



INTERNATIONAL CHILDREN'S CARE CAMBODIA
PROJECT PROPOSAL — BOTTLED WATER
August 2016



ICC
INTERNATIONAL CHILDREN'S CARE
CAMBODIA

ICC Cambodia Project Proposal Overview

What is the need?

1. The last few years have brought a longer and drier dry season to Cambodia. As Light of Hope Children's Village (LOH) operates on fresh rainwater for household uses it has caused problems in the centre as this dry season has become more intense and longer in duration. Each home has a small tank attached which provides water for cooking and drinking. Once this water has been used and not replenished there is no source of clean water suitable for consumption. The last 3 years have seen the need to purchase drinking water for each of the houses in the last 3 months of the dry season, February to May. The provision of clean water used for drinking and the preparation of food needs to be a priority in our children's village.
2. The implementation of this project is two fold in that there is also the potential for an income-generating industry to bottle clean water and sell in existing markets with in ICC Cambodia projects. This simple industry would give ICC Cambodia another small step towards increased sustainability.

UNITED NATION'S SUSTAINABLE DEVELOPMENT GOAL 6:

Ensure access to water and sanitation for all.

SDG TARGETS:

- *By 2030, achieve universal and equitable access to safe and affordable drinking water for all*
- *Support and strengthen the participation of local communities in improving water and sanitation management*

What can be done to solve the problem?

1. The installation of a water filtration system in the LOH Children's Village will provide children living in the centre with a reliable source of clean drinking water throughout the year. Water will be sourced from the existing bore at Light of Hope but will be treated comprehensively with a system similar to those listed in Appendix A and B. Pre-liminary testing has been conducted on the underground water and it has been confirmed that the system selected would remove all impurities and bacteria (Appendix C). A water re-fill station would be available for residents in the village to refill water containers for use with in the homes.
2. Once the initial outlay is made to provide clean consumable water for all residents at LOH Children's Village it would only be a small outlay to convert this to a small income generating industry that would support sustainability in the centre.

What is the financial outlay to start this project?

The costs outlined below are the preferred option for installation at LOH Children's Village. This quote is from Splash which is an organisation operating in Cambodia that provides water filtration systems and follow up support. Although this is not the cheapest system that was quoted, the offer of installation and servicing for a 5 year period is appealing. As this is a new project for our centre and we don't have the expertise within our staff, this would be the wisest option.

<i>Item Description</i>	<i>Cost</i>
Water Filtration System – this system includes installation, servicing and parts and water testing pre and post installation	\$5,200
Drinking water packaging system – to bottle and label bottles for sale	\$1,950
Simple building – roof and cement slab to accommodate the filter and bottling system	\$1,170
Initial outlay for consumables – bottles, caps, labels and plastic wrap to start production	\$ 780
	<i>\$9,100 USD</i>

What is the potential financial return of this project?

Initial sales from the bottled water production would add to opportunities currently existing within LOH.

ICC Cambodia School Canteen: bottled water is currently sold at the school canteen an on average sales are around 300 bottles per day.

Teams visiting ICC Cambodia Projects: over the next 12 months ICC Cambodia have around 180 people visiting our projects on teams. Providing that water is adequately tested there is not reason why LOH cannot capitalize on this opportunity to provide bottled water for their use.

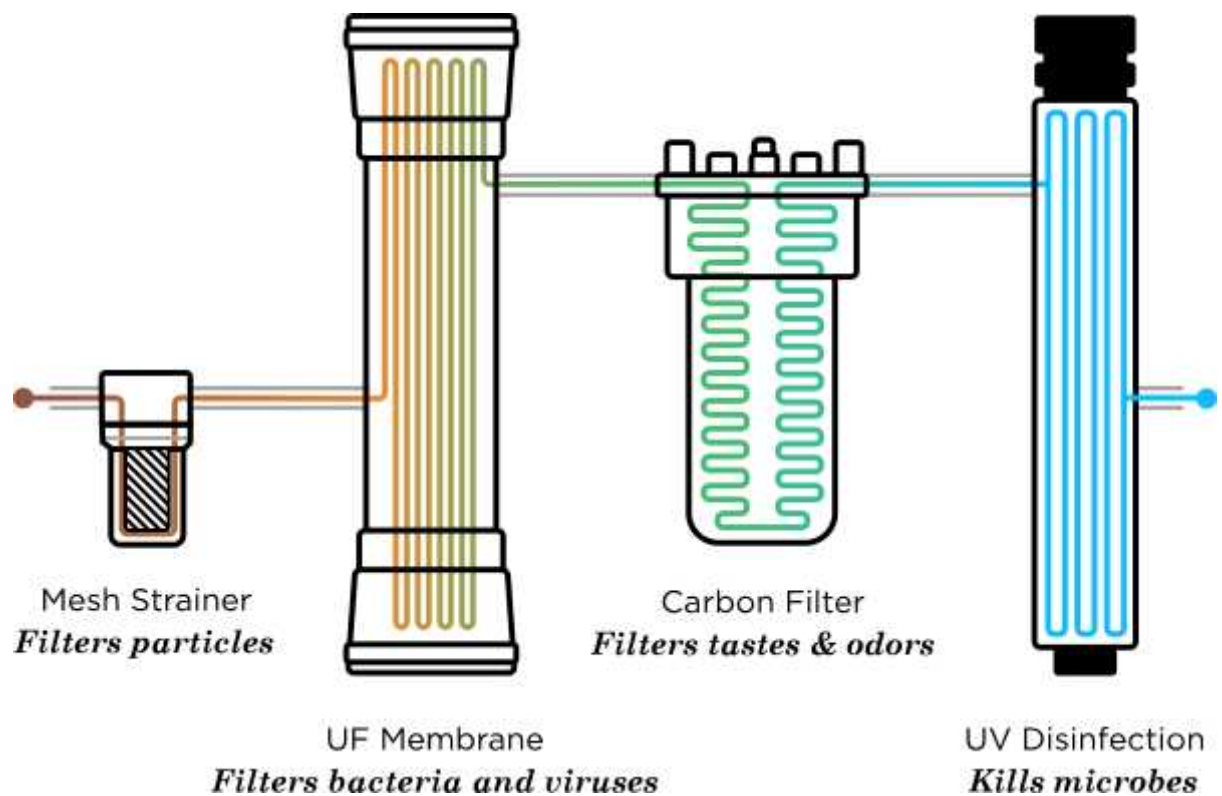
LOH current water needs: Although this would not be generated income, it would reduce our operating expenses involved in the provision of water for the children in our care

<i>Source of Income</i>	<i>Units Sold Annual</i>	<i>Total Income Annual</i>	<i>Total Expense Annual</i>	<i>Total Profit Annual</i>
ICC Cambodia School	60,000 bottles @ 7.5c	\$4,500	\$2,700	\$1,800
Cambodia Teams	13,440 bottles @12.5c	\$1,680	\$840	\$840
LOH current cost of Drinking Water	35,000L @\$1 per 20L	\$1,750	\$300	\$1,450
		<i>\$7,930</i>	<i>\$3,840</i>	<i>\$4,090</i>

Appendix A: Water Filtration System



Appendix B: Water Filtration System



Appendix C: Water Testing Results



Resource Laboratory Water Analytical Results



Client: **International Children's Care Cambodia**

Water Source: **Well**

Date Received: **25-Jan-16**

Province: **Kampong Thom**

Collection Date: **26-Jan-16**

District: **Kampong Tmor**

of samples: **1**

Commune: **NA**

Preservation: **Regular**

Village: **NA**

Packaged: **3Star**

full drinking irrigation

Sample ID:

ICCC

Parameter	Results	Units	Method	Date Analyzed	DL	CDWQS
Manganese	0.21	mg/L	AAS	29-Jan-2016	0.05	0.10
Arsenic	12.67	ppb	AFS	29-Jan-2016	1.6	50
Iron	0.39	mg/L	Colorimetric	26-Jan-2016	-	0.30
Sulfate	<DL	mg/L	IC	27-Jan-2016	0.11	250
Fluoride	<DL	mg/L	IC	27-Jan-2016	0.35	1.5
Nitrate	<DL	mg/L	IC	27-Jan-2016	0.13	50
Nitrite	<DL	mg/L	IC	27-Jan-2016	0.15	3
Chloride	17.76	mg/L	IC	27-Jan-2016	0.18	250
Phosphate	<DL	mg/L	IC	27-Jan-2016	0.62	-
Ammonium	<DL	mg/L	IC	27-Jan-2016	<1	1
Calcium	37.01	mg/L	IC	27-Jan-2016	<2	-
Magnesium	38.13	mg/L	IC	27-Jan-2016	-	-
Potassium	0.00	mg/L	IC	27-Jan-2016	-	-
Sodium	12.73	mg/L	IC	27-Jan-2016	<2	200
Turbidity	0.87	NTU	Meter	26-Jan-2016	-	5
pH	7.3	pH units	Meter	26-Jan-2016	-	6.5 - 8.5
Conductivity	710	µS/cm	Meter	26-Jan-2016	-	1500
Total Hardness	486	mg/L CaCO3	Titration	26-Jan-2016	-	300
E. Coli	57	cfu/100 mL	MF	26-Jan-2016	-	0
Total Coliforms	TNTC	cfu/100 mL	MF	26-Jan-2016	-	0

CDWQS = Cambodian Drinking Water Quality Standards (2004)

Exceeds Cambodian Drinking Water Quality Standard

DL = Detection Limit

TNTC : Too Numerous To Count

Note: TNTC > 300 Colonies

Date: 2-Feb-2016

Certified by

Health Development Laboratory

Ann Han

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