

# Health risk assessment along the wastewater and faecal sludge chains in Kampala (Uganda) and Hanoi (Vietnam)

<b>Submission date</b> 21/10/2014	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered
<b>Registration date</b> 13/01/2015	<b>Overall study status</b> Completed	<input type="checkbox"/> Protocol
<b>Last Edited</b> 08/02/2023	<b>Condition category</b> Infections and Infestations	<input type="checkbox"/> Statistical analysis plan
		<input checked="" type="checkbox"/> Results
		<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

Safe management and reuse of wastewater and faecal sludge for irrigating crops and as a fertilizer is of growing importance for people living in urban areas in Africa and Asia. In this study we focus on wastewater management and reuse schemes in Kampala, Uganda, and Hanoi, Vietnam. Kampala city, the capital city of Uganda, treats wastewater and faecal sludge for reuse around the Bugolobi Sewerage Treatment and Disposal Works. Hence, wastewater is reused for irrigation downstream of the plant within the Nakivubo swamp, where farmers grow crops. Hanoi, the capital city of Vietnam, is one of these Asian cities where large open storm water and drainage channels convey the wastewater out of the city. In the Than Tri district, a peri-urban area of Hanoi, wastewater is reused in agriculture and aquaculture, which creates important livelihood opportunities and is a valuable source of fresh vegetables and fish for the city. Although these recovered products are beneficial for agriculture, such practices might pose risks for both human and animal health. We want to obtain and compare the relevant health risks between selected people who are exposed to wastewater and/or faecal sludge (farmers reusing wastewater, communities living close to the wastewater channels and workers who operate wastewater facilities and collect faecal sludge) with people who are not exposed to wastewater and/or faecal sludge. The results will help the people living and working along wastewater systems to safely manage and reuse water and nutrients in the future.

### Who can participate?

Adults that are wastewater treatment plant workers, faecal sludge collectors, urban farmers, people living close to wastewater channels, and people that do not come in contact with wastewater channels.

### What does the study involve?

Participants are interviewed for about 30 minutes to obtain data on demographics, occupation, socio-economic status, levels of hygiene, their consumption of water and food, any symptoms of disease, their perception of risk from wastewater and faecal sludge and personal protective

equipment. After the interview we ask participants to provide a stool sample the next morning to check for parasitic infection. The results are announced as they become available and remain confidential. Participants that are infected with parasites are treated for free.

What are the benefits and risks of the study

The main benefit to participating in this study include free professional treatment for parasitic infection. Participants are also likely to support the sanitation planning of Kampala and Hanoi city, respectively, and help to protect people who are living and working along wastewater channels. To prevent any risk participants are told in detail about the study processes at each step.

Where is the study run from?

Nakivubo area of Kampala city (Uganda)

Than Tri district, Hanoi (Vietnam)

When is the study starting and how long is it expected to run for?

October 2013 to October 2015

Who is funding the study?

Swiss Agency for Development and Cooperation (SDC).

Who is the main contact?

Prof. Dr Guéladio Cissé

guealdio.cisse@unibas.ch

## Contact information

### Type(s)

Scientific

### Contact name

Dr Guealdio Cisse

### Contact details

Swiss Tropical and Public Health Institute

University of Basel

Department of Epidemiology and Public Health (EPH)

Socinstr. 57

Basel

Switzerland

4002

+41 (0)61 284 83 04

gueladio.cisse@unibas.ch

## Additional identifiers

Protocol serial number

N/A

## Study information

**Scientific Title**

Health risk assessment along the wastewater and faecal sludge chains: case study in Kampala and Hanoi

**Acronym**

N/A

**Study objectives**

The difference in odds ratio is 2.5 or higher between highly exposed groups (people working along the wastewater and faecal sludge chain) and the people without an exposure to the two waste chains (control groups).

On 09/07/2015 the trial record was updated to add Hanoi (Vietnam) as a study site.

**Ethics approval required**

Old ethics approval format

**Ethics approval(s)**

1. Ethics committee of Basel (Ethikkommission beider Basel); 07/08/2013; ref: 137/13
2. Makerere University School of Public Health: Higher Degrees Research and Ethics Committee; 10/07/2014; ref: IRBOOO11353
3. Uganda National Council of Science and Technology (UNCST) in Kampala, Uganda and office of the president of the republic of Uganda; approved study period: 08/10/2013-08/10/2015; ref: HS1487
4. Hanoi School of Public Health (HSPH), 26/02/2014, ref : 010/2014/YTCC-HD3

**Study design**

Cross-sectional survey, epidemiological survey, environmental sampling, quantitative microbial risk assessment

**Primary study design**

Observational

**Study type(s)**

Other

**Health condition(s) or problem(s) studied**

Communicable diseases (soil-transmitted helminth, *Schistosoma mansoni* and intestinal protozoa infection )

**Interventions**

Administer a questionnaire interview for about 30 minutes to obtain data on demographics, occupation, socio-economic status, hygienic behavior, consumption of water and food, disease symptoms, health seeking, risk perception and personal protective equipment. The data is entered directly into a data entry mask of a tablet computer during the interview and will be synchronized with a secure server from Swiss Tropical and Public Health Institute in Switzerland every evening. The access to the database is restricted to the main investigators of the study. After the analysis we will make the results anonymous and share them with the stakeholders and participants.

After the interview we will invite participants to provide a stool sample the next morning for the detection of parasitic infection. Stool samples will be analysed by a laboratory technician the Ministry of Public Health. The results will be announced as they become available and will remain confidential. In case we detect any parasitic infection we will come back to the participant and provide treatment for free. All participants tested positive for soil-transmitted helminth or *Schistosoma mansoni* will be treated with a single dose of albendazole (400 mg) and praziquantel (40 mg/kg), respectively.

**Intervention Type**

Other

**Primary outcome(s)**

Differences in parasitic infection between exposure groups (worker, farmer, community members)

**Key secondary outcome(s)**

Prevalence of communicable diseases and related risk factor in an urban East-African and Southeast Asian setting

**Completion date**

08/10/2015

**Eligibility****Key inclusion criteria**

1. Participants were enrolled in case they belong to following exposure groups: Wastewater treatment plant workers, faecal sludge workers, farmers and community members.
2. Willing to sign a written consent form, submit a stool sample and conduct a questionnaire interview

**Participant type(s)**

Other

**Healthy volunteers allowed**

No

**Age group**

Adult

**Sex**

All

**Key exclusion criteria**

1. Too sick to attend school or participate in the study (e.g. severe diarrhoea, severe anaemia, high fever, etc.)
2. Absence of written informed consent
3. Person is younger than 18 years of age

**Date of first enrolment**

08/10/2013

**Date of final enrolment**

08/10/2015

**Locations****Countries of recruitment**

Switzerland

Uganda

Viet Nam

**Study participating centre**

**Swiss Tropical and Public Health Institute**

Basel

Switzerland

4002

**Sponsor information****Organisation**

Swiss Tropical and Public Health Institute

**ROR**

<https://ror.org/03adhka07>

**Organisation**

World Health Organization (WHO)

**Funder(s)****Funder type**

Research organisation

**Funder Name**

Direktion für Entwicklung und Zusammenarbeit

**Alternative Name(s)**

Swiss Agency for Development and Cooperation, Direction du Développement et de la Coopération, Agencia Suiza para el Desarrollo y la Cooperación, Direzione dello Sviluppo e della Cooperazione, DEZA, SDC, DDC, COSUDE, DSC

### Funding Body Type

Government organisation

### Funding Body Subtype

National government

### Location

Switzerland

## Results and Publications

### Individual participant data (IPD) sharing plan

Not provided at time of registration

### IPD sharing plan summary

Not provided at time of registration

### Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>	results	01/11/2014		Yes	No
<a href="#">Results article</a>	results	01/07/2015		Yes	No
<a href="#">Results article</a>		10/10/2016	08/02/2023	Yes	No
<a href="#">Results article</a>		03/03/2016	08/02/2023	Yes	No