

**Title:** Water for Phoolbari, Nepal

**Country of Implementation:** Nepal

**School:** University of Florida

**Project Lead:** Lillian Heran, United States, UF

**Student Team Members:** **Paige Duffack**, United States, UF; **Anne Davin**, United States, UF;

**Jonathon Micali**, United States, UF; **Lillian Heran**, United States, UF; **Jasmyne Angel**, United States, UF

UF Engineers Without Borders (EWB) – Nepal is serving the community of Phoolbari, Nepal in their efforts to provide clean, accessible water and sanitation systems in their Secondary Schools. Phoolbari is a village located in rural Nepal, nearly a three-hour drive from Kathmandu, the closest major city. In Phoolbari, many water sources are turbid and contain harmful bacteria such as fecal coliform. These water sources are also very few and far away, with the closest water source being nearly a 30-minute walk through mountainous terrain. Additionally, schools in the area lack reliable access to functional sanitation systems including handwashing stations and latrines. This lack of clean water and accessible sanitation systems has led to several cases of preventable waterborne illnesses among the student population and has put a strain on the students, teachers, and community members of Phoolbari. By seeking a long-term solution to this problem, EWB Nepal hopes to support bringing peace in the community by eradicating all cases of waterborne illness at the school and supply the students with clean drinking water.

Our current and most recent partnership is with the Shree Mathurapati Secondary School in Phoolbari, Nepal. Our goal is to support the community's expressed need for improved latrines and handwashing stations for students and staff. As of now, there is one non-operational handwashing station on school property, posing a risk to the health of students at the school. There are also very few safely accessible, operational latrines, causing many students, specifically female students, to miss school. Our project is expected to bolster the quality of life and health of the students attending the school, as well as amplify consistent attendance rates. In the short term, the construction of this new infrastructure will be monitored through the surveying of community members and students on their satisfaction with the facilities at the school, as well as by monitoring changes in water quality on site. In the long term, we plan to analyze the attendance records of students at the school to ensure a positive change has been made as a result of our project. We also plan to revisit the school a year after construction is finished to ensure the designs are still operating as expected.

Our team recently completed an in-person assessment, where three EWB Nepal team leads were sent to Phoolbari in December 2022. Our team traveled to Nepal to conduct research on the site, furthering our understanding on how to make a comprehensive design plan to best meet the school's needs. Some examples of data that was collected on site are soil samples, water quality tests, survey data, and other relevant information pertinent to design implementation. This trip allowed for a physical inspection of the site's existing infrastructure, the surveying of communities, and an assessment of needs. In addition, the team re-established its long-standing relationship with the community after a lack of travel

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during the COVID-19 pandemic. The team met with the school and community leadership to ensure the project aligned with the community's needs and wishes. Part of the social aspect of the trip involved educational outreach by providing lesson plans on hygiene and water-related topics.

The next phase of the project is implementation, where the EWB Nepal team will send three team leads to Phoolbari for two weeks in August 2023. This will occur once all the latrine and handwashing station designs is finalized, documentation is completed, lessons are planned, travels are arranged, and funding goals are met. Project progress will be monitored by frequent check-in meetings with the group throughout the planning process and implementation process by members of the team. Based on the expected start of construction date, our team has established goals regarding when our planning documents must be submitted that are set by our individual team, our professional mentors, and Engineers Without Borders International policy. Once construction is started, progress will be monitored by comparing physical progress with the predicted project timeline. Our team prepares for design challenges through an extensive "Alternatives Analysis" portion of the project. During this phase, our team weighs at least three distinct design options for each proposed aspect of the design, considering the efficiency, cost, sustainability, and functionality of each with regards to our specific community. By weighing multiple designs, we are able to pursue the best overall option for the school, and address as many foreseen design challenges as possible before construction begins. If we receive a grant, we will use the \$10,000 to fund this upcoming Implementation trip in Summer 2023. This donation will support the construction costs, travel expenses, project fees, and labor which in total is projected to cost \$15,700.

In addition to partnering and collaborating with the Shree Mathurapati Secondary School, our team is partnered with *Days for Girls International* and *Rural Tourism Environmental Development Nepal*. *Days for Girls International* is a non-profit organization that delivers sustainable menstruation kits to girls in developing countries where women's health and menstruation is frequently regarded as taboo. The team has distributed these kits during our trips in 2016, 2018, 2019, and 2022. They are doing amazing work not just in Nepal, but many other countries as well. *Rural Tourism Environmental Development Nepal* is a non-profit organization located in Nepal. The organization's leader, Shree Krishna Dhital, has supported the team through being a contact point for the community of Phoolbari. We are greatly thankful for his support of this project and the previous projects. As a team, we are immensely grateful for such a loving support from Shree and the communities of Khanalthok and Phoolbari.