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MASTER THESIS

# EFFECT OF WATER CONTACTS SEASONALITY ON SCHISTOSOMIASIS TRANSMISSION IN RURAL SAHELIAN AREA IN BURKINA FASO

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## ABSTRACT

Schistosomiasis is a tropical, neglected, water-borne disease, which is endemic in most sub-Saharan African countries. The control strategies must combine drug treatments, sociological and environmental aspects due to the complex transmission cycle of the disease implying an intermediate host and the transmission to humans occurring during contacts with stagnant contaminated freshwater. Water-contact patterns due to economic and sociologic activities in African rural area are an important factor in the comprehension of the transmission of this disease. Through interviews and a participatory workshop, activities related to water-contact were identified, quantified and located for the study site of Tougou, situated in the north of Burkina Faso. Tougou, a field site for the 2iE Institute of Ouagadougou since 2004, has a sahelian climate; with a dry season of eight months and all precipitations occurring during the four other months of the year; and is affected by urinary schistosomiasis. The water-contact rates for the identified activities and the attractiveness of the different water points at the site, point out a seasonal variation in water-contact patterns. Using modelling to explore the effect of the seasonality of water-contacts in schistosomiasis transmission cycle, two different issues are observed depending on the considered system. In a local system, including one point of contact with water and one village, the seasonal variation of water-contacts leads to a decrease in the number of parasites per person. In opposite way, in a connected system of several villages having several water points where contacts occur, the seasonal variation of water-contacts lead to an increase in the number of parasites per person, due to the gathering of most water contacts at fewer number of water points during the dry period of the year.

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