In 2015, many developing countries, mainly in sub-Saharan Africa, did not meet the MDGs in Water, Sanitation and Hygiene (WASH). Côte d'Ivoire and Mauritania in West Africa are among them. Moreover, climate change has some impact on water and sanitation sectors as well as on population health (Figure 1). The present study intends to describe weaknesses in WASH in two secondary cities of the two countries and understand their main consequences for malaria and schistosomiasis in the context of climate change.

Figure 1: Analytical conceptual framework of the study

A cross-sectional study was conducted in Korhogo and Kaedi respectively in rainy and dry seasons of 2014-2015 (through).
- Household survey by questionnaire on access to WASH and associated health problems, geographical survey with Global Positioning System (GPS) on some environmental health risk factors.
- Physical analysis of breeding sites of anopheles larvae and molluscs.
- Meteorological and clinical data collection over the period 2000–2014.
- The data was analyzed by Kilic 2014, SPSS 20 and Arango J.2.

Preliminary results

- In Korhogo (a), there is no rainwater drainage system. In Korhogo (b), the system is dysfunctional by location so there is stagnant water points in the two cities during the rainy season. These points are potential breeding sites of anopheles larvae.

- We note a significant correlation between intra-annual malaria incidency with rainfall (r=0.64 ; p<0.05) and relative humidity (r=0.83 ; p<0.001) in Korhogo. However schistosomiasis is correlated with temperature (r=0.57 ; p<0.05).

- There is a good overlap between the spatial and temporal distribution of risk factors (surface water, garbage deposits, stagnant wastewater points) and households with malaria cases in Korhogo.

- In Kaedi (a), there is no rainwater drainage system. In Kaedi (b), the system is dysfunctional by location so there is stagnant water points in the two cities during the rainy season. These points are potential breeding sites of anopheles larvae.

- The presence of Anopheles larvae (Ni) in a breeding site is positively correlated with dissolved oxygen (DO) and negatively with conductivity (Con) and salinity (Sa) (Figure 2).

The presence of Anopheles larvae (Ni) in a breeding site is positively correlated with dissolved oxygen (DO) and negatively with conductivity (Con) and salinity (Sa) (Figure 2).

Next Steps

- Continue analyzing data for both study sites mainly for Kaedi ;
- Participation to conferences ;
- Publication of study results ;
- PhD writing.

3 main references related to the study