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Project “Thuk Tuk”

Capsule Hack 2020
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Hello!

Project Thuk Tuk aims to tackle the water crisis and plastic waste in our native country, Cambodia, by introducing “water stations” that can both dispense clean drinkable water and collect returned plastic bottle waste.

We aim to solve 3 problems.



Reduce the amount of plastic pollution in Cambodia.



Provide accessible clean, drinkable water.




Educate and raise awareness around the climate crisis.

THUK
TUK

“Thuk” is “water” pronounced in Cambodian and “Tuk” derives from the term, “tuk-tuk”, which is a portable motorized cycle-vehicle popularly known in Southeast Asia.

Together, it depicts “water on wheels”, which plays on EcoEap’s vision of travelling to bring water stations to schools and communities across Asia.

A photograph of a residential area in Cambodia. In the foreground, there is a large, sprawling pile of plastic waste, including many yellow and blue plastic containers and other debris. The background shows several buildings, including a prominent multi-story orange building with a balcony, and other houses with blue and red roofs. The sky is overcast and grey.

From kh.undp.org
Combating Plastic Pollution in Cambodia

“Globally, plastic waste generation has soared to unimaginable levels. To date, we have generated 8.3 billion metric tonnes of waste, and we are expected to reach a total volume of 12 billion tonnes by 2050.

In Cambodia, the plastic waste problem is complex; however, as one of the most vulnerable countries to climate change, finding a solution is a necessity.”



Our Mission



More than **3 million** people in Cambodia lack access to safe water, and 6 million lack access to improved sanitation.

With approximately **77% of Cambodians** living in rural areas, poor access to safe water and sanitation disproportionately affects its rural communities.



In a third world country like Cambodia, **purchasing bottled water** is the universal trust for clean water because it is the easiest and cheapest drinking method. Project Thuk Tuk aims to be the alternative to that by educating and raising awareness, becoming an advocate to reduce plastic waste.

However, the purchasing of bottled water continues to contribute to the ongoing plastic waste and Cambodia has no formal strict recycling system, resulting in excessive plastic pollution and garbage being burned out in the open.

An aerial photograph of a dense forest, likely a coniferous forest, with a road or path cutting through it. The trees are in various shades of green, and some appear to be dead or dormant. The text "Our Idea" is overlaid in the center of the image.

Our Idea



We hope to collect plastic water bottle waste by offering an incentive through a “rewards” program.

The idea is to install **interactive water stations** within schools and eventually across cities, which students can track, collect points and redeem for school supplies or swag, such as eco-friendly backpacks or notebooks.

EcoEap hopes to work with schools to include some sort of **educational program** revolving around the importance of sustainability, environment issues, climate crises and its impacts on their future.

We want to **engage the younger audience** with an interactive, fun learning experience. We hope these water stations will be a good addition to a regular “clean-up day” volunteer event — a feel-good reward for their involvement and efforts.

A person's hands are shown holding a vintage-style globe of the Earth. The globe is dark with light-colored map details, including labels for 'AMERICA', 'ATLANTIC OCEAN', and 'SOUTH PACIFIC OCEAN'. A compass rose is visible at the bottom of the globe. The person is wearing a dark red sleeve. The background is a soft-focus landscape of rolling hills under a bright, golden sunset sky. The overall mood is one of global vision and future planning.

Our Plan

Phase 1

Launch in Schools & Education

- Introduce an environmental educational program or course
- Install water stations in schools first for easier testing, research, security, monitoring, etc
- Collect returned plastic bottles and contact recycling companies to generate revenue

Step 1

Schools to host safe “clean-up” day events.

Students collect plastic water bottles to eventually insert into water station machines.

Step 2

Students “sign-in” to the implemented screen/tablet that will keep track of their reward points.

Step 3

For every plastic bottle inserted, the student gains X number of points that is logged into the system.

Step 4

When students reach their first, easy milestone they are gifted a **Thuk Tuk tagged reuseable water bottle**.

Step 5

This bottle will allow them to **re-fill** with clean, drinkable water for free at the water station on-site (and eventually other locations in the next phase roll-out).

Step 6

The station can scan, read and recognize the tagged reuseable water bottle to dispense X ml of fresh, clean water every X minutes.

Step 7

Students can continue to collect points to redeem for school supplies or swag, such as eco-friendly backpacks or notebooks.

Step 8

After a station is full of plastic bottle waste, we work with recycling companies to properly dispose of them.

Step 9

Throughout this whole process, data and statistics will be collected to further understand the success rate of this program in preparation for Phase 2.

Step 10

The goal is to release water stations citywide in public areas and launch a Thuk Tuk mobile app.

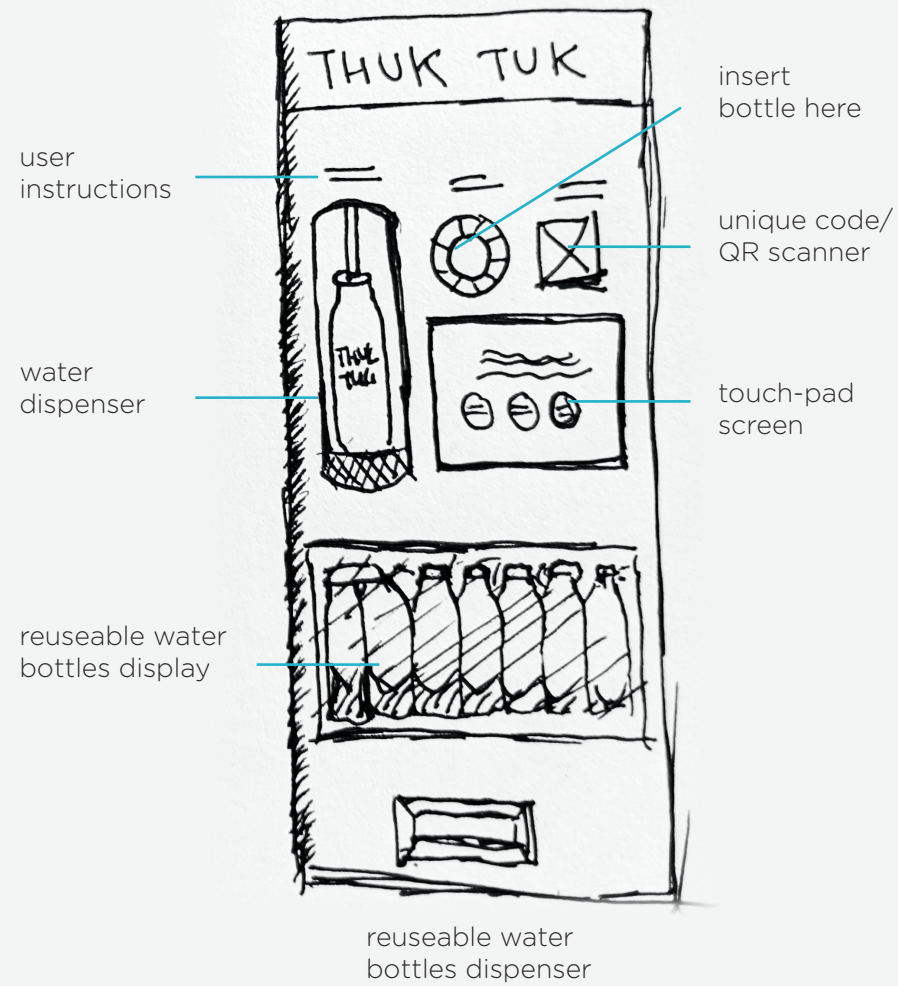
Step 11

Users are able to purchase a Thuk Tuk reusable bottle or **pay to re-fill** using their own at any water station (less than the cost of buying a plastic water bottle).

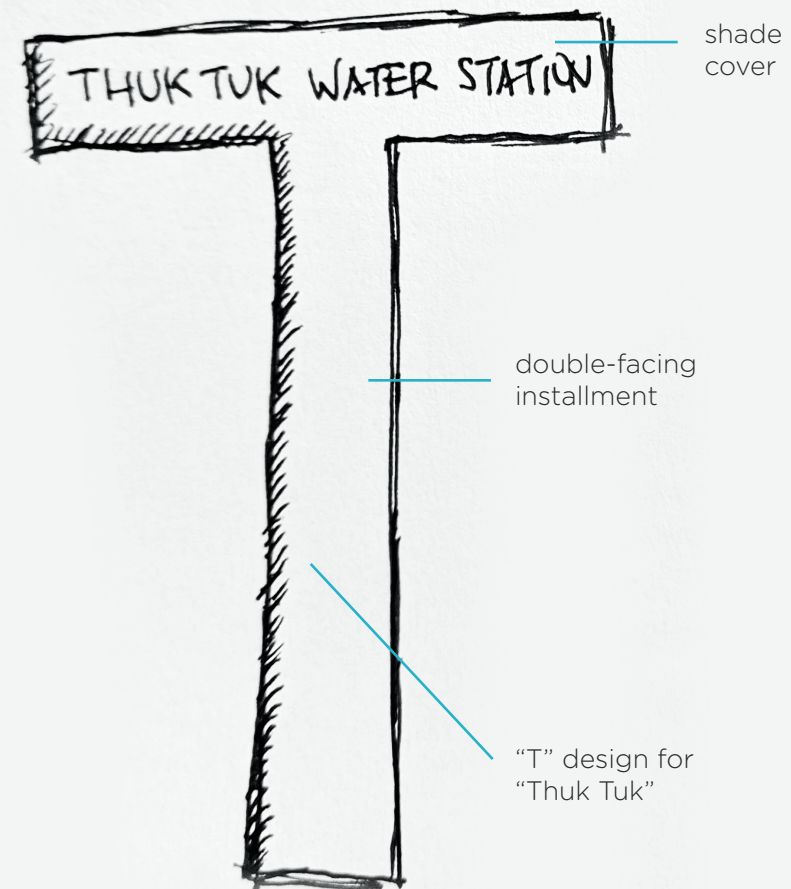
Step 12

On the mobile app, users are able to locate nearest water stations, keep track of their points and redeem, keep up with statistics, etc.

Front View



Side View



Database Collection Overview

Action	Water / Bottle Collection Stations		Users		Unique Reusable Bottles (RB)	
	Response	Links to:	Response	Data Collection	Response	Data Collection
Register Unique RB	N/A	Enters station's database	Assign's RB to User	Lists of Unique RB Codes for User	N/A	List RB's user
Scan RB at station	Begin timer of next refill for specific user	Links RB's code to User to store the timer data	Display time remaining time before next refill	Track scans from each station location	RB ID is pulled into Station	- Tracks Location - Tracks number of scans on bottle
Dispense x mL of water	Displays total water dispensed at the station	Pushes data of total water dispense to users and unique RB	Total water dispensed for the user	Transaction of each time water dispensed to user	Total water dispensed for the RB	Transaction of each time water dispensed to RB
Plastic Bottle Collection	Collects plastic bottle	Send number of bottles collected to user ID	Adds bottles and X rewards points to the users points balance	- Records transaction of date, time bottle type and station - Rewards user with X of reward points	N/A	N/A
			Calculates carbon offset from bottle recycled	- Shares user's offset recycled bottle	N/A	N/A
Accumulation of points	N/A	N/A	Unlocks the rewards at each level of points	- List of rewards	N/A	N/A

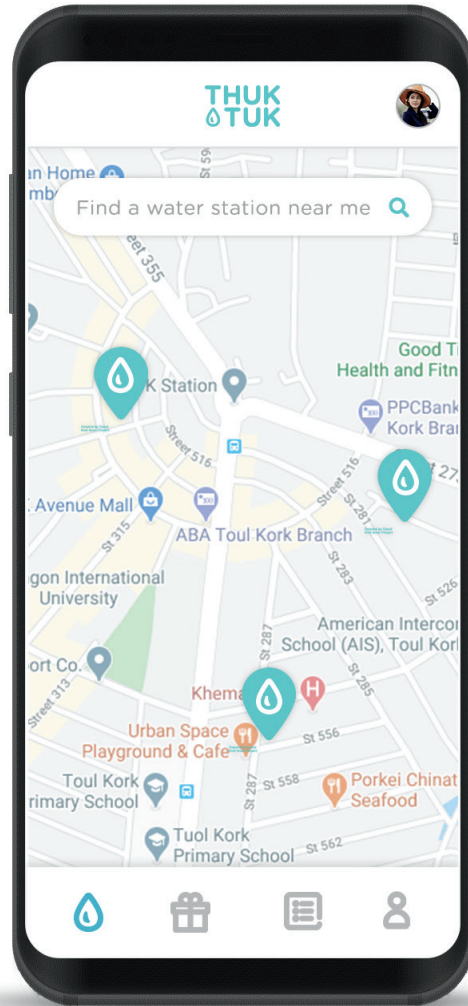
Phase 2

Citywide Roll-Out & Mobile App

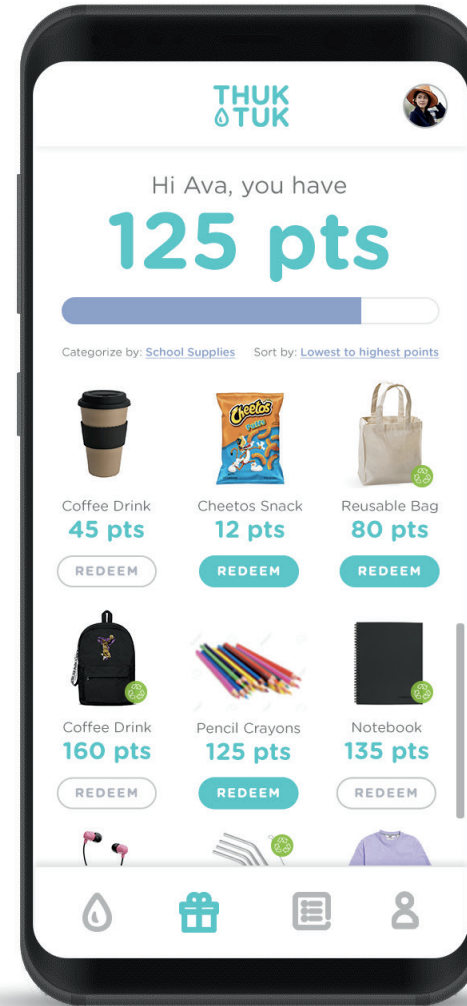
- Install Thuk Tuk water stations citywide in public known places, communities, or parks
- Development of a mobile app hub that can locate nearest water stations, users can track reward points, redeem, keep up to date with environmental events, be informed with news, etc



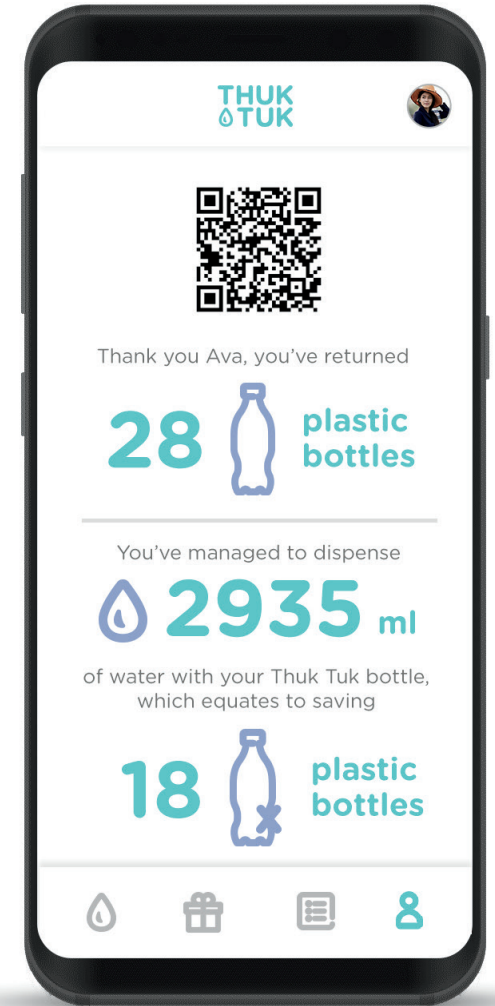
Users can log-in or sign up with their Facebook or email



Users can search and locate nearest water stations



Users can track their points and filter items to redeem by category or availability (eco-friendly products, items or food partnerships)



Users can access their barcode scan, see live up-to-date stats or usage based on their info

Phase 3

Worldwide Installations & Goals

- Install Thuk Tuk water stations in more third world countries
- Create ad awareness campaigns that borrow same mechanics (i.e. Return X number of bottles to rent this bicycle for free)
- Thuk Tuk reuseable bottles extension (Collectibles theme? Personalization design? City design?)
- Broaden spectrum of projects that are future-forward thinking (i.e. Ocean clean-ups, renewable energy, planting trees, etc.)





Our Vision

But we need your **help**.

EcoEap will need **resources and skills** to continue our project:

- *Mechanical/Technical engineers* to create the water station that provides clean drinkable water and accepts plastic (or potentially partner up with an existing)
- *Water specialists* in water quality, health and water filtration (as well as for future daily water check standards)
- *Programmers and developers* to create the mobile application
- *Local consultant* that understands the health and law regulations in Cambodia and the government
- *Business entrepreneur expert* to advise on future pitch presentations, finances and potential investors

The **Top Challenges** we face:

- Create Customer Discovery survey to determine customer's needs and expectations of water station
- Research Cambodia's health regulations and current tap water conditions
- Confirm Cambodian government's cooperation with Project Thuk Tuk
- Project revenues from sales of water and recycled bottles
- Determine estimated costs of water stations
- Propose partnerships with corporations or non-profit organizations
- Prepare slide deck with breakdown of revenue and costs to potential investors to receive pre-seed funding

Our Belief



EcoEap believes this is an all-encompassing project initiative that focuses on empowering the youth. We believe the younger generation will grow up to be the next leaders of change.

We want to spark that inspiration and teamwork desire to create positive impacts across the country. Motivating and inspiring them during this time is crucial to steering **Cambodia into a better direction** in regards to the climate crisis.

EcoEap is passionate in helping third world countries such as Cambodia, who may not have access to tools and education as much as North America. Our ethnic background is Cambodian and after doing a preliminary needs assessment during a trip back home, we felt a responsibility to try and help if we are privileged to do so.

We were deeply saddened to witness the amount of pollution that could cover and hide a beautiful country, and realizing how much tourism heavily relies on plastic bottled water. Furthermore, how many other countries are dealing with the same issue?

We are committed to actioning on climate crises, whether it is reducing pollution, providing clean water and affordable energy, offering sustainability ideas — or all.



Who We Are



Two girls just trying to make the
world a little **greener**.

(Website Coming Soon)
www.instagram.com/EcoEap
www.linkedin.com/company/42721607



Ryda Eap
Sustainability Consultant
www.linkedin.com/in/rydaeap



Vanida Lim
Graphic Designer
www.linkedin.com/in/vanidalim



Thank You