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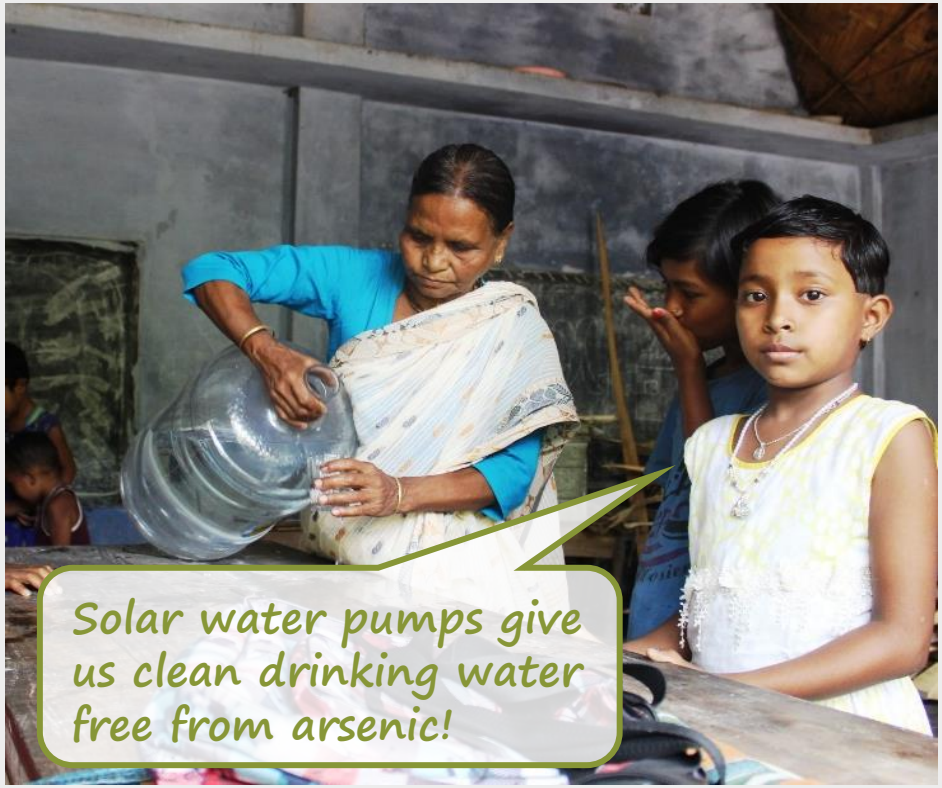
Local schools welcome solar-powered water purification system in India

5-year old Sathi Roy has often felt sick after drinking water at her pre-school in Ghogarkuthi village, Cooch Behar district, India. Now, the Tufangani Anwesha Welfare Society (TAWS) has introduced a purification system that allows filtering the water from contaminants by means of surplus energy from solar powered irrigation systems. Today, Sathi and her classmates can enjoy clean, pure drinking water at school.



Sathi Roy with teacher and classmate. (TAWS, 2018)

A contribution to POWERING AGRICULTURE: AN ENERGY GRAND CHALLENGE FOR DEVELOPMENT
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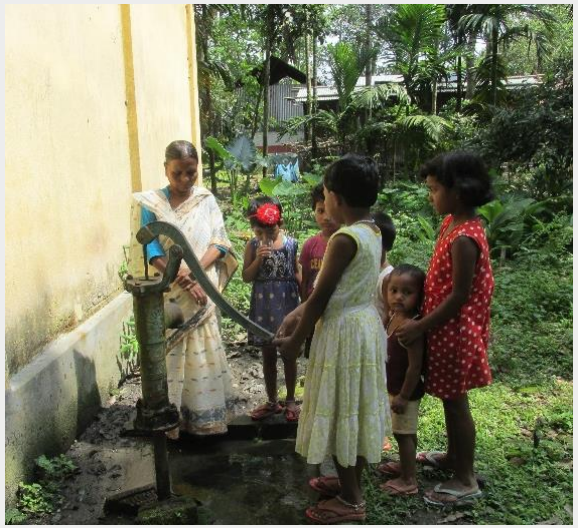
Village	Additional appliances connected	Projected utilisation of unused energy	Projected GHG offset
Phersabari	Water purification unit, Pulverizer	62.37%	1.99 tCO_2/yr.
Ghogarkuthi	RO water purification unit, Pulverizer	49.55%	1.57 tCO_2/yr.

Overview of the utilization of surplus solar energy in the villages, Phersabari and Ghogarkuthi (TAWS, 2018).

Challenge

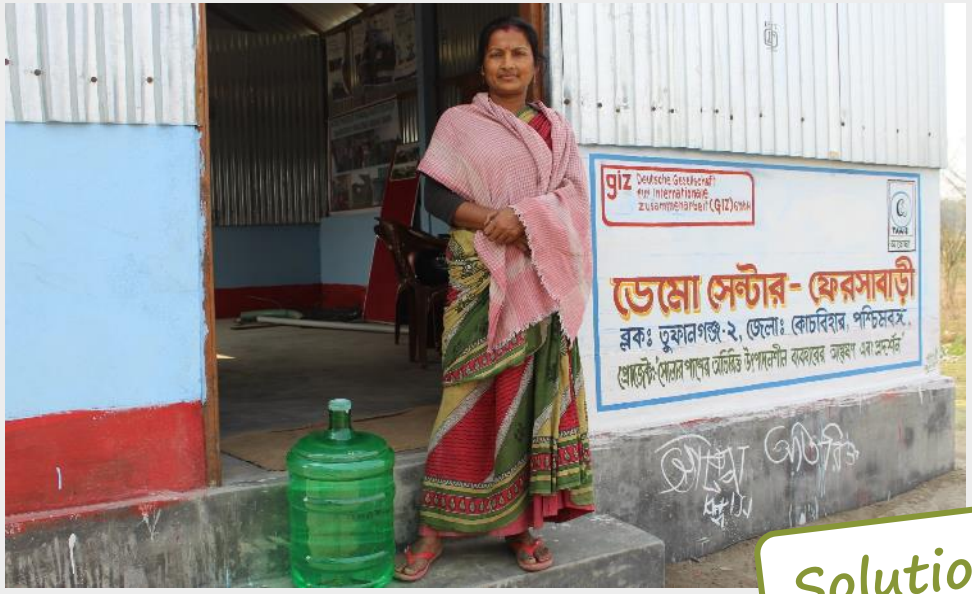
In large parts of West Bengal, India, arsenic pollutes the groundwater due to geological conditions. Arsenic can cause various diseases, including cancer and skin lesions if consumed on a regular basis.
Removing arsenic is possible with purification units; however, it requires a lot of energy. Many schools, like the pre-school in Ghogarkuthi village, cannot afford purification units or the necessary electricity. Hence, Sathi Roy and her friends always had to carry water from home to school or drink the school's polluted water.



The pupils do not have to drink polluted water from the hand pump but get clean water from the purification units. (TAWS, 2018)

"It is a relief to know that the water the pupils drink at school will not make them sick anymore."

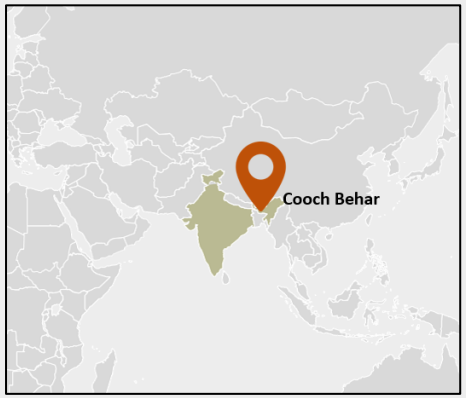
Saradamoni Barman, Teacher



Dipali Biswas, villager at Phersabari village collecting filtered water. (TAWS, 2018)

Solution

In Cooch Behar district, several solar powered irrigation systems produce more solar energy than is needed. To use the surplus energy, TAWS installed two water purification units and other appliances - a clean and economic solution.
The purification units remove ions, molecules and larger particles from drinking water by reversed osmosis using a semipermeable membrane. This way, TAWS provides water free from arsenic to 70 households, amounting to more than 15 percent of households in the villages Phersabari and Ghogarkuthi. They further service pre- and primary schools. Since Sathi Roy's primary school is one of them, she is happy to have clean, fresh water at hand right in her school.



More than

15%

of households in Phersabari and Ghogarkuthi are supplied with clean water.

More?

The Tufangani Anwesha Welfare Society (TAWS) is located in Lambapara, Tufanganj, Cooch Behar district. They work to empower underprivileged children, youth and women through relevant education, innovative healthcare and market-focused livelihood programs.

To reach their goal, they are active in many different fields: from farm sector development, watershed management, renewable energy dissemination, skill development and training programs to market research, livelihood generation programs and social development.

In the project area, irrigation is crucial for agricultural production. Solar water pumps can be a viable alternative to electric or diesel pumps, as they are non-polluting and independent from networks and fuel supply. Even though the pumps are only run on demand, they are only economical when the surplus energy is used for further applications, such as water purification or pulverizers – making it a win-win innovation for the farmers and the community.

Authors: Papia Chakraborty, Nilanjan Ghose, Diego Senoner

Main implementer:
Tufangani Anwesha Welfare Society

Contact: anweshango_ws2@yahoo.com

Further information about Powering Agriculture:
https://energypedia.info/wiki/Portal:Powering_Agriculture

About the project:
https://www.anwesha.org.in/projects.php

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The other Founding Partners are the United States Agency for International Development (USAID), the Swedish Government, Duke Energy, and the Overseas Private Investment Corporation (OPIC). Further information about Powering Agriculture can be found at PoweringAg.org.