

SAFEGUARDING HEALTH, SUSTAINING LIVES

WATER **6** CHALLENGE

Team: AquaCleanse from Cambodia









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Case Study Location

Main Beneficiary

Problem Statements

Possible or Potential Solutions

The Most Feasible Solution





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LOCATION

We have selected Tonle Sap in Cambodia because:

It is home to most floating villages in Cambodia.

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It is a Biosphere Reserve which experiences high death rate cause by infectious diseases.





Main Beneficiary

 Household living in the floating village with low and medium income that hard to can't access clean water for daily usage.



80000 People

Live in a poor condition with lack of safe water in floating village Tonle Sap.

Floating Villager





Villagers use the water from the lake for their daily chores: washing clothes or dishes, bathing, and cleaning. With no public sewage system, people must also rely on the lake as a toilet and garbage dump. Access to clean drinking water is scarce and people have to buy it from merchants.

Problem Statement

The lack of access to a safe water supply for floating villagers in Tonle Sap Cambodia



Our Objectives

- Prevention of Waterborne Diseases
- Safeguarding Human Health and Promoted Economic Productivity

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OUR SOLUTION

AquaCleanse utilizes solar energy to power its Reverse Osmosis System and UV sterilizer, offering a sustainable and cost-effective water purification solution. By effectively removing contaminants, it ensures a safer water supply, potentially improving community health.



Solution Comparison

| SOLUTION | Easily accessible | Cost efficient | Mobility |
|-----------------------------|----------------------|-------------------|----------|
| Solar Water Purification | | | |
| Clean Water Station | | | |
| Biosand filter | | | |



Product's Strength



Easily accessible for consumers

AquaCleanse allows for easy installation and adaptation at the point of use, making it accessible for individual households.



Eco-friendly and Cost-Efficiency

AquaClease, which harnessing energy from the sun, making it both environmentally friendly and cost-effective for sustained operation



Standard Quality Water

A highly effective water purification method, which removes small particles and unwanted substances, allowing it to deliver highquality water.



Community health guarantee

Thorough purification process addresses health concerns related to waterborne diseases, making it a comprehensive solution for communities seeking to improve their well-being.

Product's Main Component







DC Motor Pump







AQUACLEANSE CAMBODIA

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SAFEGUARDING HEALTH, SUSTAINING LIVES

THANK YOU

AQUACLEANSE CAMBODIA: LIGHTING THE PATH TO PURE WATER WITH SUSTANIABLE ENERGY













H20 MATTERS: A DROP IN THE TONLE SAP

SARETH NATALICE, VIN HELLAN, SONG RITHYKUN, YUNGAN WU, Lim Meyching, Heng Pich Solida, Sok Nancy, Than Vichea

ABSTRACT

Water is an important constituent of the life support system. Without water, no one can survive or even imagine doing so. Nonetheless, one of the greatest ecological concerns we currently face is water pollution. When toxic chemicals enter the water like rivers and seas, making the water's quality suffers as a result. Hence, by describing the water pollution in the areas, methodology, and purpose, this study gives a few of the survey's findings from the Chong Kneas survey of the Tonle Sap River. By locating the sources of contamination, providing testing procedures, and applying the results, it demonstrates how the use of chemicals and pesticides in agriculture has impacted the water quality.

OBJECTIVES/AIMS

This research purpose is to understand the effect of water pollution, including the behaviors that lead to it, and how people in the area use the water. We also want to know what the effects of the water on the locals' daily lives are. Our goal is to test the quality of the water in Chong Kneas Floating Village to gain a deeper insight about the substances of water contamination. The substances include Nitrate, Nitrite, Phosphate, Ammonia, Coliform etc, which are in fact beneficial to the agriculture growing along the lake yet at the same time, these are the main sources of getting water in the area polluted. It's also necessary to understand the importance of good quality drinking of water as it's crucial to our health. Although, the quality of water doesn't seem like a big deal today, it will ultimately grow into a big issue in the near future if being neglected.

RESULT AND DATA FINDING

NOTE: Tempurature = 33.5° C, TDS = 128 mg/L

| CHEMICAL SUBSTANCES | STANDARD PARAMETERS | DATA COLLECTE RESULT |
|------------------------|------------------------|-------------------------|
| NITRITE | >1MG/L IS HARMFUL | Omg/l = IDEAL |
| NITRATE | >10mg/l is harmful | 10.1MG/L = CONCE |
| Orthophospha te | >0.18mg/l is harmful | 0.3MG/L = CONCE |
| AMMONIA | >24mg/l is harmful | OMG/L = IDEAL |
| COLIFORM | PRESENT | PRESENT = POSITI |
| ΡΗ | Below 3.5 and above 11 | 7.46 = IDEAL |
| TURBIDITY | >75NTU | 239NTU = CONCERN |

*This indicates that the quality of water is to be considered before consuming.





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<u>Data Analysis:</u> Out of 7 substances/chemicals being tested, 3 are of Ideal, which means safe and another 4 are Bad and of Concern.

According to our study shows that:

- For Fish: Algae living aquarium to live in: it is safe for them but in the future if there's high contamination, there will be hugely damage as well.
- For Human: The water is poison and poor quality water which is such a big warning that people need to aware of.



SCAN ME

REFERENCES

METHODOLOGY



(2)

COLLECTING WATER SAMPLE FROM THE EXPERIMENT SITES (CHONG KNES FLOATING VILLAGE)

TESTING WATER USING SMART METERS: TO TEST THE AMOUNT OF SUBSTANCES AND EASIER TO ANALYZE THE WATER QUALITY.



MWATER APP: THIS APPS HELPS TO RECORD DATA. LASTLY, INTERVIEW WITH ENVIRONMENT OFFICERS

Timeline



Monitoring & Evaluations

2025(Q4)

Collect data on water quality improvements and health outcomes. Conduct surveys and interviews with users to assess impact.

Innovate and Improve

Based on feedback and performance evaluation, innovate and improve current product.

Marketing & Sales

Scale up the workshops to reach a larger number of participants. Provide incentives for referral programs.

Expand Target Market





Better Understanding and Knowledge about the use of water: Adopt better living behavior and increase **Environmental Conservation:** community resilience to water-related Reducing the carbon footprint and challenges, including natural disasters and promoting environmental conservation. emergencies. **Knowledge Transfer:** Participants can share their acquired knowledge and skills with others, leading Long-term Impacts to the replication of water purification practices in neighboring communities, further expanding the impact. **Economic Opportunities: Sustainable Solutions:** Promoting local entrepreneurship, job Provides sustainable and environmentally creation, and income generation in areas friendly solutions, reducing dependency on related to water purification. traditional energy sources and costly purification methods.

Sustainable Development: Aligns with the SDG Goals:

- Goal 3: Good Health and Well-being
- Goal 6: Clean Water and Sanitation
- Goal 7: Affordable and Clean energy
- Goal 11: Sustainable Cities and Communities



Enhanced Public Health:

Reduction in waterborne diseases and improved overall public health outcomes.

BEFORE AND AFTER PURCHASING AQUACLEANSE

BEFORE

- Limited drinking water
- Higher illness rates
- Time Consuming
- Economic Burden

- Reliable Access to Clean Water
- Health Improvements
- Time Efficiency
- Cost Savings
- Technological Convenience

AFTER