Resilience of populations to malaria and schistosomiasis in the context of climate change in West African Sahel (Côte d'Ivoire, Mauritania)

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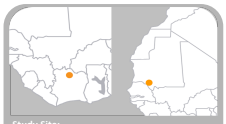
Malaria and schistosomiasis are still important public health concerns in sub-Saharan Africa, despite tremendous efforts put in place by researchers and policymakers for their control. Both diseases constitute major causes of mortality and morbidity in Sub-Saharan Africa countries, such as Côte d'Ivoire and Mauritania. Malaria is the leading cause of death in Côte d'Ivoire with 33% of annual deaths and the third cause of consultation with an average of 250,000 to 300,000 cases per year in Mauritania. Prevalence of schistosomiasis in Côte d'Ivoire ranges from 1% to over 90% depending on the region while in Mauritania, it varies from 30% to 70%. Those figures are aggravated by the process of climate change that contributes to change relationships between human beings and their environment. In this case human communities have adopted many adaptation or mitigation strategies. This study aims to analyze proactive and reactive mechanisms of populations to overcome the burden of malaria and schistosomiasis aforementioned countries.



Study Site:
Korhogo (North Côte d'Ivoire):
Population: 210 000 Hbts,
Precipitation(mm/a): 1200-1500, Average :1350 mm
T°(min-max): 30 °C [24-36°C]
Presence of a dam (Vol=107 m3) and other small water bodies. Main ethnic group Senoufo

Kaedi (South Mauritania):
Population: 118 195 Hbts,
Precipitation (mm/a) 300-500 , Average : 400mm
T°(average):28°C [12-44°C]
Located along the Senegal river
Main ethnic group: Al Poolar, Soninké, Maure

Key message / lessons

- Strategies proposed by authorities for diseases control considered as insufficient by populations.
- Communities remain strongly attached to their culture in their heath seeking behaviors.
- Need for more sensitization activities on vector borne diseases and attendance of health care centers.
- Resilience strategies mainly based on social capital but need to be reinforced by institutional support

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TDR For research on diseases of poverty

World Health Organization

Study Theme related 3 main references:

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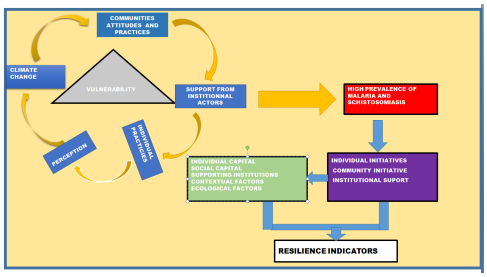
3 Granado S, Ettien A A-M, Boko A N, Yao K A, Tanner M et Obrist B. (2006).la vulnérabilité des citadins à Abidjan en relation avec le palu : les risques environnementaux et la monnayabilité agissant a travers le palu sur la vulnérabilité urbaine, article2: Date: December 20, 2006

Materials & Methods

Conceptual Framework



Study sites in Korhogo and Kaédi

Study was conducted in two countries: Côte d'Ivoire and Mauritania.

In Côte d'Ivoire: study conducted in four living place of the city of Korhogo: . High Standing (Residential II), precarious neighborhood (Koko), suburban area site (Natio) and a rural village (Kolokakaha).

In Mauritania: Four study sites:, High Standing (Latin), precarious neighborhood (Wandama), suburban area (Inity) and a rural village (Belinabé).

Site selection taking into account sociocultural, economic and environmental contexts to highlight the similarities and differences related to adaptation strategies mobilized by the communities.

Data collection Methods

The study consisted of two cross-sectional household surveys in rainy and dry seasons in each site of both towns.

- **Quantitative data collection :**

  Household questionnaire on knowledge, attitudes and practices related to both diseases, strategies of resilience in rainy and dry season in each town: 728 in Korhogo and 720 in Kaédi per season.

- **Qualitative data collection:**

  Participatory photography or photovoice in four communities of each town during rainy and dry seasons (4 participants per site on the basis of social categories). This aimed at determining the social imaginary on malaria and schistosomiasis

  Focus group discussion (FGD) with members of the community to identify resilience strategies of communities. Four FGD in each selected neighborhood per season in Korhogo and Kaédi.

  Semi-structured interviews with institutional actors at national and local levels (National Control Programs, medical personnel of health centers, NGOs, municipalities, etc.). This aimed at determining institutional strategies of resilience(n = 25).

Preliminary Results

Knowledge of malaria and schistosomiasis

Malaria well-known in Korhogo and Kaédi in terms of symptoms but causalities varying from different contexts due to control strategies of the states and NGOs

Symptoms of schistosomiasis clearly identified by populations of Kaédi but causes difficult to define while the disease is not well known in Korhogo. This is due to the fact that in Korhogo the most popular form is intestinal schistosomiasis (symptoms difficult to identify) while in Kaédi, urinary schistosomiasis (whose symptoms could be clearly described) is endemic but control strategies are poorly implemented.

Preventive strategies against malaria and schistosomiasis

Preventive activities against schistosomiasis are not implemented in both sites due to lack of knowledge concerning the causality of the disease

In Korhogo, main prevention activities against malaria vary from different neighborhood depending the standing of the area. They are insecticide sprays, fumigating coils, repellent roots and barks of trees and mainly mosquitoes nets

In Kaédi, regardless the locality, people essentially use the treated nets or not, and they practiced domestic sanitation activities.

Curative strategies

- There is a **strong propensity to self-medication by the use of traditional plants** (Banana leaves, lemon, papaya leaves etc.), and also the use of street drugs. They also use medical syncretism combining of modern cares and traditional medicinal plants.
- It appears that on the four districts, people practiced a care syncretism in the case of malaria while for schistosomiasis, they mainly use local traditional strategies (a cool bath of henna).

Resilience capacities

Populations rely on various strategies of resilience ranging from individual to institutional strategies. The use of self-medication and natural plants in both locations shows that people rely basically on **individual resources.**

Social resources are also mobilized through family and neighborhood networks for health assistance through local youth associations, cooperatives, etc. The more the social network is extended, the more the individual is able to cope with health needs by using modern heath facilities.

Support from official and non-official structures (NGOs, health facilities, municipality) does not appear to be a major asset for resilience. Strategies of authorities to contribute to well-being of populations are not perceived by communities as sufficient. Rather than sensitization and distribution of drugs and mosquitos bed nets, their preferences are strategies for poverty alleviation or hygiene and sanitation campaigns