



AKYAS – On-site wastewater treatment package

Executive Summary

Background

Under the current trend, it is estimated to have more than 300 million people around the world who need humanitarian assistance in 2030. Today, 40% of the global displaced population is located in the Middle East, where conflicts are the main driver of humanitarian needs in the region. The growing displaced population will be in need for an affordable, fast deployable off-grid, sanitation solution.

Innovations

AKYAS is a Turn-key solution that functions as a low-cost, low-resource, and easily deployable non-sewered sanitation system. The mission of AKYAS is to bring low-cost sanitation to the base of the pyramid population regionally and globally, especially those with lack of access to safe sanitation such as displaced populations, high-dense slum households or other water-scarce communities.

AKYAS innovates for a back-end toilet system that consumes zero water, zero energy and requires no infrastructure. It provides onsite treatment that effectively isolates faecal waste for reduction of pathogens in the environment, through the use of a specially developed powder mix that kills pathogens rapidly, in combination with multiple-use organic compostable toilet bags. AKYAS back-end unit can be adapted to fit any front-end solution.

AKYAS is in the prototype testing phase of the product, and has recently launched a pilot in Jordan, within an informal tented settlement housing Syrian refugees and planning to launch a pilot in Turkey before the end of 2020. AKYAS thrives on collaboration with research institutions, non-governmental organisations, and governmental agencies to launch additional pilot sites within Jordan and in other countries while using an evidence-based innovation development process.

Impacts

The AKYAS system prevents cross-contamination of faeces with the surrounding environment and thus reduces water-borne diseases and potentially prevent the outbreak of faecal-oral transmitted diseases, minimising environmental & health risks and building resilience among vulnerable communities. The treated faecal waste can be transformed by the AKYAS tech into value-adding bio-products, which could be safely used for land reclamation for fighting desertification or to be deployed in agricultural activities, thereby creating livelihood opportunities throughout the recovery process.

Service Model

The AKYAS innovation and operation model is based on delivering hardware and consumables in a razor/ razor-blade model. We could offer consumables (such as the recurring replacement bags and powder pouches) together with the optional toilet system hardware (such as the toilet pan/seat, odour filter) according to the need of the setting and the users.

Key customers include government agencies, non-governmental organisations, as well as end users themselves.

Team

AKYAS is currently based in Jordan, and comprises an international group of enterprising young professionals of different professional backgrounds, bringing together varied expertise across different domains. All team members believe strongly in the mission to bring affordable sanitation to all who need it, regardless of their housing circumstances.