficult for communities to ensure the security and maintenance of the systems, making them more vulnerable.

WELL 1

- **Main:** Jurralen, Waletpa, Cochinamana
- **Additional:** Limoncito, Jepein, Shetein y Patillita

WELL 2

- **Main:** Ojiakat, Walashimana and Manaure
- **Additional:** Chorolomana, Cacheshumana, Paquimana, Cotocomana, Warramarralen , Amuchichon, Muashitos, and Silencio.

OPTION B

Three optimized wells

Cost: \$444,000 USD

Having 3 wells allows for the creation of three nodes, reducing travel time and increasing security, having each well installed in a specific community, responsible for its administration and maintenance. The process of community agreements may be simpler.

Part of the plan is to create a strong node to provide water to 11 communities in Walashimana, since it is the community with the best social organization and willingness to share water with the other communities.

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- **Additional:** Chorolomana, Cacheshumana, Paquimana, Cotocomana, Warramarralen , Amuchichon, Muashitos y Silencio

WELL 3

- **Main:** Cochinamana
- **Additional:** Jepein y Shetein

Safe drinking water: A success story in La Guajira

Santa Clara 500 people

Maintenance and repair of water supply, storage and purification systems.
Installation of filters for water pre-treatment and purification, with RO.
Solar panel installation.
Water Committee formation per community, for operation and maintenance. Monitoring.



What?- “Well To live”- A solar water well project.

Where? -Wayuu indigenous tribes in La Guajira, Nth Colombian desert.

Problem? -No access to water for people, crops, livestock and survival.

Result? 1000’s of babies and children are dying of malnutrition and lack of water.

Solution?- Our partner engineers have located water deep underground, and we have begun building the first Solar water wells, cared for by a local sustainable Wayuu Women’s non-profit.

WHO? THIRD WAVE VOLUNTEERS - WATER IS LIFE.

\$\$\$? - Acquisition of 3,154 innovative solar lights at 13\$ each= \$US41,000 covers 18,924 Tribes people- (lights life span -12 years).

Three solar panel arrays for 3 water wells-US\$9,000 + US\$ 41000= US50,000.

SCALE?- First year 3 solar wells, 5th year- scalable to 12 wells. 10 years- 24 wells.

