

Handwashing in rural Ethiopia

WHAT? What is the project about? For whom?

I designed ELAWASH based on the two themes of human-centred design and sustainability. The design of this plastic-free, hand washing device is a new response to global plastic pollution, addressing the lack of access to hand washing facilities in rural Ethiopia. In 2020, only 5% of rural population in Ethiopia had an access to basic handwashing facilities at homes (WHO, 2021). Also, this hand-free handwashing station could be beneficial in reducing the spread of COVID-19 thanks to foot powered mechanism. The simple act of hand washing with clean water and soap at critical times – such as before eating and after using the toilet – can decrease diarrhoeal disease up to 40% (UNICEF, 2019). The design is dedicated to adults however, it can be adapted to height of children and teenagers by scaling the product to the appropriate size.

HOW? Brief description (How it works, materials...)

This handwashing station regulates the flow of water by the foot-powered mechanism, which with the water container is the most important part in this product. The construction of the base can be made from various locally available materials such as wood, bamboo, or steel.

The core of this design is that it can be adapted and produced by local populations, using their own expertise and locally sourced materials, for example, clay. As this design can be produced in different areas using various materials the final products can slightly vary in outcome. However, the current design proposal is made from only four materials: clay, wood, jute rope and steel (fasteners).

WHY? What Sustainable Development Goal of the United Nations agenda 2030 are you offering a solution to and why will it be relevant in the future?

I am inspired by the UN Sustainable Development Goals, particularly the Clean Water and Sanitation Goal. Thanks to my design I would like to improve lack of access to hand washing facilities in rural Ethiopia. As design can be adapted and produced by local population the product can be fixed or replaced in place, which reduce costs and logistic.

This project will be relevant in the future, because locally made handwashing stations could have strong impact on improving hygiene in rural Ethiopia. Also, useful locally made products can boost local economy. The design could help rural Ethiopia to be more independent in improving lack of access to handwashing facilities. Accordingly, every household could benefit and have access to a cheaply produced, foot-powered hand washing unit.



Round opening system for easy cleaning and filling the water

Water Container

Extra Fixing for soap

Hand Basin

Option for fixing a left side foot pedal for left footed users.

Waste Water Container

Safety Rope
(preventing from tipping water container forward - outside the top base)

Eye Bolt
(the screw base lets fix the mechanism on the right or left side)

Adjustable Feet

Foot Pedal with light cut-surface for better adhesion

