Impact of Climate Change on Health and Current Policy Responses in West Africa

West African Health Organization

Countries in the West Africa region are among the poorest in the world and also vulnerable to the impact of climate changes. According to the Intergovernmental Panel on Climate Change, West Africa has experienced an increase in temperature ranging between 0.2°C to 2°C between 1970 and 2004[1].

The years 2007 and 2008 were marked in the West African region by heavy rains causing flooding in several countries in the region, reflecting the occurrence of weather extremes. Cotonou in Benin and other cities on the West African coast are increasingly being invaded by sea water as a result of an increase in sea water level.

All the above elements have shown that the West African region is currently suffering the effects of climate change.

Our presentation is based on a review of regional and international literatures on the subject, review of research projects, abstracts of international conferences, and draft strategies and action plans developed in the region in response to climate change.

The main climate change related health issues of concern in the region

One of the human health consequences of climate change is the occurrence of diarrheal diseases. In West Africa, there were cholera epidemic outbreaks in several countries in 2008: Guinea Bissau, Senegal, Liberia, Benin and Togo. All these countries have a coastline and the year 2008 was very rainy. Constantin de Mangy and al., based on the data on Cholera in Kolkata in India and Matlab in Bangladesh have shown that some elements of change in oceans and the climate (chlorophyll A concentration level, rainfalls) were factors responsible for the of cholera epidemic outbreaks[2]. This suggests that cholera outbreaks in the West African region could be the effects of climate change on human health.

Another health consequence is meningitis. In the Sahel countries with the reduction in rainfall, the concentration of dust particles in the air increases. This seems to explain the recurrent annual epidemics of meningitis in countries like Burkina Faso and Niger. Indeed, these countries since the early 2000s have experienced annual epidemics affecting many persons and leading to many deaths. The occurrence of meningitis epidemics is also noted in the more humid countries like Guinea and Ghana.

The resurgence of vectorborne diseases and zoonoses is cited as an effect of climate change. Indeed, climate change will help increase animal reservoirs and the number of insect vectors, will extend the transmission cycle and will encourage the arrival of new insects or reservoirs in some regions because of the new climate conditions[3]. The analysis of the historical evolution of outbreaks of human African trypanosomiasis in the West African region is a clear example of the effect of climate change and human population[4]. The authors argue that today, cases of human African trypanosomiasis are no longer observed in areas with less than 1200mm of rainfall annually, which was not the case at the beginning of the 20th century. The authors conclude that the change in rainfall and population concentrations explain the current distribution of human African trypanosomiasis in the African region. Outbreaks in Guinea are located along the mangroves and central Côte d'Ivoire.

Another vector-borne disease is now prevalent in the countries of the region is yellow fever. Outbreaks of the disease were reported in 2008 and 2009 in several countries in the region. In 2008, epidemics were reported in Côte d'Ivoire, Burkina Faso, Guinea, Liberia and Sierra Leone. In 2009, cases were reported in Guinea and Sierra Leone. Entomological analysis, conducted after the epidemic in the city of Abidjan in Côte d'Ivoire in 2008, revealed that the concentration of the population due to war (massive influx from the North), poor hygiene conditions and abundant rainfall have favored the occurrence of the epidemic[5].

Outline of current and forthcoming responses in the region

Compared with other sectors, the number of ongoing or proposed responses in health in the region is short. Few are mentioned below.

- The West African Moonson Multidisciplinary Analysis project (AMAA) (www.amma-international.org).
- The 'interdisciplinary and participatory research on the interactions between ecosystems, climate and Societies in West Africa' (RIPIECSA).This is a project of the Institute of Development Research funded by the French Ministry of Foreign Affairs for the period 2007-2010 (www.acmad.ne/en/ programs/ripiesca.htm).
- The International Development Research Centre's 'Climate Change Adaptation in Africa' and 'Ecohealth' programmes.
- The initiative of the Economic Community of West African States for the implementation of a regional strategy and an action plan to reduce the vulnerability of the region to climate change[6].

Key challenges to effective responses in the region

The knowledge, assessment and strategies necessary to mitigate the effects of climate change on human health require multidisciplinary actions and the commitment of policy-makers.

At regional level, the implementation of a regional strategy and action plan already reflects the perception of climate change as a concern[7]. But the question is whether policies makers are actually fully knowledgeable about the issue. Lack of understanding of the issues, impact and consequences of climate change at regional and country level by policy and decision-makers still poses a challenge. The ECOWAS approach could contribute to this understanding but there is still need to enrich their analysis on the health impact of climate change. The two ongoing projects (AMAA and RIPISECA) in the region could help gather additional information.

An effective regional response must involve various actors, including political, environmental, agriculture, animal and human health, legal, and communications actors. This can become complex as stakes of the various players vary. The ability to make all these actors work together is key to effective regional responses.

Poor health care services in many countries in the region pose a major challenge. Many health facilities cannot cope with the high risk of mortality and morbidity from disease conditions (including cholera and other diarrheal diseases, malaria, tuberculosis, and malnutrition) associated with adverse climate change. Indeed, new diseases will emerge, as well as extreme weather events which may cause disasters on human health. This will need to reflect on the new health services to be offered, the skills to be acquired to provide these services, new health programmes and the organisation of the health system to implement. A major challenge will be to adapt the health system to climate change.

The commitment of the people in regards to adapting climate change strategies is a challenge. Indeed studies have identified cultural barriers to adaptation to climate change (Ostergaard Nielsen, J Choosing against Adaptation. Cultural barriers to climate change adaptation: a case study from (Northern Burkina Faso). In Global Environmental Change. Awareness raising and education programs will be needed.

Limited funding and the difficulty in accessing funding for regional action plans to implement adaptation strategies will be a challenge.

The region has some of the world's poorest countries. The high level of poverty makes its difficult to reduce people's vulnerability. The continuous civil war and political instability in the region does much to continue to increase people's vulnerability to climate change.

Examples of good practice in managing climate change and health risks in West Africa

Following several droughts in the 1970s in the Sahelian community – seven ECOWAS countries (Burkina Faso, Cape Verde, The Gambia, Guinea-Bissau, Mali, Niger, and Senegal), Mauritania and Chad joined forces and in 1973 created the Inter State Committee against drought in the Sahel (CILSS) – a partnership to pool resources in an effort to minimize the impacts of future droughts in their communities. Activities in the field of agriculture continue to help fight against the occurrence of droughts and famines and reduce their impacts on the nutritional status of populations. This organisation has two institutions, AGRHYMET in charge of agriculture, hydrology and meteorology and the Sahel Institute, specialized in the facilitation of exchange between the national systems.[7] Today, in view of the experience of these institutions, an agreement was signed between CILSS and ECOWAS to extend the activities of these institutions to other ECOWAS Member countries.

In Mali, a project to provide climate change information to farmers was launched over 25 years ago by the Mali national meteorological service. This project has evolved into an extensive and effective collaboration between the government, research institutions, extension services, and farmers and is still continuous. Farmers can measure climate variables themselves and incorporate climate change information into their decision making process[8].

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Some countries have introduced legislation on water (Senegal, Burkina, Mali) and national action plans for the integrated management of water resources.

Conclusion

This analysis reveals that the West African region is already suffering from the health impact of climate change. There is a need for health focus institutions and organizations, and other key stakeholders to join forces and bring to the attention of the policy-makers the serious health risks and impact of climate change and the need for concrete and effective responses. ◆

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