



SPLASH The Project for Risk-based Participatory WASH Planning and Citizen-data WASH Statistics for African Peri-urban Settlements
—Stimulating Participatory risk-based Planning for WASH—



Project Period
June 2024 - June 2029

SPLASH Project Team

JAPAN side **ZAMBIA side**

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SATREPS : SATREPS is a Japanese government program that promotes international joint research aimed at solving global issues, handled jointly by Japan Science and Technology Agency (JST) and Japan International Cooperation Agency (JICA).



The Project for Risk-based Participatory WASH Planning and Citizen-data WASH Statistics for African Peri-urban Settlements



Background **Poor WASH conditions in sub-Saharan Africa**

Drinking water, sanitation, and hygiene (WASH) are multiple barriers and vital for human health. However, 410 million, 760 million and 900 million people, respectively, do not have access to basic WASH in sub-Saharan Africa.

Serious impact on human health

Diarrhea is the 5th largest cause of <5-year mortality, 58% of which are associated with poor WASH. Sporadic cholera outbreaks occur in peri-urban low-income settlements (compounds), especially that of Lusaka, Zambia, where water and sanitation infrastructure is poor.



Our focus **Problems are not limited to water supply infrastructure**

People typically collect water at shared yard taps and store it in buckets at home. Water stored at home is often contaminated due to germs of living space even if water from the taps is clean. Unsanitary living space causes fecal exposure through various pathways. People's actions are needed to clean their living space. However, they do NOT have a sanitary toilet BUT a mobile phone.



NO sanitary toilet
BUT a mobile phone



Our approach

Experienced, not taught

- ▶ People can realize diarrhea risk and have motivation to improve WASH if they can see germs in their living space by naked eyes through a participatory coliform survey.
- ▶ People can also design localized WASH action plans if they can visualize infectious pathways and quantify diarrhea risk, supported by App.
- ▶ Bigdata from people's surveys could be WASH statistics if inaccurate data are properly corrected.



People's ranking of dangerous media

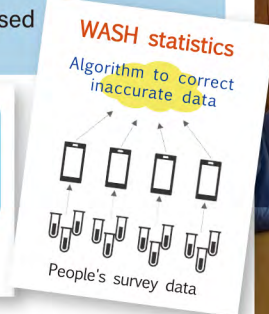
Before survey	→	After survey
Drinking water	1	Kitchen floor
Food	2	Toilet floor
Hand surface	3	Dumpsite
Toilet floor	4	Entrance floor
Kitchen floor	5	Cup surface
Other water	6	Hand

Overall goal

- To improve WASH and prevent diarrhea and cholera outbreaks
- To realize evidence-based policy making by WASH statistics

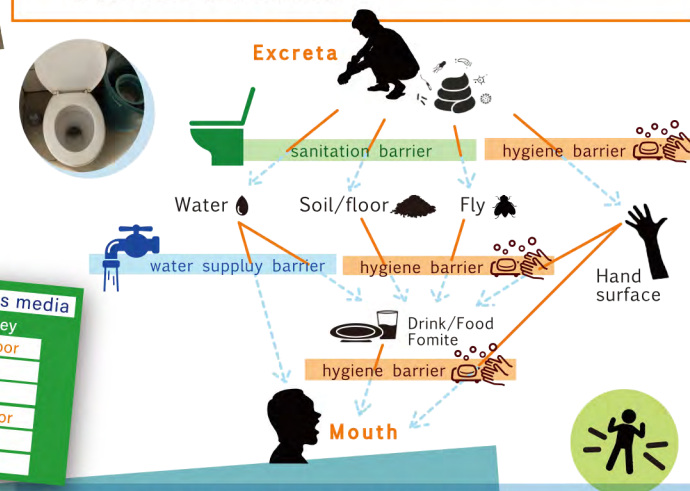
Project objectives

- ▶ To develop a method of App-supported participatory *E. coli* survey and diarrhea risk visualization for self-designing of WASH action plans.
- ▶ To create a WASH quality database based on participatory *E. coli* data.



Research themes

- ① To develop an assay of simultaneous enteropathogen quantification and clarify diarrhea risk structures
- ② To estimate the risk reduction by remedial measures of better WASH
- ③ To create social networks for the implementation of WASH action plans
- ④ To develop a method of App-supported participatory risk-based WASH planning
- ⑤ To develop an algorithm to correct inaccurate people's *E. coli* data for database



Social implementation **Effectively mitigate diarrhea risk**

- ▶ To pilot the developed methodology in local communities of peri-urban Lusaka.
- ▶ To evaluate and validate the methodology.
- ▶ To develop guidelines and organize workshops for effective use.

