

Rapid Rural Appraisal

Water Needs

Analysis Report



**FAIRFIELD METHODIST SCHOOL
(SECONDARY)**

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Introduction to Rapid Rural Appraisal

What is Rapid Rural Appraisal?

A new approach implemented rotary club to access the needs of the poor. This approach involves going on the ground and interviewing locals to find out what they really need.

How is this better than other approaches?

This gives locals the opportunity to tell us what they really need. This allows to serve as communication channel between the locals and large charitable organizations like the rotary club. This also bypasses the government so that corrupt may not take advantage of charity.

Our Objectives (Water group RRA)

To make a positive change in the problem regarding Sarsadam's shortage of clean water in co-ordination with Rotary club who will look into our suggested solutions to the problem.

Importance of Water

The villagers in Sarsadam usually gather their water from the wells. When it is the dry season, the villagers would go to the Srah Srang lake to collect water. Some gather water from the wells situated around the village.

Thus during the dry season, some wells may be dried up and this will result in many villagers not having enough water after their water vases dried up. As we need at least 50 litres of water for basic human needs like consumption, washing, cooking, cleaning and general cleanliness processes in our lives. 25 litres is not enough.

Another problem is the purity of the water that they consume. Singapore has an efficient and well-implemented water system. However in Cambodia, a 3rd world country, their water system has not been applied in all parts of the country. For example, the hostel we stayed in had water but unlike Singapore, where it was possible to drink straight from the tap, our teachers told us to only drink water from the mineral water bottles they gave us. The water from the tap tasted metallic and was cloudy. In addition, only 30% of Cambodians have access to this kind of clean drinking water. 55 countries around the world do not have enough.

Singapore has access to clean drink cleaning water all around the island. This comparison clearly shows the poor water condition of Cambodia. With this data, we set out to solve this eminent problem.

Water Status of Sarsadam

How do the villagers get water?












Wet season: Water is aplenty during the wet season, and villagers take baths and store water in their vats during this period. Malaria and Hepatitis A are rampant during this hot and humid period, as the diseases are spread by dirty water and mosquitoes, both of which are common during wet seasons.



Dry season: The primary water source of the Sarsadam villagers are the few wells and vats that the villagers have. Some NGOs (non-government aided organizations) have built water pumps to help the villagers get water that is more accessible and nearer to their wooden huts.

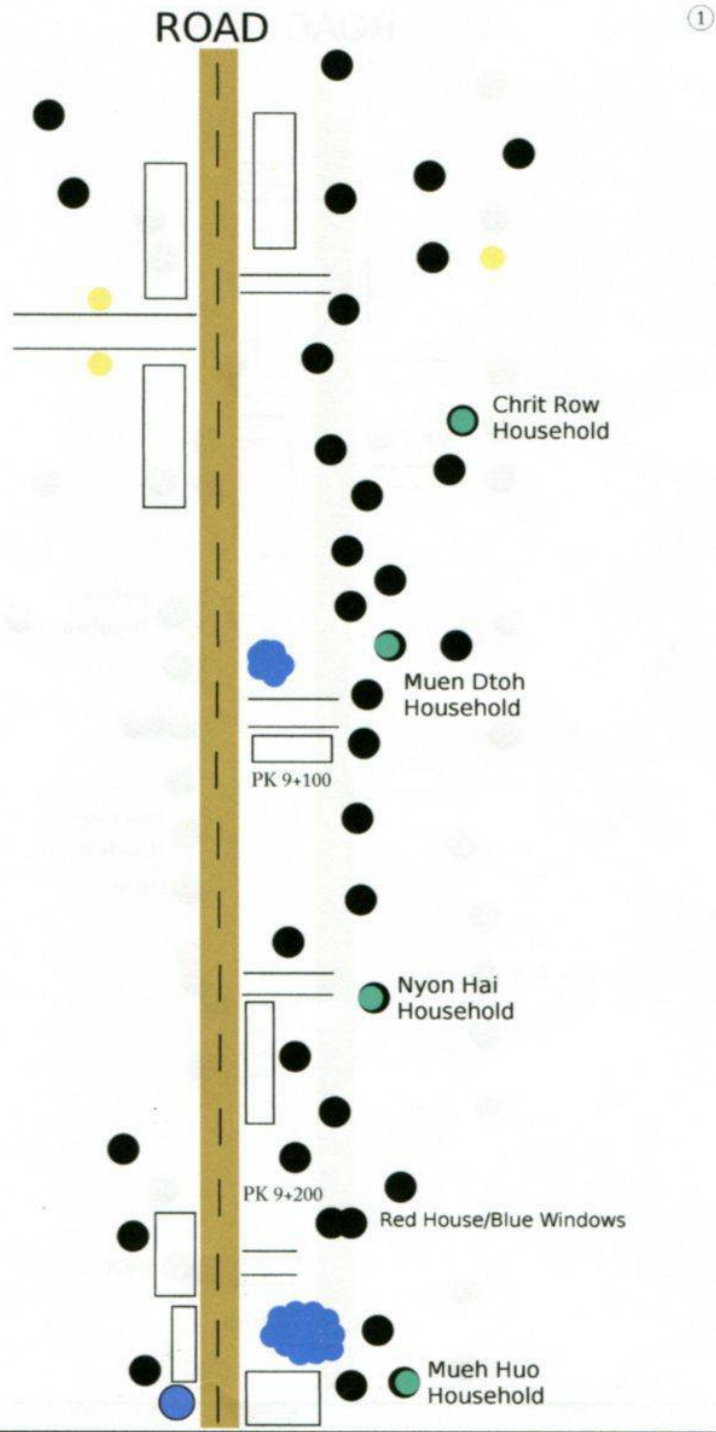
However, villagers complain about undrinkable soapy water coming out of the pumps and the pumps getting rusty and hard to pump.

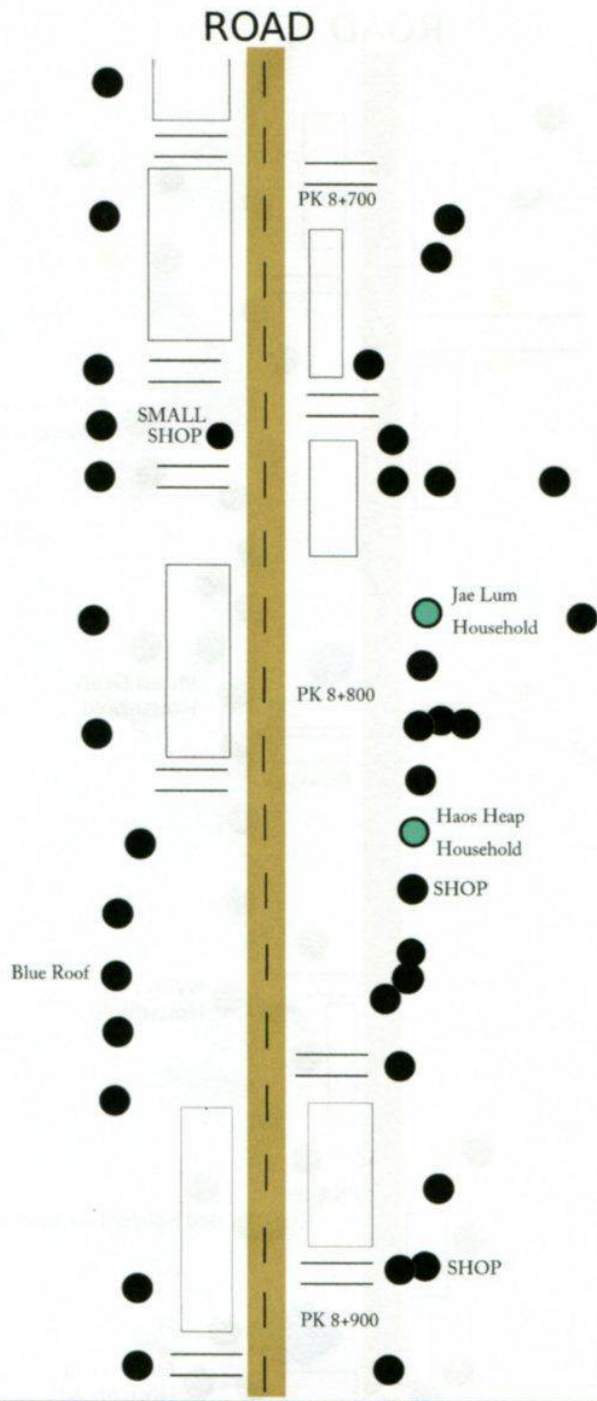
Biomapping of Sarsadam Village

- Road 
- House 
- House (large/cluster) 
- Water Source  or 
- Visited/Interviewed House 
- Trench/Water channel 
- Road markings PK 9+100 
- Bridge 
- Shrine/Altar 
- Page Number 

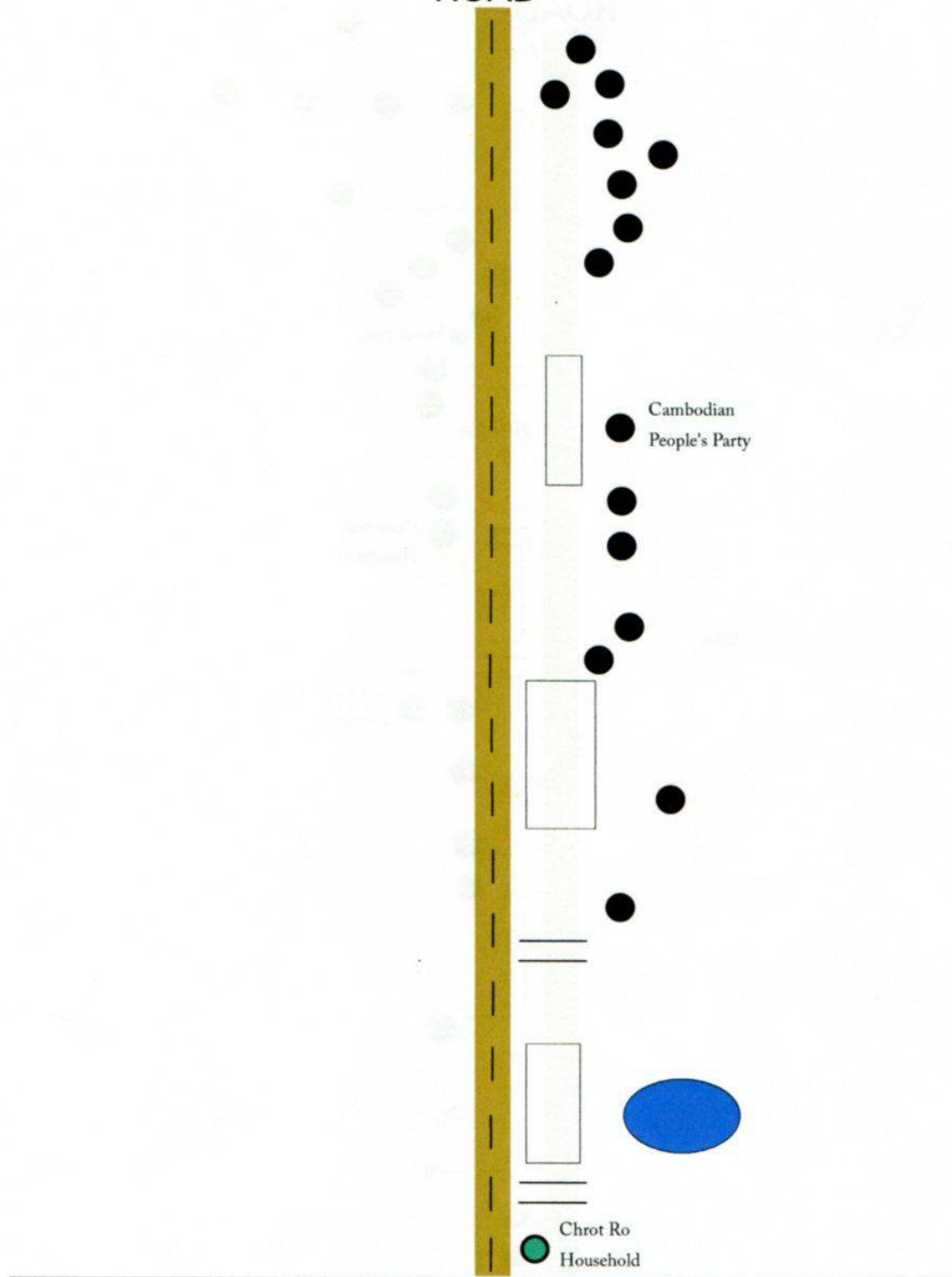


This is the legend for the bio-map.





ROAD



Conclusion

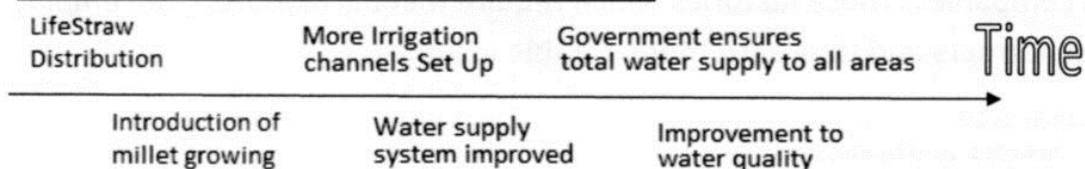
Chosen Solution:

Water filtration distribution

We chose this solution as it gave us the most flexibility and improvement in the villagers' lives. This can be easily maintained until a better solution is found or Cambodia builds a more efficient water supply system.

We thus hope that this can be implemented soon, and help the villagers to live safer, healthier lives.

Proposed Order of Implementation



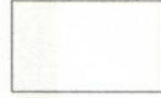
Main Aim:

Pure and clean drinking water for WHOLE of Cambodia.

In our efforts, we sincerely hope that these implementations and suggests we have offers can be of good use and one day, Cambodia will have enough clean and safe drinking water.

ROAD

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Water Pump



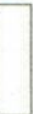
PK 8+200



Chun Nub Household



Her Ern Household



PK 8+400

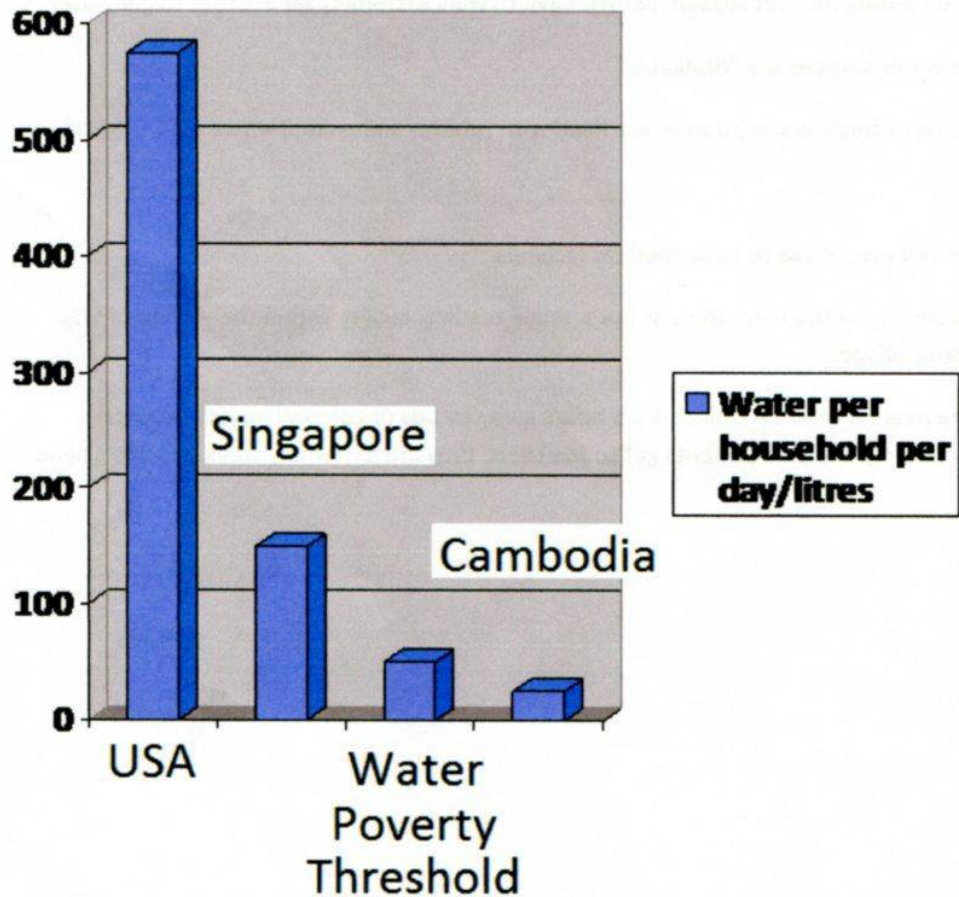
Our observations

Problems

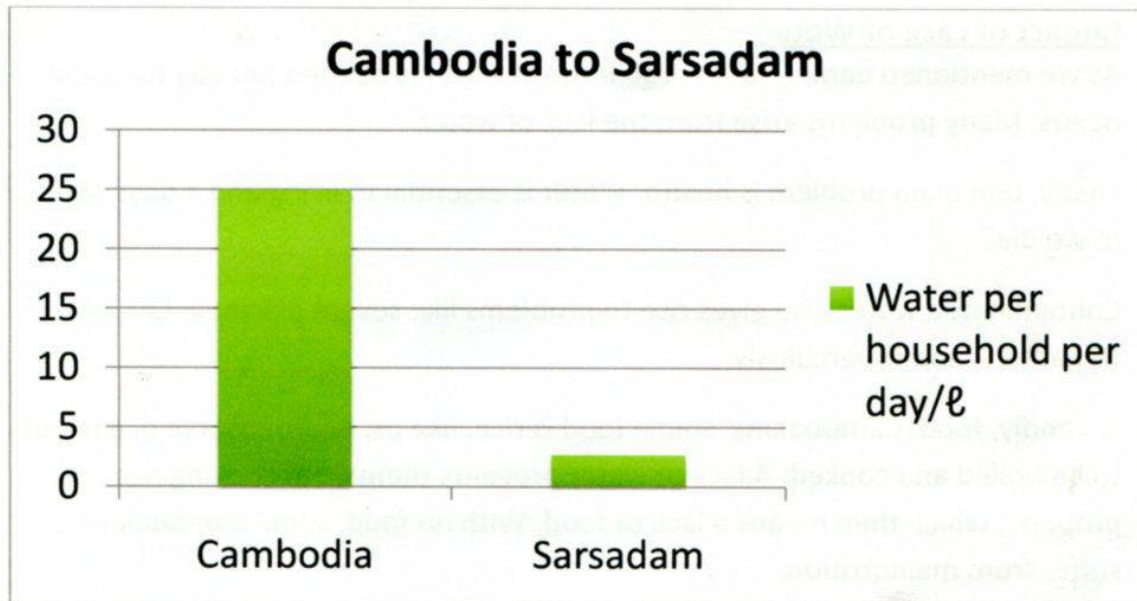
- Wells and houses are far apart
 - Even during the wet season, people have to walk extremely far in order to get water.
- Not all the water sources are “drinkable”
 - Some of these water sources are filled with rubbish and animal waste
- Houses are not even close to basic medical facilities
 - As shown on the map, there is not a single medical facility within the vicinity of Srah Srang village.
 - The nearest medical facility is 1.5 hours away by bus or car, and about 7 hours by bicycle. By the time patients get to the clinic, they are extremely weak or worse, dead.

Our Findings

According to our interviews, 38% of villagers get injured or dehydrated while collecting water. Sarsadam is approximately 5km away from the nearest polyclinic and at least 45 minute journey to the city, where they travel to sell their produce during the wet season.



The water poverty threshold is the minimum amount of water needed per household according to a United Nations Water Study on the water status of various countries. Cambodia is below the average at 25 litres per household, and the severity of this is that Cambodia as a whole cannot properly operate with insufficient water for the people's daily needs.



The first chart shows the comparison of Cambodia to Sarsadam itself.

50 litres of water is needed a day.

Cambodians get 25 litres a day.

Sarsadam villagers get 2.7 litres a day.

That is not enough to even replenish the water that we lose through perspiration!

This highlights their urgent need for more water.

Impact of Lack of Water

As we mentioned earlier, at least 50 litres of water is needed per day for BASIC needs. Many problems arise from the lack of water.

Firstly, one main problem is health. Water is essential to living and 3 days without it, we die.

Contaminated water also gives rise to problems like severe diarrhea, Cholera, Hepatitis A and tuberculosis.

Secondly, food. Cambodians' staple food is rice, like us. And of course rice needs to be boiled and cooked. A lack of water prevents them from cooking rice properly, which then means a lack of food. With no food, some Cambodians suffer from malnutrition.

Thirdly, this causes the loss of income. As the primary job of these villagers is farming, without water, their crops will die.

Lastly, it causes a lack of education. Health issues cripple the younger generation and thus prevent them from going to school. Malnutrition also affects their ability to travel to school and thus are unable to learn. Parents also keep the children from school to help in the farming of rice due to lack of helping hands during monsoon seasons.

Current Solutions and limitations

- 250l water vats are provided to the families by another NGO (Non-government organization).
 - Advantage: These vats store water during the dry season and thus give the villagers another source of water if the wells dry up.
 - Limitation: The water provided by the vats is not enough to last the farmers all 6 months of the dry season
 - Vats are not very efficient in storing water as a large amount of water is lost via evaporation in the hot Cambodian weather
- An irrigation system is in progress to provide water to the farmers even during wet season.
 - Advantage: A long term solution that allows farmers to carry out agricultural production during the dry season.
 - Also ensures a constant supply of water for farmers.
 - Limitation: This system will only be up in years to come
 - Temporary solutions need to be implemented to help the farmers last until the irrigation system is up.

Proposed Solutions

Each house hold can be given cheap water filters. These filters (the LifeStraw) cost US\$5 and are easily distributable and usable to all villagers

Evaluation: 8/10

Cost: US\$500 for entire village per year

Effectiveness: 4/5

Ease of implementation: 4/5

Why this evaluation?

This is a cheap solution that should be able to last until the irrigation system is up which will ensure farmers with a constant supply of water for the years to come.

Mass supply of affordable water sterilization pills.

It costs 50 cents to sterilize their water everyday. This amounts to US\$182.5 to sterilize a household's water everyday for a year. With about 100 households in Sarsadam village, US\$18250 is needed to sterilize the entire village's water supply for a year.

Evaluation: 5/10

Cost: US\$18250 for entire village

Effectiveness: 4.5/5

Ease of implementation: 4/5

Why this evaluation?

It is an extremely effective solution. However, this solution is an extremely expensive and cost-inefficient choice. Thus in order to save money for the Rotary Club to help other needy countries, our group has voted against this proposed solution.

Proposed solutions (2)

Install plastic covers for the water vats. This will prevent evaporation of taking place and thus save more water in the vats to use.

Evaluation: 7/10

Cost: Estimated US\$700

Effectiveness: 3/5

Ease of implementation: 4/5

Why this evaluation?

Our group feels that this solution should be implemented in conjunction with or after the filtration solution aforementioned. This will ensure that the current meagre supply of water can be used efficiently and effectively until the irrigation system is set up.

Attract foreign investors. One of Cambodia's main resources is its land mass. Foreign investors can buy this land(at cheaper prices) and set up factories and companies. These factories which require manual labourers can employ these farmers and thus earn them a stable income.

Evaluation: 6/10

Cost: Unlimited, paid by investors.

Effectiveness: 5/5

Ease of implementation: 1/5

Why this evaluation?

We feel that this is another suitable long term solution. It should be implemented only after Sarsadam village is relatively stable in terms of water and economic needs. Hence it cannot be implemented anytime soon.

Introduce dry crops to the Sarsadam villagers. The villagers will be able to have an income during the dry season, or for sustenance. With this, the dry season of 6 months will not be spent finding water or finding food, but growing crops to sustain the households with their new food source.

Evaluation: 8/10

Cost: \$2.40/m²

Effectiveness: 4/5

Ease of implementation: 3/5

Why this evaluation?

We feel that this would enable the farmers to have an income during dry seasons, thus providing them the sustenance they need till the wet season, where they plant rice instead. Therefore this solution is implementable in the near future.

Conclusion

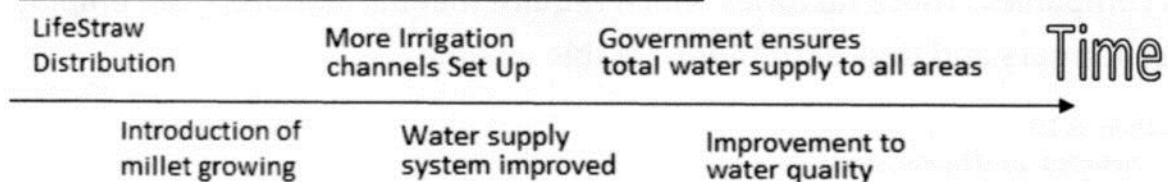
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Proposed Order of Implementation



Main Aim:

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Reflections

As the water group, we believed that there is no problem that cannot be solved. All it requires is an effort by everyone to help those in need. We have so much more than these unfortunate people and yet many people refuse help them.

Many Cambodians have been dying from water borne diseases and we can change that. Our solutions are feasible and not outrageously expensive. In fact, it is the opposite of that. Our solutions are affordable even for minor charitable organizations much less a well established organization like Rotary Club.

We believe that everyone deserves help when they are in need. All of us can do our part to help save fellow humans because they deserve the lives that we have even more than we do.

Credits and source

Dehydration information

<http://www.getoutzine.com/node/491>

Water status

<http://www.data360.org/dsg.aspx?Data Set Group Id=757>

Basic information about Cambodia

<https://www.cia.gov/library/publications/the-world-factbook/geos/cb.html>

Photos

Google and Matthew Woo (our resident photographer)