

Carbon Offset Project Profile

CAMBODIA: ACCESS TO CLEAN WATER THROUGH CERAMIC PURIFIERS

The expansion of areas under severe water stress will be one of South East Asia's most pressing environmental problems in the near future according to the UNFCCC's IPCC report. Among the many drivers of this development are the over-exploitation of groundwater, a sharp population increase and decline of the flows of the Mekong and Red Rivers.

Located at the Gulf of Thailand and the upper reaches of the Mekong River Delta, Cambodia faces these threats acutely. In addition, existing water in Cambodia is impure, and due to very low sanitation methods and the lack of a centralised infrastructure. Over 66% of its population does not have access to safe drinking water. Surface water of poor quality and rainwater stored in tanks are among the main sources of water for household consumption. One quarter of the population does not treat the water they consume at all. Prevailing treatment practice among those who do consists of boiling water with firewood and to a lesser extent charcoal.

This project addresses the problem of safe drinking water by constructing and disseminating ceramic water purifiers (CWP) to Cambodian households, particularly in rural areas. CWPs are point-of-use treatment systems which remove microbes from contaminated water. They are manufactured locally and can filter enough to supply drinking water for a family of five for five to seven years whilst requiring no energy input. Thus, while they replace the current treatment practice of burning non-renewable biomass, they directly lead to the reduction of CO₂ emissions.



Key Facts:

Location: Cambodia

Project type: Water Filtration

Project standard: Gold Standard

Total emission reductions: 22,000 t CO₂e p.a.

Project start date: February 2010

Project partner:
Hydrolic Social Enterprise Ltd

Validator:
TÜV Rheinland

Verifier: TÜV Rheinland





TECHNOLOGY BRIEF – HOW IT WORKS

The Ceramic Water Purifier consists of a porous, pot-shaped filter made of clay saturated with silver. It is placed in a plastic tank with a lid and spigot to protect filtered water from recontamination.

As water runs down the filter, the pores in the clay act as a physical barrier to micro-organisms and silver acts as bactericide. A CWP can filter 2 to 3 liters of water per hour and the tank can hold almost 10 liters. With approximately 3 fillings per day, a single CWP can provide more than 75,000 liters of drinkable water over its 7 year lifespan.

Since all CWPs are sold below cost, the implementation of the project has relied solely on donor funding for its initial implementation. However, this funding is not sufficient to cover the operations of the project for its entire lifespan. Therefore, with the assistance of revenues from carbon credits, this project can be financially sustainable in order to provide significant improvements to the living conditions of thousands of households.

SUSTAINABILITY BENEFITS

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- CWPs are locally manufactured creating employment positions during construction and distribution and therefore generate additional income. They also contribute to long term savings by replacing the cost of purchasing firewood and charcoal.
- In Cambodia, diarrheal diseases, mostly waterborne are the most prevalent cause of death among children under the age of five. By treating contaminated water, this project contributes to the reduction of child mortality from diseases associated with polluted water.
- Ceramic Water Purifiers have been proven to be 99.99% effective in the removal of bacteria. During its course, the project aims to disseminate between 168,000 and 315,000 units over 7 years, improving the lives of 900,000 to 1.7 million people.
- CWPs reduce deforestation rates by reducing the use of firewood to boil water. Each unit manufactured replaces approximately 2 tons of firewood each year. During the project's entire lifespan, it is estimated that between 2.3 and 4.4 million tons of firewood will be saved.

