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**About AfricalInteract** : AfricalInteract is a platform enabling research-to-policy dialogue for adaptation to climate change among a broad range of African stakeholders in sub-Saharan Africa. These include civil society, researchers, policy-makers, donors, and the private sector working on adaptation to climate change in the agriculture and health sectors as well as urban areas with water and gender as cross cutting issues. The overall objective of AfricalInteract is to develop a platform for the effective and efficient transfer of information to policy makers, with the ultimate aim of enhancing the resilience of vulnerable populations. AfricalInteract is funded by the International Development Research Centre (IDRC) and coordinated by the West and Central African Council for Agricultural Research and Development (CORAF/WECARD) under the auspices of the Forum for Agricultural Research in Africa (FARA). The regional focus of AfricalInteract is based on the Regional Economic Communities in the four sub regions of sub-Saharan Africa. Focal organizations coordinating regional activities are as follows: The Association for Strengthening Agricultural Research in East and Central Africa (ASARECA) – East Africa; Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN) – Southern Africa; Commission des Forêts d'Afrique Centrale (COMIFAC) – Central Africa; and Energie-Environnement et Developpment (Enda) – West Africa.



AfricalInteract

Policy**brief**

# Enabling research-to-policy dialogue for adaptation to climate change in Africa

## Research and Policies for Climate Change Adaptation in the West Africa Health Sector

### Context and Importance of Climate Change in West Africa Health Sector



treme high air temperatures that may contribute to deaths from cardiovascular and respiratory diseases, particularly among the elderly. The major killers in the region such as diarrhoeal diseases, malnutrition, vector-borne diseases malaria and other infectious disease are also highly climate-sensitive and are expected to worsen as the climate changes.

Some diseases occur in specific geographic environ-

The West Africa region is expected to experience a higher number of extremely dry and wet years and more severe droughts in the Sahel throughout this century (Boko et al. 2007). West Africa's socio-economic vulnerability to climate change correlates with poor health conditions. Climate variability plays a major role in increasing disease incidence or in 'triggering' periodic epidemics, e.g. of diseases such as meningitis and cholera. Climate change may directly impact on health through ex-

periments, for example, onchocerciasis and epidemics of meningitis are prevalent in the Sudano-Sahelian region. Other diseases remain limited to a few countries, such as Lassa fever in Côte d'Ivoire, Guinea and Sierra Leone and Buruli ulcer disease in the coastal countries between Côte d'Ivoire and Ghana (ECOWAS-SWAC 2007). Other less direct impacts on health operate through a number of distinct mechanisms including a) the impact of climate on food security and nutrition; b) impact on the affordability



of maintaining nutritional status and accessing health care and preventative tools against disease (e.g. mosquito nets); and c) its role in determining seasonal and annual demographic processes by causing seasonal labour migration, which is common in the Sahel, as well as movement of refugees, increasing the vulnerability of individuals to contracting certain infectious diseases such as HIV/AIDS, malaria and respiratory infections (Findley et al. 2005).

Evidence abounds that the climate is changing and there is a lot of uncertainty regarding the pace and extent of the change and the health impacts in communities. This uncertainty renders policy decision-making more complex and highlights the need for West Africa to build its knowledge and analytical base and to strengthen the capacity of national and regional institutions in developing the evidence base needed to address climate change adaptation issues.

### **Regional Policies related to Climate Change Adaptation in West Africa Health Sector**

A review of health considerations within the NAPAs of West African countries based on the principles of the Framework for Public Health Adaptation to Climate Change found that up to 95 percent of NAPAs considered health as one of the sectors on which climate change is considered to have impact (WHO 2011b). However, only 23 percent of these plans were comprehensive in their health-vulnerability assessment. For example, many NAPA's lack baseline epidemiological data for climate sensitive diseases and health conditions. The diseases most frequently listed in these NAPAs were diarrhoea, malaria, respiratory diseases, vector-borne diseases, meningitis and ocular and skin diseases.

Senegal: Senegal's key government policies and reports reflecting adaptation needs, priorities and planned actions include a National Adaptation Strategy to Climate Change (Adaptation Fund 2010: 13). In addition, Senegal has set up a National Committee on Climate Change (COMNAC) that reports to the Minister of State, to raise awareness of diffe-

rent groups on climate change, including the private sector, civil society, decision makers and academics. Ghana: The Government of Ghana has endorsed an Initial National Communication on Climate Change to the UNFCCC (Government of Ghana 2011□). Climate change adaptation and mitigation has been integrated into Ghana's Medium-Term National Development Policy Framework (2010-2013). One commitment within this plan is to ensure integration of climate change impacts into sectoral and district plans.

Nigeria: Nigeria's strategy for addressing the impacts of climate change is captured in its First National Communication on Climate Change. Furthermore, Nigeria has initiated the development of a National Adaptation Policy, Strategy and Plan of Action, which addresses human health issues (Federal Ministry of Environment 2010□).

### **Key research findings to be considered for informed decision making in Climate Change Adaptation in West Africa Health Sector**

Scientific evidence from research on climate change and health in West Africa has shown that the consequences include the impact of extreme weather events such as heat waves and flooding; the effect on infectious diseases (focusing mainly on vector- and water-borne diseases, food-borne diseases and HIV); the effect of changing levels of air pollutants and allergens; as well as malnutrition and population displacement.

Heat waves: Research on the association between weather patterns and daily mortality using Health Demographic Surveillance System (HDSS) time series in Burkina Faso and in Ghana, found strong associations between higher temperature and high daily mortality. In Burkina Faso, short-term direct heat effect was particularly strong on the under-five child mortality rate. The rate of cardiovascular death was highest in April during the hot dry season (March–May), and mean monthly temperatures were significantly related to mortality in elderly populations (Kynast-Wolf et al. 2010).

Water-related diseases: Since 1970, more than 12 cholera epidemic outbreaks have been reported in West Africa, from coastal to Sahelian areas (Constantin de Magny et al. 2012; 2007). An association was found between Cholera outbreaks and local variability of rainfall and the global climate variability quantified by the Indian Oscillation Index. Malnutrition: Malnutrition is one of the largest health crises in West Africa. Studies on malnutrition and climate change emphasize food security and the projection of malnutrition in association with climate projections (Akrofi 2012, Lloyd et al. 2011; Ramin and McMichael 2009; Haile 2005). A study in Mali examined and projected climate and health trends, coupling FEWS NET climate data and DHS health data, suggested links between livelihoods and each measure of malnutrition as well as links between climate and stunting (Jankowskaa et al. 2012).

Vector-borne diseases: The vectors – mosquitoes, ticks and flies – have been found to be climate sensitive in the West Africa region. Climate change is expected to lead to drastic changes in the geographical distribution, and seasonal transmission of vector-borne diseases, such as Malaria, Filariasis, Onchocerciasis, and Yellow fever.

Meningococcal meningitis: In West Africa, the predominance of meningococcal meningitis epidemics in the Sahel and their seasonal occurrence happens during dry, dusty times of the year, ceasing with the onset of the rains. Research on the relationship between climate and meningitis in West Africa, indicates that the frequency of epidemics is compatible with changes in the environment, particularly dust (Agier et al. 2013; de Longueville et al. 2013; Yaka et al. 2008).

### **Policy Options for consideration in the Health Sector of the West Africa Region**

Communication of information for evidence-informed policy formulation is poorly institutionalised in the West Africa region. There is limited awareness among health policymakers about climate change risks and how these relate to public health priorities. West Africans are already experiencing the impact

of climate change on health, therefore it is important that for formulation of national policies, health-focused institutions and organizations to collaborate and bring to the attention of policymakers, the serious health risks and impacts of climate change and the need for concrete and effective responses. The following Policy Options may be considered in the health sector in West Africa.

- I. Introduce comprehensive assessments of the risks posed by climate variability and change on population health and health systems.
- II. Support research to understand local and indigenous knowledge, coping and adaptation strategies and assess their value for public health.
- III. Encourage research for the development of early warning and early response systems including climate products and services for use in national policy and decision-making.
- IV. Conduct research on more effective methods for communicating scientific results to stakeholders, including but not restricted to the use of new technologies.
- V. Provide support for investments in routine observation of climate, environmental and health phenomena through HDSS for integration of climate and environmental data.
- VI. Train public health professionals and students to understand and demand appropriate climate and environmental information.
- VII. Strengthen health systems with integrated environment and health surveillance.
- vii Determine the most appropriate indicators for climate change and develop, test and validate models for these indicators in relation to disease transmission dynamics.
- viii. Establish the development of trans-disciplinary research-for-policy frameworks for improving management of disease risks and related health threats under climate change conditions.

### **Recommended Reading** \_\_\_\_\_

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