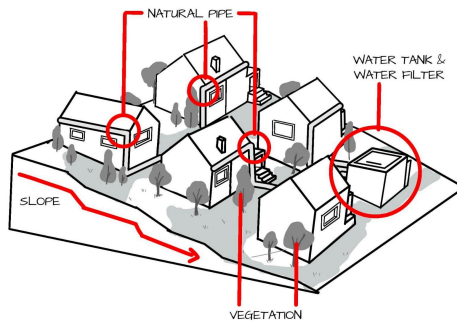


UNESCO Water Resilience Challenge 2023

Rainwater Catching to Achieve Water Resiliency in Dusun Butuh

Dusun Butuh Wetan, Magelang Regency, Indonesia



Proposal by

Kemujan Water Group

Maylafansa Mahayuni

Nareswari Dahayu Nathaniela

Raden Mas Pranavaditya Ravi Widyadhana

Samuel Batara Yudha Siahaan

PROPOSAL FRAMEWORK

I. THE BIG IDEA

1. Project Background and Context

- Dusun Butuh sits on the hillside of Menoreh mountain range, part of Merapi-Merbabu-Menoreh Biosphere Reserves.
- Located not far from Borobudur Temple (7 kilometers away)



2. Study Location Problem

- Dusun Butuh has a hilly terrain that makes it isolated and hard to access.
- This condition affected Dusun Butuh in overcoming a water crisis during 2023's long dry season. Residents of Dusun Butuh, 56 families to be exact, were and predicted to have another hard time accessing clean water for household needs in the upcoming dry season.

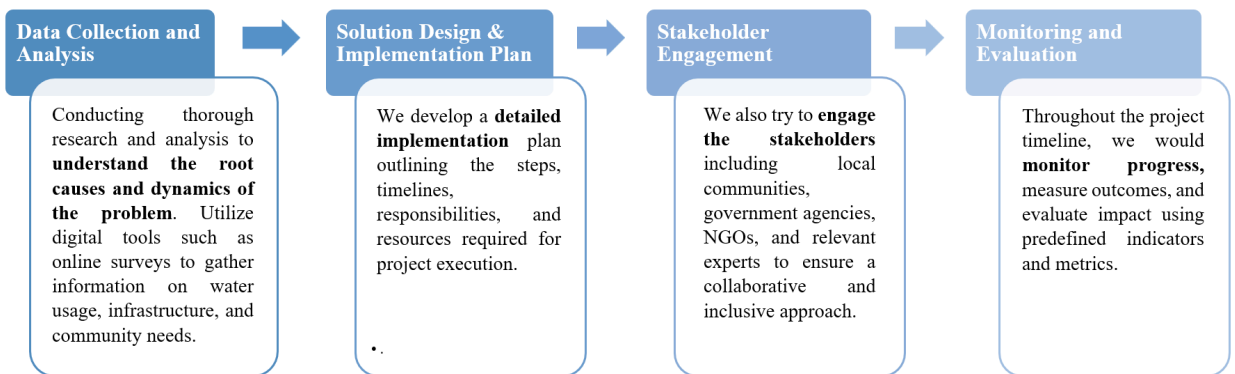
3. Project Objectives

Enabling Dusun Butuh residents to be aware of alternative ways of water collection. Especially, ensuring the village of water resiliency in facing another dry season by saving & utilizing the accumulated rainwater droplets. We aim to assist Dusun Butuh in achieving these goals:

- 56 families' daily clean water need are fulfilled, especially during the dry season
- Accumulate 3.000-10.000 liters worth of rainwater every rainfall, to which be stored and used when supply is scarce.
- Survive a water crisis during the upcoming dry season with water supplied from the rainwater harvesting system.

4. Project Approach and Methods

Our project adopts a comprehensive approach to address the problem, employing a combination of strategies and methods:



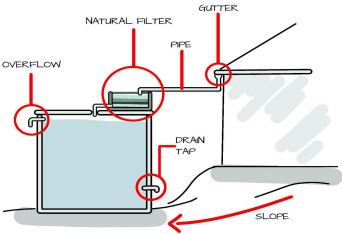
5. Project Impacts

- Up to **3.000 liters** of water can be collected and stored in one communal water tank every rainy day. **10.000** liters of accumulated water can be collected before the expected dry season
- 56 families will independently sustain their own water supply and demand.
- Clean water needs are fulfilled and suitable for consumption.

II. THE PILOT

1. The Pilot Project : The Rainwater Catching

Rainwater Catching is a solution for drought that works by collecting rainwater droplets from the roof and then transferring it to a natural made tank, utilizing gravity, no electronic pump is needed for operating.

<p>Rainwater Catching is made from 3 main parts</p>	 <p>Size : 2 x 5 x 1 m3 [10,000 liters of water in one tank.]</p>
<p>The Catchment (Pipe)</p>	<p>Natural & Local Bamboo made pipe that is low cost & has a lot of availability</p>
<p>The Storage</p>	<p>Non - Plastic Water Tank that is made from local product and its locally build</p>
<p>The Filter</p>	<p>Water is filtered naturally, that will be made from local</p>

2. Pilot Project Timeline

Here is an overview of the pilot project timeline:

- **Week 1** : Planning, Preparing, Final Design (1st Week of March)
- **Week 2** : Program Socialization (2nd Week of March)
- **Week 3** : Main Construction (3rd Week of March)
- **Week 4** : Construction Finishing & Environmental Recovery Planning (4th Week of March)
- **Week 5** : Project Evaluation & Environmental Recovery Execution (1st Week of April)
- **Week 6** : Evaluation Implementation (2nd Week of April)

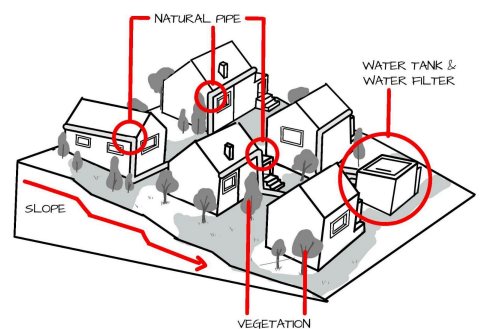
3. Stakeholder Mapping

The pilot project will be initiated for **families with the most family members or the highest water demand**, but importantly **families who live right next to each other**. Beforehand, we would propose this pilot project to the **village chief** to gain their approval. We would also need the assistance of the **village youth (Karang Taruna)** in the construction of the pilot project. Not only that, we would like to make a campaign and socialize it through the help of the village youth. We plan to make the socialization and training session to be interactive by utilizing digital props that we will provide.

4. Budget Plan

Details & Plotting on which day will the money be used is explained on the page 3 table

- Cost for site visit and engagement (215 \$)
 - On Site Visit spendings : \$85
 - Program Socialization : \$80
 - Program Evaluation & Re - Implementation : \$50
- Cost to build (including materials) and implement the pilot project (785 \$)
 - Natural Pipe (Bamboo) : \$0 (utilizing local supply within the village)
 - But the main bamboo environment must be rehabilitated after we take it, so it cost around \$85 for the whole project
 - Pipe Construction : \$150
 - Water Tank & Filter
 - Water Tank (Not using the Plastic Tank one) : 400 \$ for 1 community (3 houses)
 - Water Filter : 115\$
- Locals Severance Payment : \$35



Budget and Timeline Overview for 3 - 5 Houses

Proposal - Semi Detail Activity Planning - Pilot Project Timeline (2.2) & Budgeting (2.4)		Days Spent	Component (Do - Er)	Budgeting (\$)	Weekly Budget (\$)
Week 1	First - time Field Survey, Preparing, Final Design	7			
1.1	Stakeholder - government approaching & final design communication	3	Team	10	55
1.2	Do a small survey to know Field conditions	3	Team	35	
1.3	Preparing : Approaching The Chief Village & the locals, explaining what will we do	1	Team & Stakeholder	10	
Week 2	Program Socialization	7			
2.1	Preparing the place for the event	1	Youth & Team	20	70
2.2	Preparing the socialization - Final Communication with local government.	1	Team	20	
2.3	Explain to the locals of what will we do and what they can do (Main Socialization)	5	Team & Stakeholder	30	
Week 3	Main Construction	7			
3.1	Deciding which and how many houses are compatible for our test, by communicating with locals	2	Team	5	670
3.2	Housing pipe construction	5	All Elements Involved	150	
3.3	Water Tank & Filter Construction (Including slope adjustment)			515	
Week 4	Construction Finishing & Environmental Recovery Planning	7			
4.1	Construction Finishing (All equipments)	4	Locals & Stakeholder	25	60
4.2	Water Tank & Water Filter trial	2	All Elements involved	20	
4.3	Planning : Which plant to grow for the environmental recovery	1	Teams Locals & Stakeholders	15	
Week 5	Project Evaluation & Environmental Recovery Execution	7			
5.1	Re - plant the bamboo - planting a new tree that doesn't absorb water	5	Locals & Stakeholders	85	95
5.2	Detailed evaluation of emerging issues	1	Team	5	
5.3	Solution Brainstorming & Fixation	1	Team	5	
Week 6	Evaluation Implementation	7			
6.1	Maintenance Implementation	4	Locals & Stakeholder	15	50
6.2	Community satisfaction survey	2	Locals & Team	30	
6.3	Larger Scaling Project consideration	1	Team	5	
Total Budget				\$ 1000	

Conclusion & Closing Statement :

By reading this proposal, we hope that readers are more inspired to solve the best option for overcoming water problems with the detailed way of thinking and by the end getting the best solution for those who are in need.