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An integrated approach to tackling climate change in Africa

To the Editor

Biological threats have the potential to kill millions, cost billions in economic losses, and create political and economic instability be it natural, accidental or man-made. Global assessments of the implication of climate change on biosecurity and the changes that might be experienced in natural or managed ecosystems are ramping up. A study by the Intergovernmental Panel on Climate Change, explains some of the factors that have contributed to Africa's susceptibility to climate change including high dependence on ecosystem goods for livelihoods, weak adaptive capacity, and less developed agricultural production system [1]. Managing this risk requires the integration of mitigation and adaptation strategies both in the management of ecosystem goods and services and the general agriculture production systems in Africa.

In tackling climate change in Africa, certain structures and systems must be put in place. Firstly, a sustainable system relies on quality scientific data! Africa is faced with a lack of quality data which has crippled activities in research, governance, planning, and interventions. Africans have a crucial role to play in bridging the data gap between research and implementation by developing community-centred data systems. In addition, it has been proven that climate change poses interesting challenges at the interface of science and policy and as such requires a two-edged approach to combating it. Yearly, decisions and policy pronouncements are made at regional, national and international levels. These decisions usually are well-planned and well-thought, but it is a thing of the past once the meetings are over due to limited or inadequate government financing. This underscores the significant

role of African youth in ensuring accountability from policy-makers toward attaining the set sustainable development targets.

With the re-emergence of infectious diseases like the Lassa Fever, Ebola, COVID-19, and recently, monkey-pox, it became more evident that environmental health can directly or indirectly influence human health. This could be attributed to climate change leading to an increase in zoonoses and vector-borne diseases. A study further unveils the major mechanisms by which this impact affects the human population: modifications in disease vectors; reservoir and pathogen lifecycles; diseases of domestic and wild animals and plants; alteration or destruction of habitats; trophic cascades; and disruption of synchrony between interacting species [2]. Over the years, veterinary, medical, and environmental health professionals have and continue to play a crucial role in optimal global health as it related to climate change. This interdisciplinary approach is known as 'One Health'. Hence, the One Health concept needs to be embraced to understand the impact of climate change on biological systems.

Moreover, there is an urgent need to promote the democratization of science, knowledge, and policy in Africa to encourage translational studies, formulation of best practices, and boosting local actions that will strengthen global health. Supporting environmental health agencies — which has been widely considered the weakest link of the three sectors in the health triad — will also help in furthering the 'One Health' agenda. By engaging interdisciplinary research with policy and action on relevant One Health themes in Africa, we would directly build resilient global health systems that are efficiently bolstered against the persistent scourge of re-emerging infections and constantly threatened by antimicrobial resistance [3].

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Medical Research Journal 2022; Volume 7, Number 4, 355–356, 10.5603/MRJ.a2022.0056, Copyright © 2022 Via Medica, ISSN 2451-2591, e-ISSN 2451-4101

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Finally, addressing the challenge of climate change requires a holistic approach from all relevant sectors which is more productive than each sector working independently. It is a fact that climate change impacts food security which is directly linked to edible animal products, comprehensive livestock systems, and vector-borne zoonotic pathogens commonly found in livestock [4]. With an increase in at-risk population groups in Africa and a predicted surge of vector-borne zoonoses, food-borne pathogens, and water-borne diseases due to global warming, Africa must adopt an integrated approach to mitigate the adverse effects of climate change across its borders.

Conflict of interest: *None.*

Funding: *None.*

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