Project Report

Laindatang Water Connections

Phase III - 2024

kawan baik

FAIR FUTURE FOUNDATION

Introduction

Laindatang Hamlet, situated in Mbatakapidu Village within Kota Waingapu District, East Sumba, faces a severe clean water crisis that profoundly affects the well-being of its residents.

During the dry season, villagers must travel 3 to 6 kilometers across challenging terrain to access clean water or purchase it from tanker trucks. However, these trucks often hesitate to deliver water due to the poor condition of the roads.

This scarcity significantly impacts hygiene and health, with residents sometimes able to bathe only once or twice a month when water supplies dwindle. This project seeks to provide a sustainable solution by drilling wells and establishing reliable, clean water infrastructure.

aktifitas mengambil air bersih untuk konsumsi, dan aktifitas mencuci di area mata air.

Challenges and Problems

The residents of Laindatang face several significant challenges, including:

- Limited access to clean water;
- The absence of electricity to operate water pumps;
- A lack of adequate facilities for storing clean water.

Project Objectives

Fulfilment of Clean Water Needs through Boreholes

To provide a reliable and sustainable source of clean water by establishing additional boreholes, ensuring consistent access for the community.

Availability of Additional Clean Water Storage

To ensure residents have adequate facilities to store clean water, meeting their daily and general needs.

Provision of Independent Electricity for Water Pumps

To equip Laindatang Hamlet with an independent source of electricity to power water pumps, enabling efficient water distribution.

Residents collect water from a spring located on a ridge, requiring a 3 to 6-kilometer walk on foot from their settlement.

lanskap permukiman di hamparan laindatang, rumah-rumah berjarak cukup jauh satu sama lain.

Beneficiaries

A total of 190 individuals will benefit from this project, comprising:

- 100 residents from 19 families in Laindatang Hamlet;
- 90 members of the school community, including 13 teachers and 77 students.

Project Location

Laindatang Hamlet and School are situated in Mbatakapidu Village, East Sumba Regency, East Nusa Tenggara Province, Indonesia. The school is located approximately 25 kilometres from Waingapu, the capital of East Sumba Regency.

Action Plan Details

Laindatang Water Connections Phase III

Survey

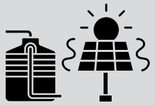
The survey, conducted by the well drilling expert team, aims to identify the precise location of the water source and determine the optimal depth and flow rate of the water. Additionally, the survey ensures that all aspects of the well drilling process are executed smoothly. Involvement from beneficiary residents, along with their commitment to maintaining the facility, will be key focal points of this survey.

Well Drilling

The well will be drilled using a hydraulic drilling machine, with a maximum depth of 100 meters. This process will be carried out by the foundation's partners, who are experts in well drilling in East Sumba.

Ferrocement Water Tank Construction

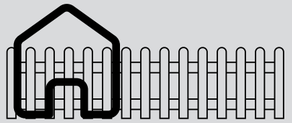
The water storage facility will be constructed using a ferrocement system, with a total capacity of 20,000 liters at various points. Water from the well will be directed to a storage tank and then distributed to household tanks throughout Laindatang Hamlet.



Solar-Powered Pump Installation

The installation of a solar-powered water pump is recommended, as Laindatang Hamlet does not have access to electricity from the National Electricity Company (PLN).

A solar-powered pump is essential for this process. While an alternative option could be the use of a gasoline or biodiesel generator, this would impose operational costs (fuel) on residents and have an adverse environmental impact.



Construction of Pump Houses, Well Installations, and Safety Fences

Essential infrastructure will include pump houses, which will support the performance of the pumps and power plants, as well as safety fences to protect against livestock that frequently pass through the area.

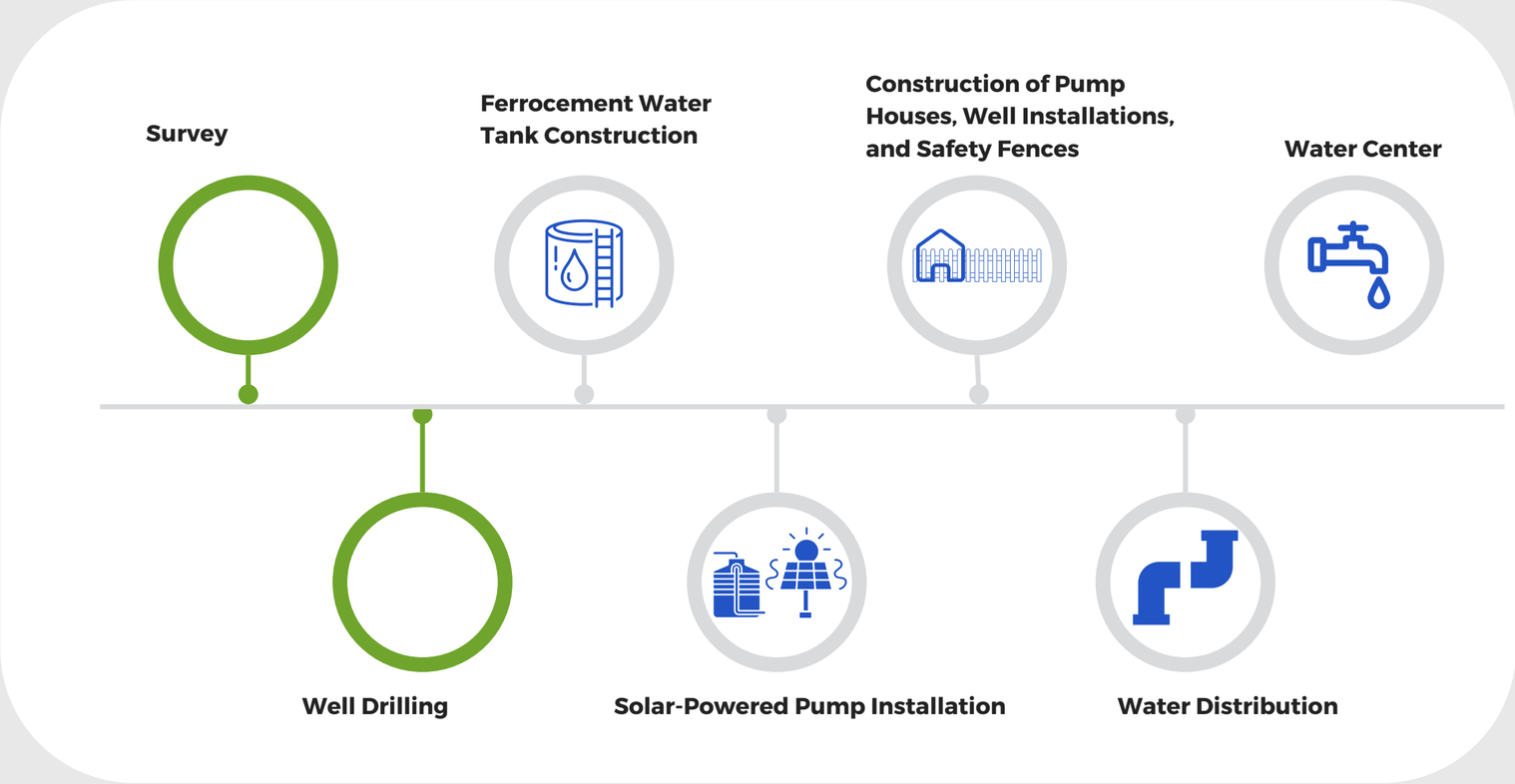
Water Distribution

The clean water distribution system for this project will be limited to the Laindatang Hamlet area, utilizing existing pipeline infrastructure. By harnessing the earth's gravitational energy, this system will efficiently distribute water throughout the village without the need for electricity.

Water Center

Infrastructure will be developed around the water tanks to store clean water for the residents.

Implementation of Action Plan



The implementation of activities has progressed to the Well Drilling stage, but it cannot move forward to subsequent phases until the drilling process is deemed successful.

During the well drilling stage, up to three drilling points were attempted over a period of seven months, with challenges encountered at each location. While these obstacles have delayed progress, they have also highlighted the need to revise our approach.

To achieve the project's objectives, it is essential to adjust our strategy by deploying additional resources, expertise, and more effective tools. This will involve leveraging greater technical knowledge, improving the tools used, increasing the budget allocation, and ensuring a more efficient approach to overcoming the current challenges.
This adjustment will ensure that we move forward with the project in a manner that aligns with our goals while addressing the complexities encountered.

Survey

Drilling Point Survey

The initial survey identified three potential drilling points for the well process. These points are estimated to reach depths of between 30 and 85 meters. However, the water discharge at these sites is low, meaning the flow is not rapid, and the continuity is limited (the pump is expected to stop after 1-3 hours of use).

Community Meeting

During the meeting with the community, the landowners at the drilling site expressed no objections to the use of their land and showed enthusiasm for supporting the drilling process. They offered assistance with road repairs and equipment mobilization. This meeting marked the first step in the drilling process, where residents actively shared their opinions, provided suggestions, and ultimately agreed with the drilling team and the foundation on the drilling location.

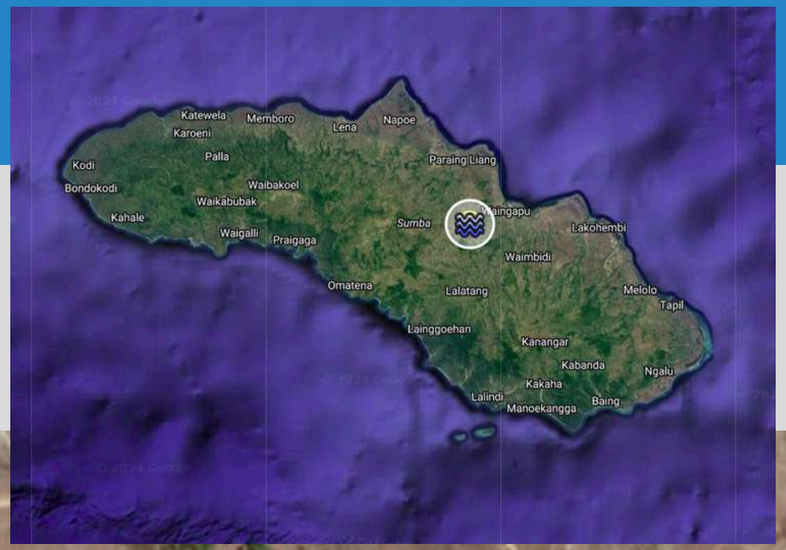




Drilling

Drilling Point Map

The well drilling sites are located as follows:



Point 1 The well drilling has a distance of about 116.49 meters from the house of the other residents. and covers a distance of 325.04 meters to the terminal tank in the principal's dormitory.

Point 2 Approximately 108.19 meters from the nearest residential house, with a distance of 337.12 meters to the terminal tank in the principal's dormitory.

Point 3 Approximately 147.12 meters from the nearest residential house, with a distance of 282.72 meters to the terminal tank in the principal's dormitory.

Drilling

Mobilization of Materials and Drilling Machines

Due to the difficult road access to the drilling site, trucks carrying machines and materials must stop some distance away. Transporting the materials and equipment to the site requires skilled drivers, and we sought assistance from the government to provide the necessary personnel.

The mobilization process is led by the Truck of Life, driven by Alex from the Fair Future Foundation (FFF), with residents supporting the transport by hand in a spirit of cooperation. This activity takes place from morning until night. Additionally, heavy and prolonged rainfall further complicates the process.

Pengeboran

Rituals

Before commencing the drilling activity, the community and team carried out the Marapu traditional ritual, a belief practiced by most of the people in Laindatang, as they continue to follow Marapu, the local spiritual tradition of Sumba.

The ritual involved offering betel nut and other offerings, seeking blessings for the successful and smooth execution of the drilling process at the planned location.

Drilling Point 1

Duration: **4 weeks**

depth of the well **84 meter**

A total of **60,000 liters / 12 truck** of water is required

Soil **cavities** caused the water to **vanish**

The first drilling attempt took place from February 23 to March 22, 2024, reaching a depth of 84 meters. However, the targeted underground water flow experienced a water loss, leading to the decision to relocate to a new drilling point.

Constraints:

- The well lip wall experienced a landslide due to soft or loose topsoil,
- Water tank trucks had difficulty accessing the site, and the pipes needed to be extended over a significant distance to supply water for drilling,
- High rainfall during the work caused frequent delays in the drilling process,
- Water loss occurred due to hollow soil, making it difficult for the underground water flow to rise, which led to the decision to relocate the drilling point.

Drilling Point 2

Duration: **2 weeks**

depth of the well **84 meter**

A total of **40,000 liters / 8 trucks** of water is required

Casing blockage

Drilling began on March 29, 2024, and reached a depth of 32 meters over approximately two weeks. The water in the well rose to 17 meters from the bottom, but during the casing pipe installation, water discharge rapidly decreased until pumping was no longer possible, resulting in water loss.

Constraints:

- Casing blockage obstructed the water flow during pipe installation,
- The well wall collapsed, closing the deep excavation hole,
- After a week of monitoring, water discharge did not improve, leading to the decision to move to a third drilling point.

Drilling Point 3

Duration: **11 days**

depth of the well **52 meter**

A total of **30,000 liters / 6 trucks** of water is required

Failed to reach aquifer spring point

The drilling process at this point, conducted from May 23 to June 30, is critical for determining the success of future wells.

In 1 week and 4 days, a depth of 52 meters was reached, using up to 6 trucks during the process.

Constraints:

- Water discharge was too low, producing only 120 litres in 7 minutes. Subsequent tests showed a decrease in discharge and instability,
- The casing pipe installation was partially unsuccessful, with only 4 out of 10 pipes removable,
- The aquifer did not recharge sufficiently, and no aquifer spring was found —only rainwater infiltration flows were present.

Impact of Activities

Loyalty and Unity in Cooperation

Since the initial meeting, the residents have shown great enthusiasm and high participation in mutual cooperation. They consistently assist the team in planning and field drilling activities, actively working together to ensure the success of the project.

Ongoing Clean Water Crisis

Despite these efforts, the clean water crisis persists, as alternative sources have not yet been successful. Residents continue to walk 3.5-6 km to the spring, and Clean and Healthy Living Practices remain unachievable.

We are committed to continuing our search for practical solutions that provide the community with clean water, ensuring we avoid raising false hopes and focus on realistic alternatives.

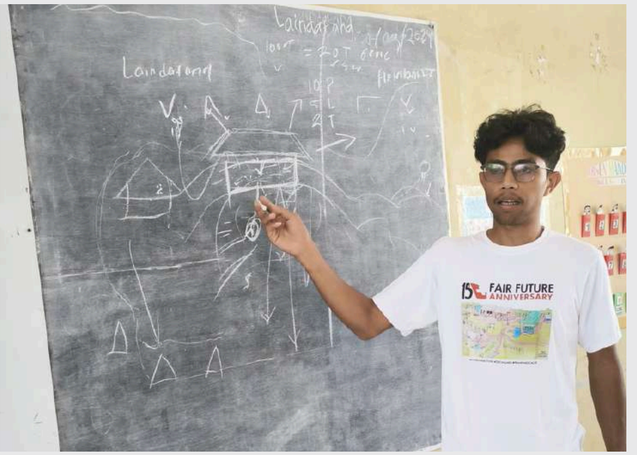
Obstacles and Plan Adjustments

Drilling at all three points faced challenges like well lip collapses, water loss, and wall collapses, extending the timeline and yielding insufficient results. Strategic adjustments are now necessary to achieve the project's objectives.

Collaboration and Evaluation

In October 2024, during an evaluation trip, we met with experts to explore solutions to ongoing challenges. These discussions offered valuable insights and alternative approaches, strengthening our commitment to finding sustainable solutions for Laindatang Village.

The Laindatang Hamlet project faces challenges, but with resident support and expert collaboration, we aim to provide sustainable clean water and improve residents' quality of life.



Financial Report

No	Description	Estimation (IDR)	Realization (IDR)	Balance (IDR)
1	Well Drilling • Funds allocated for the well drilling process.	111,660,000	110,862,500	797,500
2	Construction of Pump Houses, Well Installations, and Safety Fences • Planned funds for building pump houses, installing wells, and constructing safety fences.	20,006,400	0	20,006,400
3	Budget for the installation of pump systems and solar panels to support the clean water infrastructure.	0	0	0
4	Construction of Clean Water Facilities (Ferrocement Tanks) • Construction of Clean Water Facilities (Ferrocement Tanks)	68,580,000	0	68,580,000
5	Monitoring and Evaluation • Monitoring and Evaluation	4,200,000	8,765,535	(4,565,535)
Total		**204,446,400**	**119,628,035**	**84,818,365**

The total donation received by the Foundation, managed over the remaining seven months, amounts to **IDR 84,818,365**.
These funds were initially allocated for the construction of several facilities planned to be built after the successful completion of the well drilling process. This amount includes funds for:

- The construction of pump houses
- Well installations
- Safety fences
- The construction of two ferrocement tanks for clean water facilities

During the monitoring and evaluation process, a budget deficit occurred due to:

- Extended Well Drilling Duration: The prolonged drilling period increased the operational costs for monitoring activities by the field team.

OUR TEAM

Kawan Alex
Donor Authorised Representative & Advisor

Kawan Ayu
Director

Kawan Gogon
Programme Coordinator

Kawan Ino
Project Leader

Kawan Annisa
Secretary and HR

Kawan Niluh
Finance Manager

Kawan Cae
IT and Web Developer

Kawan Primus
Engineering Staff

Kawan Elthon
Photographer

Kawan Wahyu
Illustrator & Graphic Design

Kawan Santi
Treasurer and Admin

LAINDATANG WATER CONNECTIONS

SUSTAINABLE DEVELOPMENT GOALS

ELIMINATING POVERTY

Construction of clean water facilities to improve the quality of life, addressing the unaffordability caused by poverty.

ACCESS TO SAFE WATER AND SANITATION

We are providing access to clean water and safe water storage combined with healthy sanitation.

GOOD HEALTH AND WELL-BEING

Healthy lifestyles can be achieved sustainably through improved access to safe water and healthy sanitation.

PARTNERSHIPS TO ACHIEVE GOALS

Engaging the resident of Laindatang village to build their healthy sanitation facilities, by and for the community, the goal is achieved and sustained together.