Kemujan Water Group Presents

Dusun Butuh Butuh Air

Dusun Butuh Needs Water

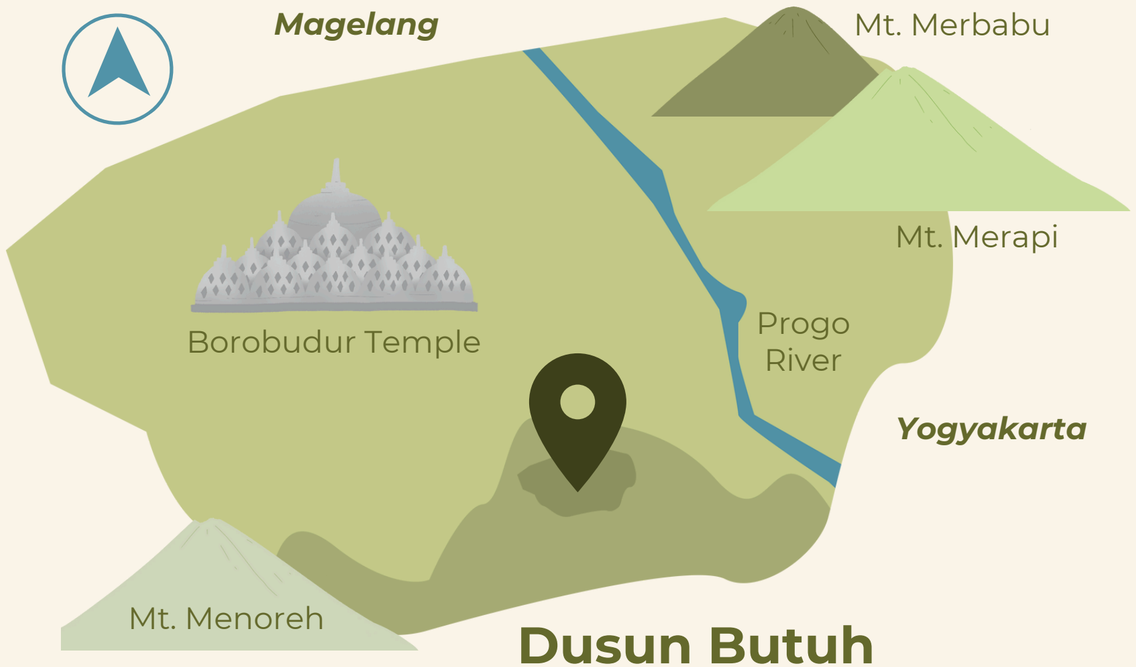
Meet The Team!

KEMUJAN WATER GROUP

from Indonesia

Where is Dusun Butuh?

Candirejo, Borobudur, Magelang Regency, Central Java Province, Indonesia



Dusun Butuh

It is on the hillside of Menoreh mountainrange

Google Map Terrain and Satellite View

The hilly terrain makes the village hard to reach and seems isolated despite its proximity to Borobudur Temple, a super priority tourism spot in Indonesia.

What is really happening there?

Water Crisis !

In the dry season, 77 **families (282 person)** are facing water scarcity. This is due to several reasons, as such:

8 Month-Long Dry Season

In 2023, Indonesia was hit hard with a long dry season as a consequence of the **El Nino phenomenon.**

Dried Up Local Water Spring

The village residents rely on **one water spring** as their **primary source** of clean water. If it dries up, where would they get water?

High Water Demand

The village is surrounded by **tourist accommodation spots** which **require a large sum of water** to operate.

We came up with the most feasible solution!

Rainwater Catching

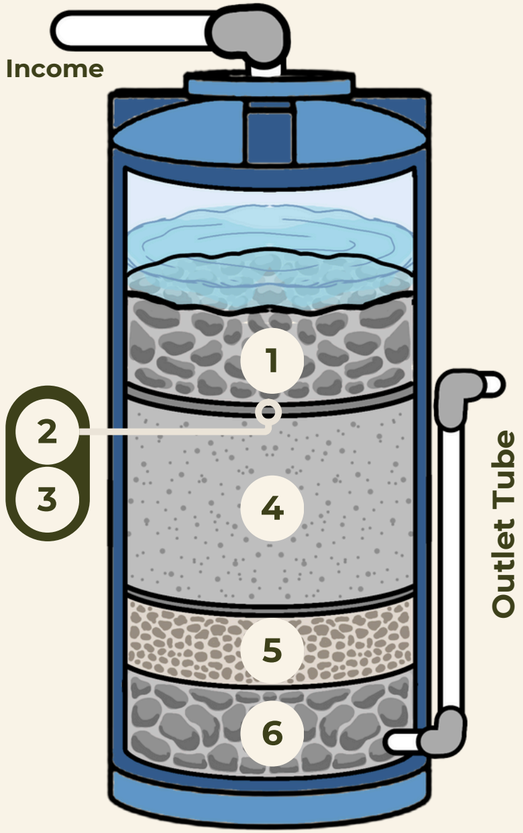
Supported by the fact that Magelang has an **average rainfall of 3725 mm per year.**

The mechanism is **simple and easily made with household item**

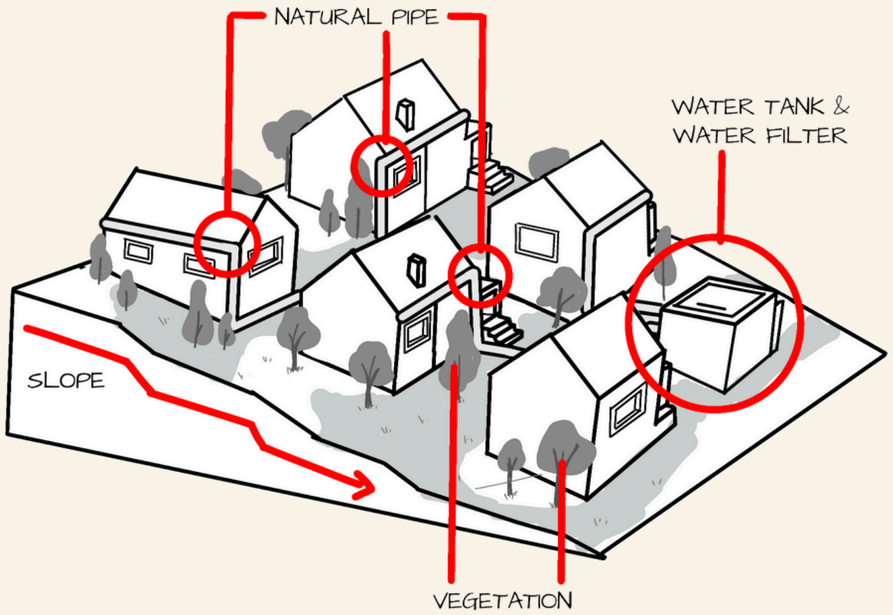
Cost-effective to implement

We came up with the most feasible solution!

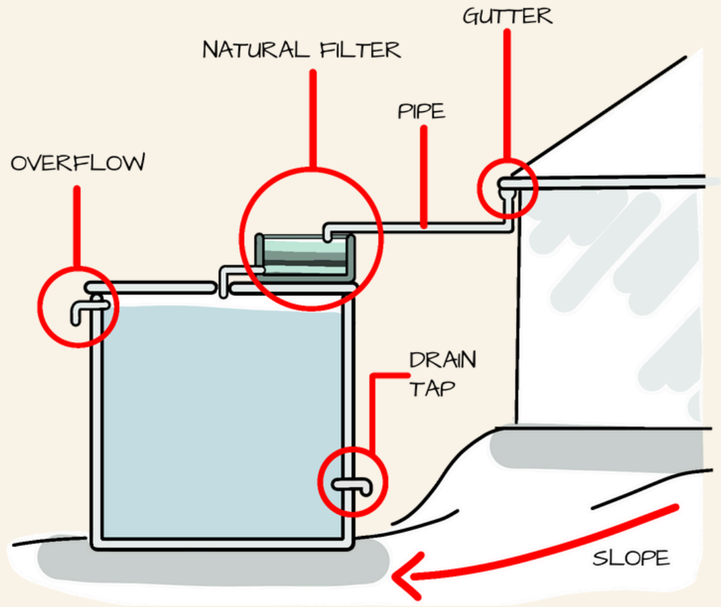
How does it work?



Water Filter



Rain Catchment Concept



Piping System Water Storaging Sytem

Then, we laid out a plan.

We had a plan that spans for 6-weeks and a list of stakeholders we needed to approach.

Stakeholders

- Youth community (Karang Taruna)
- Families most affected by water scarcity
- Village chief
- Local government

6- Week Plan

Week 1	***First field survey, preparation*** -	*Approaching stakeholders, field survey, finalizing grand design*
Week 2	***Program socialization*** -	*Preparing for socialization and target, choosing the location*
Week 3	***Construction*** -	*Constructing pipe, water tank, and filter*
Week 4	***Construction finishing*** -	*Finishing the construction and prepare for environmental recovery on the construction site*
Week 5	***Evaluation*** -	*Water tank first usage, evaluation*
Week 6	***Evaluation*** -	*Community satisfaction survey, larger scale project consideration*

Can we Implement it ?

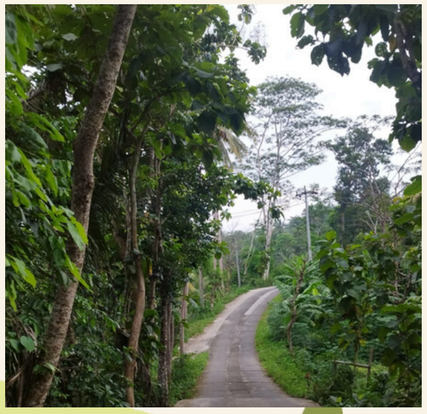
We Managed to go there !

WEEK 1 - 3 : FIELD SOLUTION ADJUSTEMENT AND INTENSE COMMUNICATION WITH LOCALS

Met the Village Chief : **Mr Said**

FIELD SURVEY

- We went there twice get a general knowledge on the location and problem there
- We also communicated with Pak Said, the village chief
- Pak Said recommended us to **change the water focus for the public facility**
- **We decided to change the location to the Mosque**
- **Mr Said agreed on our idea and will forward it to the village board**



A neccessary change.

Why did we choose the mosque?

What was the reason?

1. Located right in the center of the village most populous place
2. They have already built a ground tank with a large volume
3. Community activity center

Who do we contact to get to the mosque? **Mr Sudarto.**

What is our timeline for the project? **April 16th 2024 to April 30th 2024**

Who will build it? **Locals from there, including Mr Sudarto.**

How will they build it? **Starting from the groundtank, at the same time building the filter, after that build the catchment.**

turns out, our plan doesn’t fit for what their need the most

Locals knows their problems more

WEEK 4 - 6 : REDESIGN & FITTING THE IDEA.

Their other undetected problem :

1. They always receive the water donation every day either from the government or social organization, but it **always runs out** on the same day
2. the s**teep hilly conditions make their natural spring reserves always run out** in the 4th month of drought
3. They needed to storage the water donation, but there is **only one ground tank that has a large enough water storage capacity,** which is located immersed under the mosque.
4. the **most effective way to receive their water stock is by the donation**, because the rainwater catchment water will only be effective for the 1st month of dry season.
5. Their only water spring is an **unprotected spring**

turns out, our plan doesn’t fit for what their need the most

Locals knows their problems more

WEEK 4 - 6 : REDESIGN & FITTING THE IDEA.

16th April 2024 :

- Mr Sudarto suddenly called us about our idea implementation, he gave us a vital recommendation

They said that :

1. Groundtank construction that starts from zero could take up to a month to build it and **will cost more than $1000**
2. They **already have the groundwater tank bigger than we proposed.**
3. It is **risky if we keep continue with our project,** not only the expensive monetary needs, but also the workers have to be paid fairly for doin a hard job in such a small time
4. 2 Weeks for groundwater tank constrution, started from zero, for them, d**oesn't make any sense to build it.**
5. Nature based piping could be a solution, b**ut turns out it not worth it**, considering the humid climate & steep hilly hamlet condition

What is really happening there?

We had two options.

The locals know their problems best. So we listened and came up with **two possible solutions**, as such:

Continue The Rainwater Catchment Program

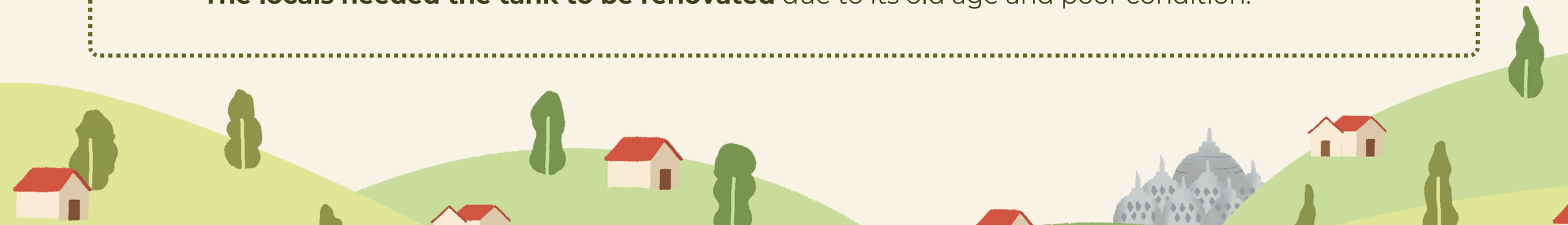
- High chance of exceeding the initial budget of $1000
- Takes longer time to construct

Renovate The Old Water Storage

- Far Less than $1000 monetary needs
- Shorter time to build it

We decided to renovate the old water storage!

- **It takes the shortest time.** We only have 12 effective days of implementation.
- **The locals needed the tank to be renovated** due to its old age and poor condition.



After some negotiations, we made adjustments to our plan.

We hear & understand what they need the most.

WEEK 5 : NEGOTIATIONS AND FORMING NEW PLANS

Knowing The Main Problem

They main problem is how to **storage the water** , not how to get the water

Hear their Needs

They suggested **prioritising** it over the **renovation** of the ground tank.

Offering some inovations

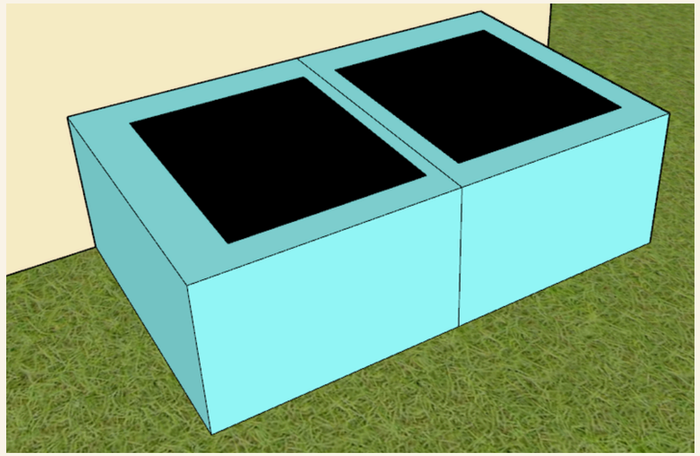
Based on **Blue Green Infrastructure** and match with the equipment and funds

It is called, FIXATED WATER POCKETING

Then, what have we came up?

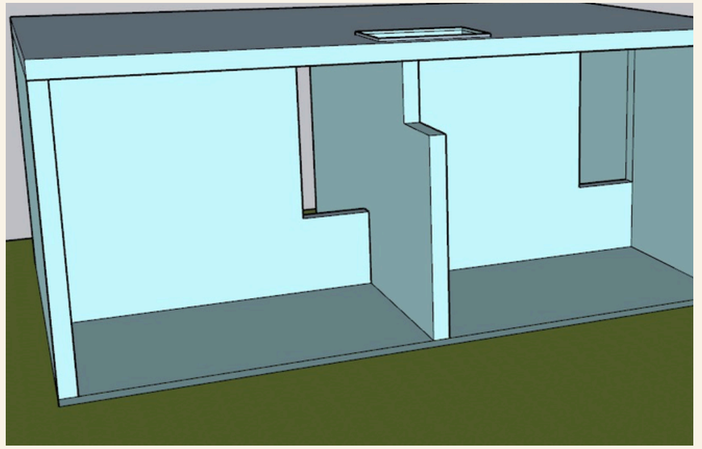
Constructing A New Control/Filter Tank

We will construct **a new filter tank with added natural materials** acting as the filter agent.



Renovating The Groundtank Under The Mosque

There were some holes that needed to be patched up! Other than that we need to make sure the tank won't be a mosquito nest.



The Final Answer

Construction Phase

Filter Tank Outside The Mosque

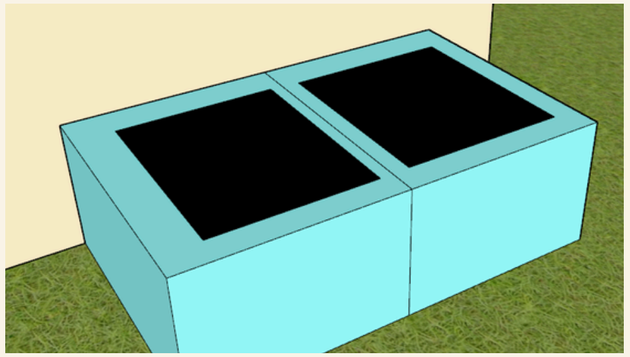
What is really happening there?

Final Result

Filter Tank Outside The Mosque

Before

Design



After

Water Filtration Tank

“Gravel, Palm Fibre, and Charcoal “

What is really happening there?

Final Result

Filter Tank Outside The Mosque

Water Condition Before

Murky, grey water

Water Condition After

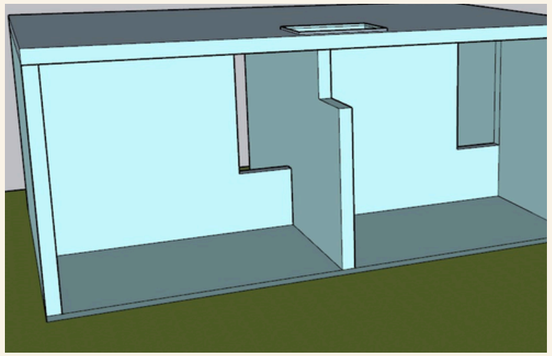
Clearer water, we can even see our reflection!

Final Result

Patching the leaked water inside Ground Tank Under The Mosque

Before

Design



Result

What we need to reflect

Evaluation

Time Management

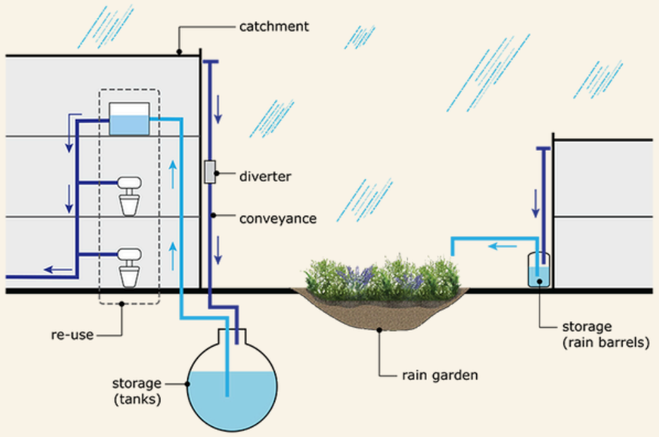
Techinal Management

We had limited time and we knew we could do better

Future Planning

Build the Rainwater Catchment System

We already socialized our next step on the plan which is building the rainwater catchment around the mosque.



Discuss More Solutions on more Efficient Water Storage

We plan to extend our contact with people in Dusun Butuh to further help them in managing a sustainable water storage.

Change was necessary but it didn’t hinder us on achieving our main goals

Our goals remain the same

Helping Butuh Hamlet survive their upcoming dry season water crisis

Helping Butuh Hamlet survive their upcoming dry season water crisis by

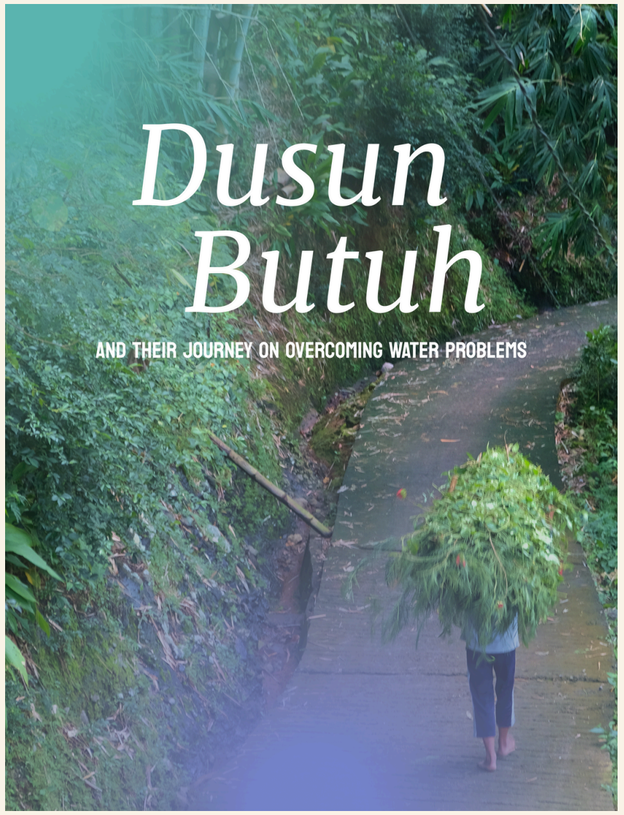
Collaborating theory by implementate it

Applying the theories we have learnt

A work in progress

A Mini Magazine

A document to commemorate the hard work we put into this project



ENGAGING WITH THE COMMUNITY IS KEY

We went through a lot of discussions and negotiations to came up with the best solutions that will meet their needs. Plans we made were not sailing so smoothly. A lot were sacrificed, but it didn't stop us from reaching our initial goal of helping the residents of Dusun Butuh in conserving and managing their water.

What is really happening there?

Have we achieved what we desire?

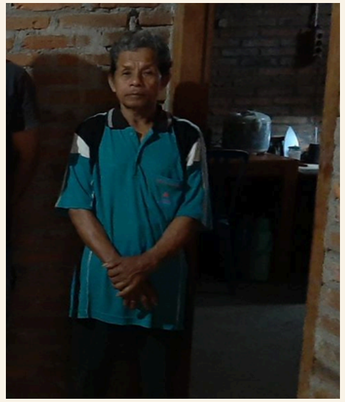
Let’s hear it from them.

Mr. Said (46)

“ Hopefully this project will become a reference for further projects, especially the problem of water scarcity in the hamlet needs to be completely resolved.”

Mr. Sudarto (51)

“ This project has been very helpful for us, especially in overcoming the problem of the mosque's water tank that we could not use for several years. ”



Mr. Sumarno (58)

“I am grateful for this project, I hope that the upgraded water tank can store water reserves during the dry season that may occur. “

Mr. Kobul (33)

“This project is expected to be a motivation for the younger generation and for the wider community to know more about Dusun Butuh.”

KEMUJAN WATER GROUP

from Indonesia

“ As a youth, we are greateful to participate in this project, we learned about their difficulity, how to communicate with a total stranger, how to persuade them, how to make their dreams happen. We have a greatest hope that starting from this time, Butuh People can be more ready to face the next dry season.”

“New Day, New Hopes”

-KWG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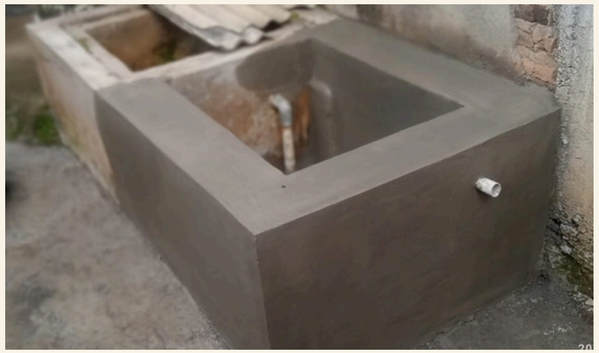


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