



## ENGINEERS WITHOUT BORDERS USA MASSACHUSETTS INSTITUTE OF TECHNOLOGY CHAPTER

### Official Newsletter

#### Editor's Note

BY DIVYA RAJARAMAN

We are happy to share with you the Fall 2024 issue of our newsletter!

This issue will include updates on our progress through the year for all our active projects in Mkutani, Tanzania: Health & Sanitation and Farm & Irrigation.

We would like to thank everyone who has supported our chapter. Thank you to our wonderful mentors and partners from the EWB Boston Professional Chapter, Sydney Kates, our faculty advisors, Tal Cohen, Libby Hsu, and MIT D-Lab for their support and guidance. Finally, a huge thank you to our donors and members who have greatly helped our chapter. Follow us on LinkedIn @Engineers Without Borders - Massachusetts Institute of Technology.

Thank you to everyone that helped put this newsletter together. Enjoy!



#### Message from President

BY RUCHITHA CHANNAPATNA

The past few months have been an extremely exciting time for our chapter, and I am extremely inspired by the effort our members have put into making a step towards a better world. Our team leads have put an incredible amount of work into our Health & Sanitation project as well as our Farm & Irrigation project in Mkutani, Tanzania. Their leadership and dedication, along with all of the member's commitment, allowed us to make big progress that we are excited to share with you.

This past August, members of Health & Sanitation (team lead Maria Hernandez, new team lead Deeksha Kumares, Christine Tang) visited Mkutani for an implementation trip. Throughout the spring 2024 semester, the project team put together and finalized plans for this implementation trip all while staying in communication with our contacts in Mkutani. Major items included renovation of the dispensary, distribution of medical equipment donated by Boston Children's Hospital, and various community workshops (WASH, menstrual health, and maternal care). Farm & Irrigation lead and former president Iselle Barrios also traveled, gathering important info to help guide design approaches as this project team prepares for their own implementation in future months. The feedback from the trip was positive, with many new experiences gained. I encourage you to read more about the travel trip in this newsletter and also check out our website and socials!

This trip, and our work overall, would not have been possible without the support from all our mentors, sponsors, and supporters – to all of you, we are extremely grateful. Thank you in particular to the Boston Professional Chapter who also traveled to Mkutani during this time and provided technical mentorship. Thank you to our faculty advisors, Libby Hsu, Dan Sweeney from MIT D-Lab, and Tal Cohen from Course 1 for their support. To Mkutani, we are extremely honored and humbled to be a part of empowering the community for sustainable change.

All members of this travel team visited Mkutani for the first time, and have brought back valuable perspective and insight to the rest of our chapter. Coming back from this trip, we have a renewed direction for the upcoming months. During these transitional months where we complete our post-trip documentation, we wish to establish renewed focus on the ethics, sustainability, and cultural awareness that are essential to positive global development approaches. This means a stronger focus on ethics during team meetings, a slight increase in weekly time commitment, and the continuation of chapter-wide activities in general body meetings.

This fall we had another successful recruiting season, with a chapter size of 25+ students. Our executive team is 12 members strong, which highlights the long way our chapter has come since a few years back following the pandemic. I would like to thank all the exec members for their dedication, and also welcome all the new members (and returning members) that have joined us this semester!

Our chapter will continue to host educational events for the MIT community in the forms of guest lectures etc., while also focusing on fundraising for the Farm & Irrigation project. Contributions to this goal go a long way, whether it is through a monetary donation or sharing our work with your networks. If you would like to see how you can help make a difference, please visit our website shown at <http://ewb.mit.edu> in this newsletter.

With Health & Sanitation looking for the next steps towards a new project and Farm & Irrigation at a critical stage, we are preparing for big changes that will come in the future. I am looking forward to where our strong team who each show amazing initiative, responsibility, care and awareness will go; a shared passion to do good in the world is what brings us together in Engineers Without Borders, and it is what will guide us forward as well.



## Female Health and Sanitation Project

BY DIVYA RAJARAMAN

Back in June 2022 the Health and Sanitation team got to visit the local medical dispensary in Mkutani, Tanzania. The Mkutani dispensary serves as the nearest health care facility for roughly 4800 village residents. However, in 2019 it was reported that “death of expectant mothers during delivery” and “death of children below the age of 5” were among some of the challenges facing the dispensary.

In 2022, our team visited the village in person in order to collect data about the facility. At the time, the dispensary only had two rooms available for patient care, each with only one bed, and the facility did not have all the preferred medical equipment to service potential issues with patients nor any space to appropriately house them.

This summer during our 2024 Implementation Trip, the team checked in on the construction and renovations of the dispensary. We planned on creating a new patient room, updating the electrical system to include solar panels and have lights within the dispensary. Furthermore, due to bat infestations construction of a new roof was needed as well. As of September 2024, the roof construction has been completed.



Photo of health dispensary from 2024 trip

During the Implementation trip, the team also held WASH, menstrual health, and gender violence presentations for the students of the Mkutani primary school. The team was also able to join a presentation with Flora Njeleka, the founder of Hedhi Cup, which is a company designed to bring menstrual cups to Tanzania. Our team held a fundraiser last semester to raise around \$500 to give 75 menstrual cups to women in the community. After the presentation, all of the women present wanted to get a menstrual cup to use!

## Member's Corner

BY ROHAN BOSWORTH

As a member of the farm and irrigation team I have enjoyed collaborating on the development of agricultural systems including water transportation and precipitation analysis. In addition to learning valuable engineering skills on these projects, I have enjoyed connecting with service oriented peers who share my dedication to supporting underserved communities. It is inspiring to collaborate with dedicated and hard working individuals who are committed to truly supporting a global initiative.



# Irrigation Project

BY ISELLE BARRIOS

The goal of the farm and irrigation project is to build an irrigated garden at the Mkutani Primary School in Mkutani, Tanzania. The garden will provide food for students, some of whom live too far away from the school to go home for lunch, as well as an educational tool for teachers. Water for the garden will be piped to the school from a shallow well drilled near a river about  $\frac{3}{4}$  of a kilometer from the school. The garden will have designated areas for vegetable crops and fruit trees, and be irrigated primarily with a gravity-fed drip irrigation system. To enhance the educational aspect of the project, it will also have individual plot space for students to grow crops of their choosing.

We recently traveled to Tanzania to collect information and meet with stakeholders about the project. During the trip, we collected GPS data for the pipeline route and identified a likely location for the well with the help of a local geologist. We spoke to the school headmaster and a teacher who will be involved with running the garden to talk about crop layout, plans for the food once it's harvested, and identify responsible parties for garden maintenance. We also met with an agricultural extension officer in Mkutani to ask questions about agriculture best practices and his ideas for how to use the garden for education. We are currently laying out the irrigation system for the garden, calculating the water needs of different crops, and designing the tank stand for the garden. We will soon be sizing the pump and doing detailed fluid calculations for the pipeline and irrigation system. Our goal is to be able to implement the project in August 2025.

## Donors' Corner

BY CELESTINA PINT

Thank you to all of our donors from this fall! Your donations will help fund expenses such as merchandise and food for our General Body Meetings, as well as the implementation of our future projects this year. If you would like to make another donation, or donate for the first time, you can visit our page at giving.mit.edu under Engineers Without Borders.



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## Photos from Summer 2024 Implementation Trip



Right: The team at the health dispensary to check in on the ongoing renovations along with the chief medical officer of the district and the engineering contractors.

Left: The EWB-MIT team at a workshop about menstrual cups with the Heidi Cup foundation. They discussed the benefits of using a menstrual cup for hygienic practices.



Left: Students participating in the WASH and menstrual health presentations that teach the importance of handwashing, general hygiene, and menstrual health.



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