

GDVA Foundation, Inc.

823 University Blvd. EAST
Silver Spring, MD 20903
<https://www.gdvafoundation.org>
info@GDVAFoundation.org

Completion of a sewerage system for the indigenous community of Tunshi San Javier, in Licto, Ecuador (working document)

Prepared by Guillermo I. Gallegos Ayala
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1. Summary

In 2025, the community of Tunshi San Javier (belonging to the rural parish of Licto, in the province of Chimborazo, Ecuador, and located 13 km from the canton of Riobamba) still does not have a sewage service, which would undoubtedly improve the living conditions and basic health (with positive collateral consequences) of its 545 inhabitants, of whom 282 are women, 263 are men and 151 are minors. In Tunshi San Javier there are 69 children from 5 to 12 years old (school age) and there is a primary school, which is attended by only 30 children. The school is not connected to a sewage system either.

In addition, San Felipe Neri Educational Unit, of Riobamba, Ecuador, has a sports area in Tunshi San Javier available to its children and youth, who would also benefit once this system is implemented.

This project began as a dream of the community, before 2012, when it began to take shape, with details that we ask you to find in the attachments; and, to make it a reality as soon as possible, we are addressing your sensitivity and dedication for the construction of a better global community to request from you a financial aid of 48,341.00 USD, which as you will find detailed below is the base amount required to complete an initial and functional implementation of the sewage system.

48,341.00 USD may not be enough for many people around the world to buy a house or even a car, but it could be used to benefit 545 people in Tunshi San Javier to buy pipes and metal manhole covers, rent machinery and buy material to put a sewage system into operation in the 21st century. The community is committed to collaborating among themselves (Minga) with labor for the works. Also, from the San Felipe Neri Educational Unit and GDVA Foundation, Inc., we salute your work and offer our full support and commitment to the community in the implementation of this objective.

2. Facts

Name of the Community: Tunshi San Javier

Parish: Licto (rural)

Location: Tunshi San Javier. Canton: Riobamba. Province: Chimborazo. Country: Ecuador

Spoken languages in the community: Spanish, Kichwa.

Autorities: Town Hall (President, Vice-President, Secretary, Treasurer, and Members), Water Board, and Irrigation Board.

Jurisdiction: Decentralized Autonomous Municipal Government of the Canton of Riobamba (GADMR).

Number of inhabitants: 545

Number of minors: 151

Number of school-aged children (5 to 12 years): 69

Number of children who attend the local school: 30

Reference cost: 48341.00 USD

Duration: 3 months

Participants: Community of Tunshi San Javier, Unidad Educativa San Felipe Neri, GDVA Foundation, Inc.

3. Background and current situation

To date, in the year 2025, the community of Tunshi San Javier does not have a sewage system. The current solution for wastewater disposal consists of the use of septic tanks - per house and financed by each household. Each time a household's septic tank is full, its members empty it themselves or rent a tractor with their own means to dig a new space. Very sporadically, at the request of the interested family, the GADMR intervenes to empty the tank.

The sewerage project is urgent and has already been approved by the relevant authorities: Senagua since 2018 and the GADMR since December 3, 2019.

Concerned about its own situation, the community undertook, with its own means and effort, the realization of technical studies, contributing approximately \$18,200.00 USD with resources from its own community members, through the sale of cattle and lambs. With initial rejections from the authorities in the face of the community's fair demands, this dream began to materialize since 2012, with initial contributions from the community itself of \$5,000.00 USD and an additional \$12,000.00 USD from the same community since 2017 for studies that were finally approved, plus approximately \$1,200.00 USD for a soil study prior to the installation of a treatment tank.

In the sewerage system, progress has been made, with contributions from the GADMR, in approximately one third of the total work required (with pipes and metal covers financed) and with the treatment tank built and installed between 2021-2023 with a contribution of \$ 50,000.00 USD, which is finished, but not in use, because there are still missing connection pipes from the homes.

Once in operation, the sewerage system will be connected to the treatment tank, from which the treated water will flow into the nearby river of Chambo (Section 6. Figure 1).

4. Advances and necessities

	Total required	In existence (advance)*	Still required
Pipes	910	225	685
Metal manhole covers	85	24	61
Crushed gravel	150 m ³	30 m ³	120 m ³
Blue macadam	150 m ³	30 m ³	120 m ³
Concrete	900*50Kg	200*50Kg	700*50Kg

* The GADMR has provided 225 pipes, 24 metal manhole covers (for control points and access to the sewer system), 200 bags of concrete (50 kg), 5 “dump truck loads” (1 “dump truck load” is equivalent to 6 m³) of gravel, and 5 “dump truck loads” of macadam. In return, the community has contributed with labor.



5. Budget

	Still required	Individual cost USD	Budget USD
Pipes **	685	39,60	27126,00
Metal manhole covers	61	125,00	7625,00
Crushed gravel	120 m ³	100,00/6m ³	2000,00
Blue macadam	120 m ³	110,00/6m ³	2200,00
Concrete	700 * 50Kg	7,70/50Kg	5390,00
Machinery rental	160 hours	25 USD / hour	4000,00
Total Budget			48341,00

** Pipe characteristics:

Material: Corrugated PVC

Length: 6 meters

Diameter: 200 mm

With pressure rubber gaskets.

6. Impact on the population, benefits and short and medium term projections

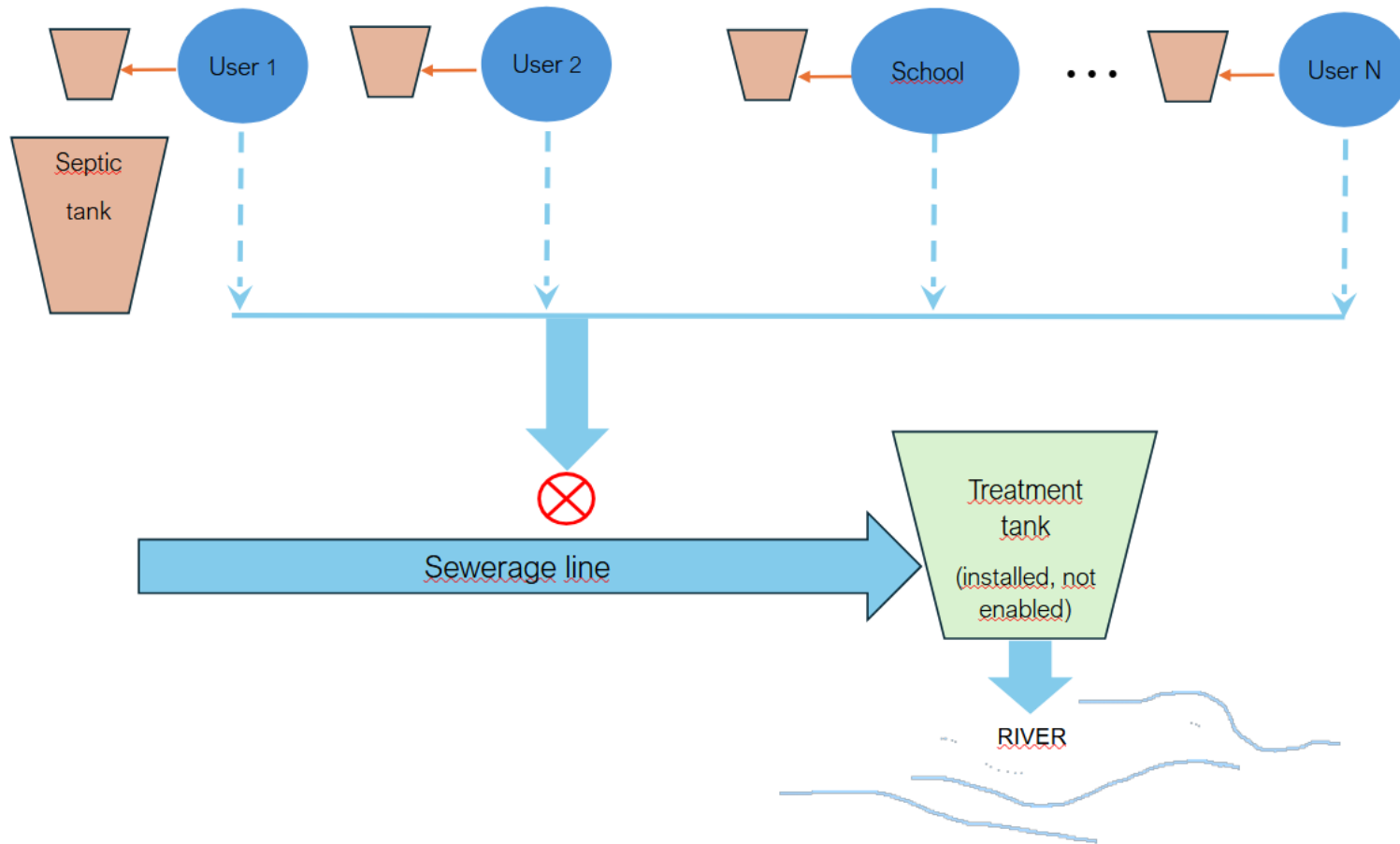
Once the sewage system is operational, the main beneficiaries will be 545 residents of the community, including its 69 school-aged children (its 30 children attending the local primary school), as well as the children and young people of the San Felipe Neri Educational Unit of Riobamba, who regularly attend the facilities in Tunshi San Javier.

It is important to consider the positive medium- and long-term impact of the sewage system on the environment and the health of the residents of Tunshi San Javier, since currently, the drains from the septic tanks of the homes are mostly connected to the edges of the vehicle road, which poses a risk to the residents, including the school children, who walk and cross the street every day.

Once the system is functional, we recommend a definitive solution for the treatment tank. Although the tank is installed, its inhabitants have expressed concerns about whether it should be covered (to avoid odors and contamination), while its builders have recommended to the community that the tank should first be operational in order to make a definitive assessment. Given this situation, we anticipate possible additional costs for a comprehensive solution ideally immediate (but subsequent to the current implementation proposal).



7. **Figure 1. Scheme.** Currently, each household (User) is responsible for maintaining its own septic tank (or building a new one, when the old one is full, if necessary) and connections to the sewer system are missing. Most households have the drain from the septic tanks connected to the roadside, which poses a growing health hazard to residents (including children who cross the road to school every day). There is a treatment tank (built between 2021-2023) which is not operational and which, once put into operation, will process the wastewater before sending it to the river.



8. Pictures



1



2



3



4

Treatment tank (1 -3) and metal manhole covers (4)





5 Internal road through the community, where the main sewer pipe passes.



6, 7 View (upwards) from the treatment tank





8 – 10 Primary school (from kindergarten to seventh grade). Of the 69 school-aged children (5 to 12 years old) in the indigenous community of Tunshi San Javier, 30 attend the local school, which is not connected to a sewage system.





11 Nicole (left), who attends high school in Riobamba from Monday to Friday, washes clothes on a Saturday, as do many people in the community of Tunshi San Javier (there are no washing machines here). She also helps with animal care and other tasks that support income for the household. Ambrocio Tenelema (right), a community leader, has been involved in the efforts of the community to have a sewage system (since 2012). The community itself is committed to cooperating together to have the work done. (MINGA).



12 This pair of friends remained very interested in every detail of our visit.