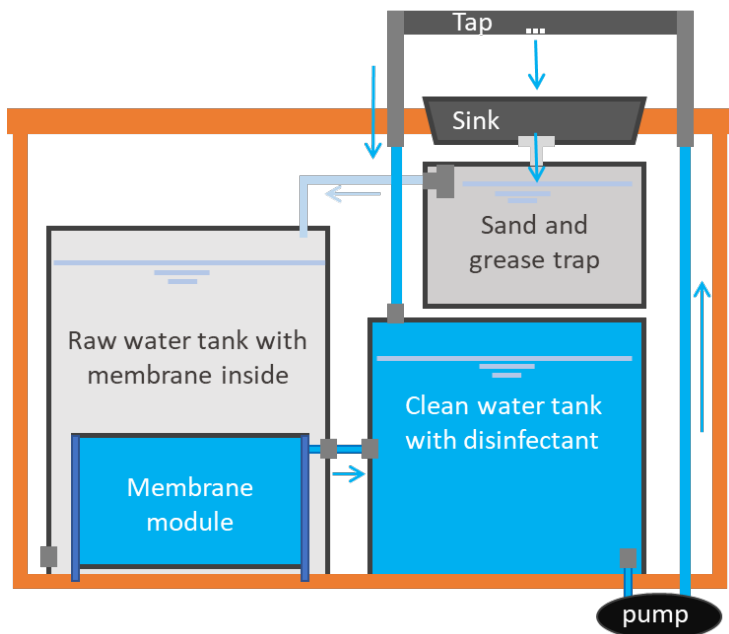


Project description – Hands4Health

In low- and middle-income countries where healthcare facilities and schools are not connected to functional water supply systems, stand-alone handwashing systems provide a solution to safely recycle and reuse handwashing water. In this project, we designed and implemented such a handwashing system (see the scheme below) which is currently in operation in Burkina Faso, Mali, and Nigeria in Africa. As shown in the scheme, a chemical disinfectant (mainly chlorine) needs to be added to reused handwashing water to guarantee the water is pathogen free. However, chlorine can be consumed by the organics released into handwashing water during hand washing. Based on a survey, the stability of chlorine is mainly controlled by amides abundantly present in handwashing waters from the use of soaps.

The aim of this semester project is studying the reaction kinetics between chlorine and amides at different pHs and different temperatures to facilitate chlorine dosing in reused handwashing water. The project will be supervised by the postdoc, who works on this topic.



Scheme of handwashing station (figure credit: Domini Jaggi at FHNW)