

# GET AFRICA

AFRICAN NEWSLETTER ON EMERGING INFECTIOUS  
DISEASES & BIOSECURITY



# GET AFRICA

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Welcome to the second edition of the GET Consortium (Global Emerging Pathogens Treatment Consortium) newsletter. The newsletter is being produced after the 5<sup>th</sup> African Conference on Emerging Infectious Diseases and Biosecurity hosted by GET on the 7<sup>th</sup>- 9<sup>th</sup> August, 2019 at Sheraton Hotel, Abuja, Nigeria. The 4<sup>th</sup> conference held a year ago in Freetown, Sierra Leone. The theme of the 5<sup>th</sup> conference was Climate Change and Conflict: Implications for Emerging Infectious Diseases and Biosecurity in Africa. For that reason, you will read a number of articles that

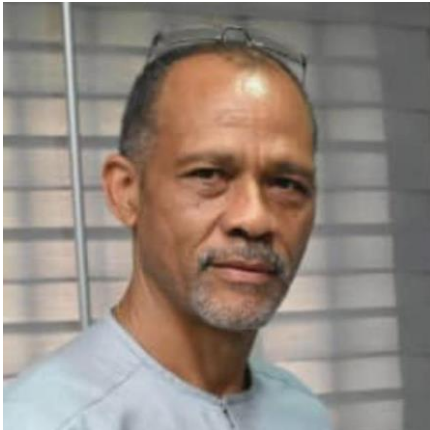
discussed this very important theme. This ranges from discussions on the association between climate change and conflict, health and biosecurity, to the impact of climate change on conservations. The various authors identified the need for more research, which leads us to a very pertinent theme titled “Conduct of Research in Conflict Situations”.

The one year between the 4<sup>th</sup> and 5<sup>th</sup> African Conference on Emerging Infectious Diseases and Biosecurity saw us witness the devastating consequences of infectious disease transmission such as in the case of the Ebola crisis in the Democratic Republic of Congo. Understanding and responding to infectious disease transmission dynamics requires our collective efforts to effectively use and deploy the wealth of knowledge and technological advances at our disposal. In the process, it is equally important to safeguard the dignity and human rights of individuals. For this reason, we solicited for an article from a theme from the London School of Hygiene and Tropical Medicine working in the Ebola crisis region to discuss community engagement in medical research -an essential grounding working principle when planning and implementing research in Africa.

The relationship between climate change and shifting infectious disease transmission patterns cannot be ignored. We need to continue investigating this complex relationship so that we can effectively predict future diseases outbreaks. The discourse on bio specimen and data sharing for the public good is gaining momentum in Africa and should continue as we reflect and deliberate on how best to strengthen Africa’s public health emergency response capabilities.

I trust that you will enjoy this edition of the newsletter. Please feel free to send comments.

Morenike Oluwatoyin Folayan  
*Editor*



It is a pleasure to be able to contribute once again to the GET Newsletter. As the Principal Investigator of GET, my concern has for a long time been focused on advocating for the integrity of the biosphere which is currently under threats. The negative consequences resulting from the change in climate is largely as a result of the human uncanny dysfunctional behavior towards the ecosphere that has now become threats on our own long-term security. Sadly, most governments are doing nothing to curb these behaviors because of the dangerous belief that human footprints can undergo unlimited expansion and can be 'decoupled' from the environment.

Jared Diamond in his classic book titled 'collapse', listed key environmental issues that have contributed to the collapse of past societies and threaten modern and future societies. These are deforestation and habitat destruction, climate change, build-up of toxins in the environment, water scarcity and pollution and the full use of earth's resources or massive human footprint.

There are evidences to show that the carbon dioxide concentration (ppm) increased astronomically with the slope of the rise becoming steeper with each year<sup>1</sup>. The global average yearly temperature is also rising steeply. For us to reclaim earth from catastrophe, we need to maintain the integrity of the ecosystem integrity as this is a key strategy to climate resilience for Africa. Forest destruction and devastation need to stop.

The anticipated changes in the global demography predicted many years ago is here with us. The explosion of the youth population in Africa, the uncontrolled population growth puts stress on the system due to the need for water, food and energy. This stress has impact on the climate and forest destruction. This increases the potential for conflicts including the insurgencies and strives reported in Nigeria. The impact has untoward outcomes on health especially for children, adolescents and women.

Humanitarian crisis will likely be on the rise with implications for strengthening the public health and rapid response systems especially in developing countries. Emphasis for governments of developed countries to understand the principle of the duty to care is also important at this critical time. Support of developing countries is less so a humanitarian gesture but more of a global duty and an ethical obligation are needed. The adoption of the one health operation principle by all governments<sup>2</sup> will enhance the effective use of the limited resources. This is a targeted advocacy agenda for the GET Consortium.

Akin Abayomi  
Principal Investigator,  
GET Consortium

<sup>1</sup> Carbon dioxide information analysis Centre. Changes in atmospheric CO<sub>2</sub> concentration.

<sup>2</sup>

## Understanding the Role of Community Engagement in Medical Research

Mark Marchant and Shelley Lees

*London School of Hygiene and Tropical Medicine, UK*

People who work in medical research often do so to make meaningful contributions to the lives of others through health. In fact, the motto of the public health university where we work is “*Improving health worldwide*”. Our university hosts projects on the health of immigrant workers in Thailand, school children in Uganda, mothers and infants in Brazil, and people who use addictive drugs in our neighbourhood in central London.

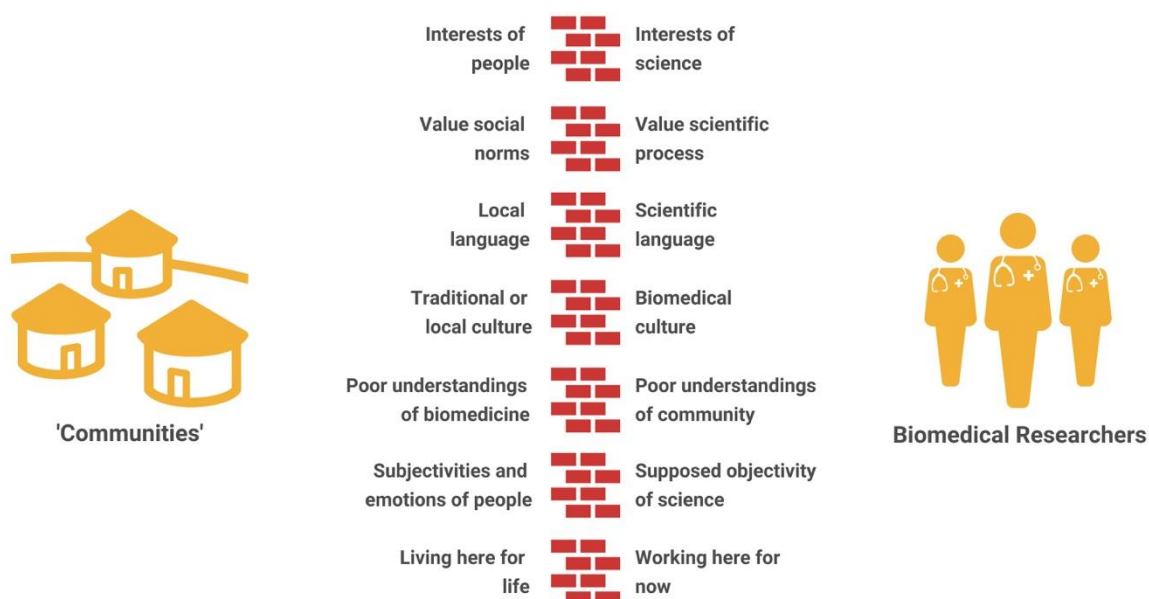
But many of the challenges in doing so stem from the very different lives of the researcher and the researched. Those who work in global health research are disproportionately male, white and from Western countries, wealthy by global standards, and have far more than average formal education.<sup>3</sup> By contrast, those whose lives they study are often on the opposite end of social, political and economic power structures, whether global or local. Even for health researchers working in their own countries of origin, many of these distinctions remain problematic in urban-rural divides, differences in accents, attire, income and education levels. The field of global health is so poorly representative that Tess van der Rijt and Tikki Pang ask the question: *How “Global” is Global Health?*

Some of the barriers to meaningful engagement between researchers and communities are products of the broader structural factors of access to opportunity (including health services) that make some of us more likely to be health researchers and others more likely to live lives characterised by illness.<sup>4</sup> Acknowledging those barriers explicitly can help us consider how we might address them in our work. What do the barriers between researchers and communities look like in practice?

**Figure 1:** lists a few, but we want to focus on language and trust.

<sup>3</sup> van der Rijt T, Pang T. How ‘Global’ is ‘Global Health’? *Global Health Governance* 2004; 4(3): 20-38

<sup>4</sup> Marmot, M. Social Determinants of Health Inequalities. *Lancet* 2005; 365 (9464): 1099–1104. DOI: 10.1016/S0140-6736(05)71146-6.



**Figure 1: Barriers to engagement between research (ers) and communities**

To start, researchers often do not speak the same language as members of the communities whose lives they are studying. This might be in a very literal sense, like when English-speaking Londoners work in rural Swahili-speaking Tanzanian communities. It also includes those working across linguistic divide within their own country of origin, like Kinshasa's French speakers in eastern Democratic Republic of the Congo's Swahili-speaking regions.

In a less literal sense, linguistic barriers can include differences that manifest in how we speak, even when we are speaking the same language in a literal sense. A Luo speaker with an accent from western Kenya might fare no better in building trust while doing research in central Kenya's Kikuyu highlands than the English-speaking Brit. Similarly, a native New Yorker may not engender trust among research participants in Oklahoma in her accent, even if everyone is speaking 'American English.'

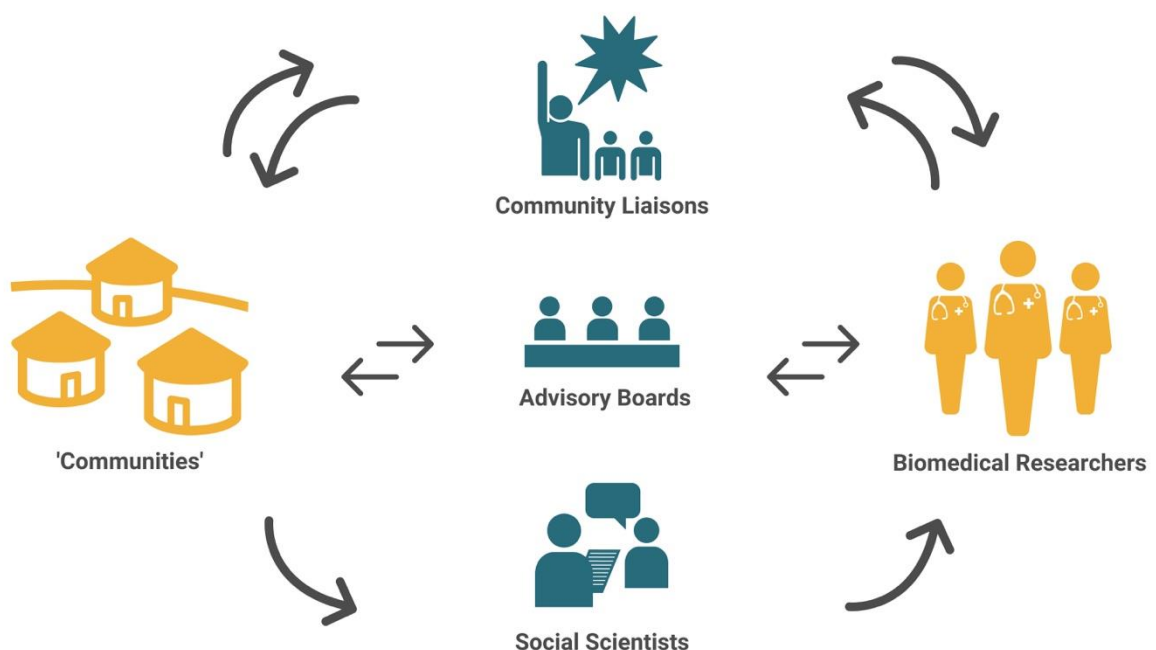
Fortunately for researchers, these barriers are not insurmountable, but nor are they purely linguistic. They are deeply politically entrenched. These barriers are erected *in* language by class, region, political alliances, ethnicity and education, and accents that sound like affluence. There is a universal quality to the very particular sets of suspicions held among those who live in the parts of the world that we call 'communities' about researchers from the world's London's and New Yorks and Kinshasas. Acknowledging that there is no shortage of boundary lines across which to view the disparity between the researcher and the researched helps us to deal with the complexity in thinking about how to design community engagement in research that accounts for power imbalances in a respectful, two-way dialogue.

We recently convened an [international consultative workshop](#) on community engagement in and for research in emergencies with partners from our ALERRT consortium (the African coALition for Epidemic Research, Response and Training), the Nuffield Council on Bioethics and the Wellcome Centre for Ethics and Humanities. One of our main takeaways was that community engagement is both an art and a process, a philosophy and a science. To achieve both the instrumental values (relevance, quality, impact) and intrinsic values (respect, recognition, equality) of engaging

communities in research, a flexible institutional structure is needed that accounts for the balance of power between researchers and the communities they seek to learn about.

**Figure 2:** gives an idea of some such structures. ‘Engaging communities’ is by nature a deliberative effort to lend structure to both listening to and speaking to communities. Understanding the language barriers described above, one way to acknowledge the various types: literal and non-literal language barriers is by involving possible interlocutors to facilitate better understandings on both sides of the dividing wall illustrated in **Figure 1**. What is central to the deliberative endeavour depicted in **Figure 2** is the importance of effective speaking and listening on both sides by communities and by researchers. These concepts by no means exhaust the possibilities for engagement but should give us ideas about how community engagement might be structured to respond to the barriers outlined above.

- For the *speech* of researchers and *listening* of communities, to explain and demystify the aims and activities of biomedical research in non-medical language, community liaisons can be instrumental. They are the voice of research for the ears of the community.
- For the *speech* of communities and *listening* of researchers, to explain and demystify community desires and contribution to research in language that is clear to outsiders, both social scientists and community liaisons can be instrumental. (The channels of communication will vary across community settings, diseases and other features but ideally researchers will learn from both social scientists and community liaisons.) They help bring the voices of the community for the ears of researchers.
- Additionally, to open a deliberative space where the views and ideas of communities and researchers are put in direct conversation, advisory boards can be instrumental. These boards will vary as well, sometimes made up of patients or research participants, or other stakeholders. Speaking and listening on both sides can happen when community advisory boards are well-structured and conversations facilitated appropriately.



**Figure 2: Structures to facilitate community engagement in biomedical research**

How do these considerations about clarifying language and communication relate to trust? We understand trust to be an attitude toward a person, people or entity that they are trustworthy. That is, the attitude of trust toward another is based on understandings and judgements about their actions and motivations—the properties of trustworthiness. In this way, trust is distinctly based on what we know about each other, and what we know about one another is mediated, enhanced and renegotiated in conversation. In the context of trust between researchers and communities, this conversation elucidates the actions and motivations of those with existing reason to doubt each other. Communities might worry that researchers want to exploit them to make money or steal their blood, while researchers might fear that participants only want to be involved to be paid and do not want to help answer important questions.

The lack of trust is related to a lack of understanding on both sides and exacerbated by the barriers to engagement illustrated in **Figure 1**. So, what can we do about it? Trust cannot be *willed* in that we cannot trust someone because we want to, but it can be *cultivated*. We can reorient ourselves to another person or institution in our attitude of whether they are trustworthy depending on:

- (a) What their actions are and
- (b) Whether we understand them as trustworthy.

Firstly, the actions that constitute research endeavours should be ethical and of value to those who participate in them. This is no small task. Secondly, it must be communicated as such to communities, with mechanisms for change where the community understands how the research should be conducted and emerge that conflict with protocols. It is only when good understandings of community perspectives and of biomedical research are reaching their counterparts across existing barriers that respect for all parties involved is possibly achieved.

A popular book for school teachers asks in its title: *Do You Know Enough about Me to Teach Me?*<sup>5</sup> The book's central thesis is that knowing more about your students makes you a better, more effective teacher. It would be very useful to consider this question for researchers, whether they are crossing international boundaries to collect data or not- Do you know enough about me to research me?, Where the answer is no, but researchers have skills to put to use, properly designed community engagement can be an effective mediator.

We cannot undo inequity, global or local, through a single research project's community engagement program, but we ought not ignore or mask its existence either. What we can do is make explicit the particular barriers that face a research endeavour and put in place tools to facilitate dialogue that respond to them. This makes for more relevant and higher quality research that holds greater promise for having a meaningful impact on the lives of the community members that health research purports to help. If global health research is to make meaningful contributions to people's lives, it must overcome the barriers between researchers and communities in structured efforts at a two-way dialogue. And researchers cannot just speak through community mobilisers but must listen through social scientists and community advisory boards as well. Their research will be of higher quality when they do or follow these steps.

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<sup>5</sup> Peters S. Do You Know Enough about Me to Teach Me: A Student's Perspective. The Peters Group Foundation. 2006.



Mark Marchant is a research fellow in political theory at the London School of Hygiene and Tropical Medicine (LSHTM). He studies community engagement, change and power relationships in health research. His is part of the African Coalition for Epidemic Research, Response and Training (ALERT), focusing on the consortium's community engagement and social science work package. Mark is also the community engagement lead for AViD, a five-country project on the anthropology of vaccine deployment, supporting the design of innovative community engagement strategies for qualitative health research.

Shelley Lees is a medical anthropologist. Over the past 20 years much of the focus of her research has been on gender and health in Tanzania. Drawing on her experience of conducting anthropological research in an HIV prevention trial, she is leading on anthropological research alongside two Ebola vaccine trials (EBOVAC and PREVAC) in Sierra Leone. She is also principal investigator on a study taking anthropological perspectives on vaccine deployment during emergent disease epidemics (AViD); and work package lead for the ALERT and EBOVAC3 consortiums.



*ALERT is part of the EDCTP2 Programme supported by the European Union under grant agreement RIA2016E-1612. ALERT is also supported by the United Kingdom National Institute for Health Research.*

## Impact of climate change on conflict and emerging infectious diseases in Africa

Ayodotun Bobadoye

**Chief Operating Officer, GET Consortium**

Climate change and variability is emerging as one of the most serious global challenge. It is considered to be one of the most severe threats to sustainable development with severe impacts on the environment, human health, food security, economic activities, natural resource management and physical infrastructure.<sup>6</sup> IPCC<sup>7</sup> defined climate change as any change in climate over time, whether due to natural variability or human activity. It is a measurable change in the statistical distribution of weather patterns over periods ranging from decades to millions of years. It may be a change in average weather conditions, or in the distribution of weather around the average conditions.

IPCC<sup>8</sup> reported that the warming of the climate system is unequivocal, as is now evident from observations of increases in global average temperature and ocean temperatures. Climate change is also evident in widespread melting of the snow and ice, and rising global average sea levels. In addition to these relatively gradual changes, climate change also has impacts in the form of more weather-related disasters such as increased tsunamis, drought and floods. Existing literature on climate change attributes rise in global temperature to increase in emission of greenhouse gases (carbon dioxide, methane, nitrous oxide, hydro-fluorocarbons and others) produced by human activities<sup>9</sup>. Although the Earth's atmosphere naturally contains greenhouse gases, it is believed that industrialization in the last millennium led to massive emission of greenhouse gases especially carbon dioxide into the atmosphere. This increased emission of greenhouse gases is causing anthropogenic greenhouse effect that leads to climate change. Anthropogenic emissions of carbon dioxide account for about 63% of the greenhouse gas warming effects in the long-term and for 91% in the short-term.<sup>10</sup>

African countries will be seriously affected by climate change. This is due to limited capacity for disaster management, limited financial resources and weak institutional capacity in most African countries<sup>11</sup>.

### Climate change and insecurity in Africa

The security implications of climate change are of increasing relevance to international peace and security. Continents such as Africa, where adaptation mechanisms are weak or uncoordinated, are especially vulnerable to insecurity related to water, food, energy, and natural disasters. This will be a major challenge not only for African countries but also international partners involved in climate change mitigation and adaptation efforts. Studies show that climatic events themselves are not the cause of conflict, but can be a trigger or accelerator of conflict. Climate change may

<sup>6</sup> Hulme M, Doherty R, Ngara T, New M, Lister D. African climate variability and change: 1900-2100. *Climate Research*. 2001; 17:145-168; Nicholson SE. A detailed look at the recent drought situation in the Greater Horn of Africa. *Journal of Arid Environments*. 2014; 103: 71-79.

<sup>7</sup> Intergovernmental Panel on Climate Change IPCC. Climate change: Impacts, adaptation, and vulnerability. Working Group II contribution to the IPCC 5th assessment report. 2014.

<sup>8</sup> Intergovernmental Panel on Climate Change (IPCC). Parry ML, Canziani OF, Palutikof JP, Van der Linden PJ, Hanson CE. (Eds). Impacts, Adaptation and Vulnerability. Contribution of the working group II to the Fourth Assessment Report of the Intergovernmental panel on Climate change, Cambridge University Press, ISBN 978-0-521-88010-7. 2007.

<sup>9</sup> Hulme M. *Op cit 6*

<sup>10</sup> IPCC. *Op cit 7*

<sup>11</sup> Rockstrom J. Water resources management in smallholder farms in eastern and southern Africa, an overview. *Physics and chemistry of the Earth part B- hydrology Ocean and Atmosphere*. 2008; 25: 275-283.

thus influence conflict by increasing the frequency and intensity of climate hazards that change the operating environment and, with it, the opportunities and grievances that influence conflict. A good example is the farmers and herdsman clashes in some West African countries (Nigeria, Niger and Chad). Climate is a critical factor in the activities of herdsman and farmers. The changing climatic condition that is increasing desertification and reducing access to water especially around the Chad basin is no doubt taking a toll on the survival of herdsman and farmers business. The desert encroachment from the Sahara towards the Sahel region and other associated climatic conditions have continued to affect the livelihood of herdsman as they push further south in search of available space, pitching them against farmers and host communities.

### **Impact of climate change on Emerging Infectious Diseases and Biosecurity**

Three components are essential for most infectious diseases: an agent (or pathogen), a host (or vector) and transmission environment. Some pathogens are carried by vectors or require intermediate hosts to complete their lifecycle. Appropriate climate and weather conditions are necessary for the survival, reproduction, distribution and transmission of disease pathogens, vectors, and hosts. Therefore, changes in climate or weather conditions may impact infectious diseases through affecting the pathogens, vectors, hosts and their living environment. Studies have found that long-term climate warming tends to favour the geographic expansion of several infectious diseases, and that extreme weather events may help create the opportunities for more clustered disease outbreaks or outbreaks at non-traditional places and time. Overall, climate conditions constrain the geographic and seasonal distributions of infectious diseases, and weather affects the timing and intensity of disease outbreaks. A warming and unstable climate is playing an ever-increasing role in driving the global emergence, resurgence and redistribution of infectious diseases. Many of the most common infectious diseases, and particularly those transmitted by insects, are highly sensitive to climate variation. New and resurgent vector-borne communicable diseases, including dengue, malaria, Hantavirus and cholera, are evident widely. Other infectious diseases, such as salmonellosis, cholera and giardiasis, may show increased outbreaks due to elevated temperature and flooding.

Climate change will continue to affect the health risk for human infectious diseases, limiting some disease transmission but creating opportunities for others. Comprehensive and transdisciplinary approaches are required to reducing vulnerability and identify the most effective adaptation measures for human society.



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Service Centre on Climate Change and Adapted Land Use.

## Climate change and its effects in West Africa

**Babatunde Saka**

*Global Emerging Pathogen Treatment Consortium*

*GET Africa*

West African economy is mainly subsistence farming, herding and fishing which are rain-fed and weather dependent. Thus, highly vulnerable to climatic changes. With an approximately 4 percent decrease in rainfall across West Africa annually (except for the Guinean coast), drought has plagued several parts of this region in the last few decades which has led to drying of otherwise wet areas suitable for herders.<sup>12</sup> This has taken a substantial toll on the livelihoods and food security of hundreds of thousands of people especially the Fulani herders close to the Sahel. The effects of climate change which includes unstable livelihoods and the potential for increased political instability is presently being manifested in full in Nigeria, Ghana and other West African countries.

A greater percentage of the population in most developing states depend on four key environmental resources that are very fundamental to crop and livestock production: fresh water, cropland, forests and fish.<sup>13</sup> Scarcity or shrinking of these resources as a result of misuse, over-use or degradation under certain circumstances will trigger off conflicts.

Attempts to sustain the increasing need for food with an apparently limited arable land has forced farmers into marginal lands traditionally utilised by pastoralists and thus heightened the competition between livestock and agricultural production. Continuously sustained lesser rains, expansion of the dessert, increased population pressure with attendant urbanization has led to the concomitant loss of the corridors between wet and dry season grazing areas and increasingly obstruct livestock movement.<sup>14</sup>

This is evident in the Sahelian and Sudano-Sahelian zones of northern Nigeria which have suffered environmental degradation caused by successive years of poor rainfall and recurrent droughts, exacerbated by the combined effects of natural population growth and in-migration. Classical cases include the Lake Chad basin and the Hadejia-Nguru Wetlands. Lake Chad is an extremely shallow lake which at its peak a few decades back provided fresh water and fishes for over 20 million people in different communities of Chad, Cameroon, Nigeria and Niger,<sup>15</sup> it has been susceptible to the growing climatic changeability and human bearings in the last few decades and is reported to have lost about 90% of its size.<sup>16</sup>

The loss of the lake's volume disrupted economic livelihoods and resulted into two conflict-prone variables: firstly, increased competition among the various livelihoods over the available water resources and secondly, increased human migration within the basin. However, both variables have equally increased over the years. This has intensified the frequency of migration and cross-border movement within the basin which has heightened resource and identity conflict in the North-Eastern region of Nigeria specifically through the incursion of Udawa nomadic cattle herders from the Republic of Niger as well as the migration of citizens of Chad and of Nigerians further south in search of better openings. It has been reported that these long-distance migrants,

<sup>12</sup> Livelihood Security. Climate Change, Migration and Conflict in the Sahel. ISBN: 978-92-807-3198-9.

<sup>13</sup> Homer-Dixon TF, Blitt J. Ecoviolence: Links among environment, population and security. Lanham: Rowman and Littlefield. 1998

<sup>14</sup> Climate-Related Conflicts in West Africa REPORT FROM AFRICA Population, Health, Environment, and Conflict

<sup>15</sup> Freedom C. Environmental Degradation, Livelihood and Conflicts: A focus on the Implications of the Diminishing Water Resources of Lake Chad for North-Eastern Nigeria

<sup>16</sup> Freedom C. *Op Cit* 26

usually referred to as Udawa, have been well-armed since the mid-1990s and are willing to use violence to assure their grazing.<sup>17</sup>

### Desertification

Desertification a resultant of wind erosion which renders affected land non-fertile is encroaching southwards from the Sahel. About 60 to 80mg in every hectare (4-5 mm) of topsoil was lost from the field by wind erosion in the Sahel region annually.<sup>18</sup> This top-soil loss is 5-8 times greater than the maximum value of soil loss that will inflict great impact on crop production in farmland of the United States.<sup>19</sup> Therefore, there is an increasingly unavailability of pasture as the attendant drought has dried up springs and streams across Nigeria's far northern Sahelian belt and large numbers of herders have had to search for alternative pastures and sources of water for their cattle leading to in-migration.

### Farmers-Herders Clashes

Perhaps the most prevalent security challenge cutting across West African countries other than ethnoreligious diversity is the farmers-herders crisis which has snow-balled into political instability in countries like Nigeria and Ghana. This phenomenon is multidimensional. Originally, the herders rear their cattle in the Sahel regions during the wet season and migrate down south towards the coastal region during the dry season. Before now, coastal part of Africa was more heavily infested with Tsetse fly which is causative of African Trypanosomiasis (AT) which is a disease with high morbidity and mortality in cattle. The heavy presence of tsetse especially during the wet season compels the herders to vacate and return to the Sahel as soon as the sign of rains come, a time which coincides with the beginning of the planting season in the coastal areas of West Africa. They return at the end of the rains which also coincides with the end of the planting period in this region. This migration pattern ensured the safety of planted crops all year round.

However, climatic variability and urbanization which has diminished the presence of tsetse fly in the West African coastal plains<sup>20</sup>, induced multiple-phased droughts in the Sahel as well as development of drugs effective for the treatment of AT has made the coastal regions more habitable and a haven for herders. This situation now makes the Fulani herder stay longer or even permanently in this coastal region. Cattle presence during the planting season predisposes to farm invasion or create route conflict and thence lead to farmer-herder conflict which is seen largely in this region of West Africa during this period. The situation has become militarized with weapons used by both sides during reprisal attacks. Farmers have resorted to rustling or poisoning cows in retaliation for ravaging farms. Herders have attacked whole villages in the dead of night to avenge poisoning of their cattle or rustling. About 7,000 cattle were reportedly rustled from farms and traditional herders in Northern Nigeria between October 2013 and April 2014.<sup>21</sup> Cattle rustling is reported in virtually all the northern states in Nigeria.<sup>22</sup>

<sup>17</sup> Blench, R. Natural resource conflict in north-central Nigeria: A handbook and case studies. Cambridge: Mallam Dendo Ltd. 2004

<sup>18</sup> Ikazaki K, Shinjo H, Tanaka U, Tobita S, Funakawa S, Kosaki T. Soil and nutrient loss from a cultivated field during wind erosion events in the Sahel, West Africa. *Pedologist*. 2012; 55: 355–363.

<sup>19</sup> Renard KG, Foster GR, Weesies GA, McCool DK, Yoder DC. Soil-loss tolerance. In *Predicting Soil Erosion by Water: A Guide to Conservation Planning with the Revised Universal Soil Loss Equation (RUSLE)*, *USDA Agric. Handbook*. U.S. Government Printing Office, Washington DC. 1997;703:12–13.

<sup>20</sup> Foresight. Infectious Diseases: preparing for the future. OFFICE OF SCIENCE AND INNOVATION. Cattle trypanosomiasis in Africa to 2030. <https://core.ac.uk/download/pdf/132683491.pdf>

<sup>21</sup> Bashir M. Hopes for an End to Cattle Theft, in: Daily Trust, 4 September, 2014.

<sup>22</sup> Olaniyan A, Yahaya A, Cows, Bandits, and Violent Conflicts: Understanding Cattle Rustling in Northern Nigeria, in: *Africa Spectrum*. 2016; 51(3): 93–105.



Dr. Babatunde Akeem Saka is a public health specialist with special interest in disease epidemiology and prevention. He works in multiple veterinary clinics, university veterinary teaching hospital, university slaughter slab as well as some agrochemical companies. In February 2018, Dr. Saka joined the GET Consortium as a researcher and in an administrative capacity as the Global Executive Secretary

## Malaria and climate change in Africa

Chiamaka H. Uwalaka

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Nigerian Institute of Medical Research, Yaba, Lagos, Nigeria**

Malaria is the most common parasitic infectious disease in the world affecting humans and animals.<sup>23</sup> About 90 percent of the world's death due to malaria occur in Africa.<sup>24</sup> Fifteen countries in Sub-Saharan Africa and India carried almost 80 percent of the global malaria burden.<sup>25</sup> From 2030 to 2050, climate change is expected to cause approximately 250 000 additional deaths per year, from malnutrition, malaria, diarrhoea and heat stress.<sup>26</sup> Despite the optimistic statement of the U.S. Surgeon General in 1967 that the war on infectious diseases was over and we had won, emergence of infectious diseases has not ceased and never will.<sup>27</sup> The WHO estimates that one-sixth of the illness and disability suffered worldwide is owing to vector-borne diseases, with more than half of the world's population currently at risk.<sup>28</sup> Vector-borne diseases are among the most well studied of the diseases associated with climate change, owing to their large disease burden, widespread occurrence and high sensitivity to climatic factors. The vector for malaria disease is the female anopheles mosquito with the majority of clinical disease for malaria caused by *P. falciparum* and mostly affecting young children, non-immune adults and pregnant women.<sup>29</sup> At a time when much money has been invested in scientific research in relation to detection, surveillance and protection against bioterrorist attack, the world is continuing to be under attack from nature's own biological weapons – pathogens, and of particular significance are those that are deemed to be emerging.<sup>30</sup>

Climate and weather change are already exerting strong influences on health: increased deaths in heat waves, and in natural disasters such as floods, as well as changing patterns of life-threatening vector-borne diseases such as malaria and other existing and emerging infectious diseases are observed.<sup>31</sup> Climate change is projected to alter the distribution of vector borne diseases and malaria is no exception. On Earth, human activities are changing the natural greenhouse resulting in climate change. Over the last century the burning of fossil fuels like coal and oil has increased the concentration of atmospheric carbon dioxide (CO<sub>2</sub>). This happens because the coal or oil burning process combines carbon with oxygen in the air to make CO<sub>2</sub>. To a lesser extent, the clearing of land for agriculture, industry, and other human activities has increased concentrations of greenhouse gases. Changes in land use are also important sources of greenhouse gas emissions. For example deforestation results in the emission of carbon dioxide to the atmosphere that was previously stored on the Earth's surface in the form of trees and other vegetation, or locked up in soils. This is why carbon dioxide is the most important gas in the man-made component of the greenhouse effect.

<sup>23</sup> Rossati A, Olivia Bargiacchi O, Vesselina Kroumova V, Marco Zaramella M, Annamaria Caputo A, Pietro Luigi Garavelli PL. Climate, environment and transmission of malaria. *LeInfezioni in Medicina*. 2016; 2: 93-104.

<sup>24</sup> CDC. Where Malaria Occurs. 2018. Retrieved from <https://www.cdc.gov/malaria/about/distribution.html> on 5/7/19

<sup>25</sup> WHO. Climate Change. 2019. Retrieved from: <https://www.afro.who.int/health-topics/climate-change> on 30/8/19.

<sup>26</sup> WHO. Vector Borne Diseases. 2019. Retrieved from: <https://www.who.int/news-room/fact-sheets/detail/vector-borne-diseases> on 31/8/19.

<sup>27</sup> Dong J, Olano JP, McBride JW, Walker DH. Emerging Pathogens: Challenges and Successes of Molecular Diagnostics. *Journal of Molecular Diagnosis*. 2008; 10(3): 185–197.

<sup>28</sup> WHO. *Op Cit 15*.

<sup>29</sup> Beeson JG, Brown GV. Pathogenesis of *Plasmodium falciparum* malaria: the role of parasite adhesion and antigenic variation. *Cellular and Molecular Life Sciences*. 2002; 59: 258-272.

<sup>30</sup> Millar C, Moor JE. Emerging pathogens in infectious diseases: Definitions, causes and trends. *Reviews in Medical Microbiology*. 2006; 17(4):101-106.

<sup>31</sup> *Op Cit 15*.

One of the major consequences of man-made greenhouse effect on climate change is increase in vector breeding capacity as the climate changes that have occurred over the previous century have significantly altered the areas climatically suitable for transmission. For example, in Africa, areas that have become unsuitable for transmission, mainly through drying, have approximately equaled those that have become suitable areas owing to increased temperatures and greater precipitation. Destruction of forests to create new human settlements can increase local temperatures by 3–4°C and at the same time create breeding sites for malaria vectors.<sup>32</sup>

The changes in malaria distribution on a global scale are still an area of active research. Despite the strong connection between malaria and climate, there is still quite a bit of uncertainty about future malaria transmission rates worldwide mainly because there are many other factors that affect the spread of the disease including socioeconomic development, drug resistance, and immunity.<sup>33</sup>

In 2015, the WHO Executive Board endorsed a new work plan on climate change and health. This includes:

- **Partnerships:** to coordinate with partner agencies within the UN system, and ensure that health is properly represented in the climate change agenda.
- **Awareness raising:** to provide and disseminate information on the threats that climate change presents to human health, and opportunities to promote health while cutting carbon emissions.
- **Science and evidence:** to coordinate reviews of the scientific evidence on the links between climate change and health, and develop a global research agenda.
- **Support for implementation of the public health response to climate change:** to assist countries to build capacity to reduce health vulnerability to climate change, and promote health while reducing carbon emissions.

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<sup>32</sup> Hamilton AC. The climate of the East Usambaras. In: Hamilton AC, Bensted-Smith R (Eds). Forest conservation in the East Usambara Mountains, Tanzania. IUCN, Gland. 1989:97-107.

<sup>33</sup> University Corporation for Atmospheric Research (UCAR). Climate Change and Vector Borne Disease. 2019. Retrieved from: <https://scied.ucar.edu/longcontent/climate-change-and-vector-borne-disease> on 30/8/19.

## Biosecurity, bio banking and emerging pathogens

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Emerging pathogens are newly identified pathogens or already known pathogens, they are pathogens that have spread to a new geographic region. A major public health concern of emerging pathogens is their potency to cause emerging infectious disease, which may spread rapidly and cause global epidemics. Frodsham and Hill<sup>34</sup> posited that infectious diseases represent a major health threat worldwide, and are a particularly significant burden to developing countries. Increase in travelling frequency, living in more densely populated areas, evolution of pathogens over time, close contacts with wild animals and intentional introduction into animal or plant population (bioterrorism) are some factors that may contribute to the emergence of pathogens. Combination of these factors may increase the tendency for these emergence infectious diseases to occur; examples of emerging infectious diseases include SARS, severe fever with thrombocytopenia syndrome, Ebola. Marburg Virus Disease, Nipah Virus Disease, Zika Virus, Hepatitis C and AIDS. The presence of an emerging pathogen and the associated emerging infectious disease in no small measure creates constraints in commercial trade and panic within the society. The protection of humans, plants and the environment and its biological diversity from an emerging pathogen could be a function of an efficient solid biosecurity system and bio banking.

For Nordmann<sup>35</sup>, biosecurity is a set of preventive measures for the risk of transmission of infectious diseases and use of active methods to avert biological terrorism or other disease outbreaks. Biosecurity ensures that scientist who have access to pathogens of consequence or sensitive information regarding the virulence of pathogen, host-range, adaptation for dissemination, colonization, resistance to antimicrobial agents do not use it for that will be detrimental to health or have adverse effect on the environment. The practice of biosecurity requires the collaboration and cooperation among different stakeholders both at the sub-national, national and international levels; such collaboration promotes information dissemination and adherence to standard in the bio security sector. Biosecurity systems are more likely to be efficient if there included as part of national and international strategies. Codex Alimentation Commission World Organization for Animal Health and the Commission on Phytosanitary Measures are relevant stakeholders that develop standards for different biosecurity sectors.

Biobank on the other hand is an ambiguous term that describes a biorepository that accepts the biological collections of human, animal, plant or microbial samples. Bio-banking involves the storage of data which can be used for research and clinical care. The term biobank, should only be applied to sample collections standards.<sup>36</sup> Biobanks helps in the understanding of the etiology multi-factorial diseases: it has extended into genetic information of a pathogen. Gotweiss and Zatloukal,<sup>37</sup> outlined the types of bio-banking to include clinical case/control biobanks, population-based biobanks, population isolate bio-banks and virtual biobanks. Biosecurity and bio-banking can help reduce the risk of exposure to pathogens and facilitates the study of these pathogens respectively. Inadequate capacity to detect, monitor and report emerging pathogens and/or emerging infectious disease are features of inefficient biosecurity system; this facilitates

<sup>34</sup> Frodsham AJ, Hill AV. Genetics of infectious diseases. Hum. Mol. Genet. 2004; 13 (Spec No 2): R187–R194.

<sup>35</sup> Nordmann BD. Issues in biosecurity and biosafety. Int J Antimicrob Agents. 2010; 36(Suppl 1): S66–S69

<sup>36</sup> Hewit R, Watson P. Defining Biobank Biopreservation and Biobanking. 2013; 11(5):309-315

<sup>37</sup> Gottweiss H, Zatloukal K. Biobank governance: trends and perspectives. Pathobiology 2007; 74: 206–211.

disease movement and increase the risk of exposure to pathogens which may have adverse effect on humans, plant and the environment.

Funding is a major challenge in the realization of efficient biosecurity system; this is a call to action for elected leader to prioritize efficient biosecurity system especially in developing countries. Poor biosecurity in one country or region may impact negatively on the progress made with the control of emerging pathogens. This underscores the importance of collaboration between countries, and globally recognized organizations in the biosecurity sector. Such networking will enable countries to harmonize and apply international standards in biosecurity practices, creates access to relevant information concerning emerging pathogens will improve biosecurity practice all these will help to increase the effectiveness of biosecurity in such countries.

The absence of biobanks or proliferation of sub-standard banks make the study of the epidemiology of infectious disease difficult. An earlier report has showed that funding, sustainability, dedicated staffs, risk management, IT requirement are some factors responsible for poor bio-banking. Jones et.al<sup>38</sup> opined that the actuality of infectious diseases and the perpetual challenge they pose for researchers and physicians are reflected in both the high prevalence of and the high mortality associated with existing and growing incidence of emerging infectious disease. Biobanks gives scientist the opportunity to embark on detailed research on pathogens. Such study will facilitate future interventions against infectious disease or their re-emergence.



Oghogho Umunna was born in Benin City Edo State. She received a B.sc in Microbiology from Benson Idahosa University and graduated with a second class upper. In 2016, she did her National Youth Service Corps at the Institute of Human Virology, Nigeria where she worked as an administrative assistant to senior medical research officers. She is passionate about healthy living and wellness which leads her to carrying out several research projects in nutrition and health care service awareness. Her most recent project was on HIV awareness and utilization of health care services among female sex workers. She was an attendee at the just concluded 5th Africa conference of the Global Emerging pathogen Infections Treatment Consortium.

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<sup>38</sup> Jones KE et al. Global trends in emerging infectious diseases. *Nature*. 2008; 451:990–1993.

## Travel Medicine and Biosecurity

**Ade Alakija**

*Q-Life Family Clinic,  
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Biosecurity is a strategic and integrated approach to analysing and managing relevant risks to human, animal and plant life and health and associated risks for the environment. It is based on recognition of the critical linkages between sectors and the potential for hazards to move within and between sectors, with system-wide consequences. The overarching goal of biosecurity is to prevent, control and/or manage risks to life and health as appropriate to the biosecurity sector.

In Nigeria, a total of 17.2 million travellers travelled through Nigerian airports in 2018 with the total number of domestic passengers being 12,791,639 and 4.4million being international.<sup>39</sup> Globally, 1.4 billion travellers crossed international borders in the same year.<sup>40</sup>, that is an increase of 6% over the previous year. This translates to about 4 million people daily crossing international borders which could also translate to a potential of 4 million 'bioterrorists' a day carrying pathogens to destination countries and carrying pathogens back home with risk to family, friends, co-workers and the nation. The Traveller is always at risk to these 'bioterrorist' (pathogens) either at home, in transit or at the destination country. The destination country is also at risk from travellers. With climate change and increasing conflict, the travellers risk is increasing daily. An example of this was when World Health Organization declared Ebola as a public health emergency of international concern. This, like many other pathogens of high consequence, are a flight away.

How are these travellers monitored? This is what Travel Medicine is about. Travel Medicine is an Interdisciplinary specialty concerned with prevention, early detection and research of health problems associated with Travel. It encompasses all the traditional disciplines of medicine e.g. Tropical medicine, Infectious diseases, Gastroenterology Internal Medicine, Paediatrics, Psychiatry, Emergency medicine, Obstetrician & Gynaecologist, Pharmacology, Public Health, Clinical microbiology, Nursing, Dermatology. All the travel related aspects of these disciplines are combined to form the Interdisciplinary fields for Travel Medicine. That is Preventive Medicine + Epidemiology + Public Health + Treatment = Travel Medicine.<sup>41</sup> In the Pre-travel consultation, epidemiological data is collected and then a risk assessment is done based on the travellers country of stay to the countries of visit, Advice is given to reduce exposure to health risk and relevant immunisations, Chemoprophylaxis and advice for self- treatment if necessary, especially to remote areas are given.

The International Society of Travel Medicine (ISTM) is a worldwide organization of Travel Medicine that is committed to the promotion of healthy and safe travel. ISTM was established in 1991 (Atlanta, USA) with over 900 delegates in attendance. ISTM advocates and facilitates education, service and research activities in the field of Travel Medicine. ISTM has now grown to more than 4,000 members in 96 countries and is the largest organisation of professionals dedicated to the advancement of the specialty of travel medicine<sup>42</sup>. Travel medicine experts believe that with

<sup>39</sup> The Punch. 17.2 million passengers travelled through Nigeria airports in 2018. Available at: <https://punchng.com/17-2-million-passengers-travelled-through-nigerias-airports-in-2018/>.

<sup>40</sup> The nation. World tourist numbers hit 1.4 billion in 2018: two years ahead of forecast. Available at: <https://www.thenational.ae/business/travel-and-tourism/world-tourist-numbers-hit-1-4-billion-in-2018-two-years-ahead-of-forecast-1.816578>.

<sup>41</sup> Infectious Diseases Society of America. The practice of travel medicine guidelines. Available at: [https://www.researchgate.net/publication/6689096\\_The\\_Practice\\_of\\_Travel\\_Medicine\\_Guidelines\\_by\\_the\\_Infectious\\_Diseases\\_Society\\_of\\_America](https://www.researchgate.net/publication/6689096_The_Practice_of_Travel_Medicine_Guidelines_by_the_Infectious_Diseases_Society_of_America)

<sup>42</sup> The International Society of Travel Medicine. Activities. Available at: <https://www.istm.org/content.asp?contentid=23>.

simple basic health prevention practices even for Ebola you can travel safely and stay Healthy throughout your round trip. Those countries that took proper protective measures and monitoring of Ebola quickly closed out the disease. It is all about Proper preventive measures. This is applicable to the prevention of other diseases of international significance. And this can be achieved by increased awareness of the populace and government to the importance of Travel health care to limit diseases crossing international borders.



Dr. Adetokunbo Omodele Alakija is a medical doctor whose speciality is Travel Medicine and is the foremost travel medicine consultant in Nigeria. He is currently the medical director of Q-Life Family Clinic. He is a graduate of the College of Medicine University of Lagos, has an MBA from IESE Spain, a Diploma in Travel Medicine from The Royal College of Physicians and Surgeons Glasgow and is a full member of the Faculty of Travel Medicine MFTM (RCPS)Glasg. He also has the certificate in Travel CTH<sup>®</sup> from the International Society of Travel Health.

## Update on Human Genome Editing

<sup>1</sup>Jennifer Ambe and <sup>1</sup>Muhammed Afolabi

<sup>1</sup>*International Coordinator, GET Consortium*

<sup>2</sup>*Vice- Chair, ECEPAS Working Group, GET Consortium*

In November 2018, the announcement of the genetically engineered twins by Dr Jiankui HE prompted a resounding global outcry by scientists and ethicists. The Ethics, Community Engagement and Patient Advocacy Support (ECEPAS) Working Group and other GET contributors released a strong statement in December 2018 (ECEPAS, 2018). Reference to this statement has been used in the background paper published by the World Health Organization's Expert Advisory Committee on Developing Global Standards for Governance and Oversight of Human Genome Editing.<sup>43</sup>

Biotechnologies, to include CRISPR-Cas9, have become accessible and affordable. This new technology has been improved upon from the original 1970's versions which enabled the manipulation of deoxyribonucleic acid (DNA). DNA are building blocks containing instructions for genetic make-up, which determines different species and is also passed onto offspring.<sup>44</sup>

These emerging technologies give rise to ethical, safety, social and legal concerns. There should be a distinction in the use of these technologies between the prevention of diseases and uses such as the demand for certain human characteristics, such as designer babies. Although, genome editing can offer possible cures for genetic diseases, the concern is for the associated risks. These risks raise ethical concerns due to the alteration of human genes that can be passed onto future generations. This is known as *human germline editing* and differs to *somatic cell gene editing* of non-reproductive cells. (National Centre for Advancing Translational Sciences, n .d). Human embryonic or germline editing causes a sequence of change that goes forward to future generations, not just the embryo. This poses risks that are unknown. Other ethical questions raised are questions surrounding the accessibility to technology for all who may need it (justice and equity), social value and self-determination.<sup>45</sup>

Due to the outcry, the World Health Organization stepped in to ensure public discourse, in order to arrive at a governance framework for genome editing. The first meeting for this framework took place in March 2019 where 18 multi-disciplinary experts converged. The committee were briefed about genome editing, direct and indirect implications, positive impacts and the ability to treat and prevent genetic diseases as well as the advantages for food security and environmental health. The committee decided on three outcomes: a global, central repository for all clinical research; the immediate engagement with any scientist involved in clinical applications using human germline genetic editing; inclusivity and a desire to hear from all stakeholders.<sup>46</sup>

The advisory committee held a second meeting on August 29th 2019 and launched the first phase of a global registry to track all research on human genome editing. This will be housed on the

<sup>43</sup> Tuerlings E. World Health Organization Expert Advisory Committee. 2019. Retrieved from: <https://www.who.int/ethics/topics/human-genome-editing/WHO-Commissioned-Governance-1-paper-March-19.pdf> on September 1, 2019.

<sup>44</sup> National Human Research Genome Institute. Deoxyribonucleic Acid. Fact Sheet. 2015. Retrieved from: <https://www.genome.gov/about-genomics/fact-sheets/Deoxyribonucleic-Acid-Fact-Sheet>. Accessed: August 31, 2019.

<sup>45</sup> Tuerlings E. *Op cit* 34.

<sup>46</sup> World Health Organization. Advisory Committee on Developing Global Standards for Governance and Oversight of Human Genome Editing. Report of the first meeting. 2019. Retrieved from: <https://www.who.int/ethics/topics/human-genome-editing/GenomeEditing-First-Meeting-Report-FINAL.pdf?ua=1>. Accessed: on August 31, 2019.

International Clinical Trials Registry Platform.<sup>47</sup> The ECEPAS Working Group will continue to provide an African perspective on bioethics issues related to human gene editing to the WHO Advisory Committee as well as lend our voices in other global ethics debates.



Jennyfer Ambe works to support the Sahelian region through empowerment in the areas of education, public health (access to health care and other resources), peace, security and non-proliferation of small arms and light weapons through outreach, programmatic gender response capabilities and the de-escalation of gender-based violence. She is the International Coordinator for the GET consortium. She assisted with the registration of the consortium, set up the working groups and coordinated administrative tasks. She is active on CASE and ECEPAS working groups and has a keen interest in bioethics and deterring bio-violence.

Muhammed Afolabi obtained a medical degree from the University of Ibadan and a master's degree in Public Health from Obafemi Awolowo University, both in Nigeria. He is a Fellow of West African College of Physicians in Family Medicine. He obtained a PhD from the London School of Hygiene & Tropical Medicine (LSHTM) in 2015. Muhammed is currently an Assistant Professor with LSHTM where he leads on the evaluation of a two-dose Ebola vaccine regimen in adult and paediatric populations. Muhammed's research antecedents at the Medical Research Council Unit, The Gambia (MRCG) were in the evaluation of HIV and malaria vaccines in adult and pediatric populations.



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<sup>47</sup> World Health Organization. WHO launches global registry on human genome editing. 2019. Retrieved from: <https://www.who.int/news-room/detail/29-08-2019-who-launches-global-registry-on-human-genome-editing>. Accessed: August 31, 2019.

## Statement from the Ethics, Community Engagement and Patient Advocacy Working Group and other GET Contributors December 2, 2018

The Ethics, Community Engagement, Patient Advocacy and Support (ECEPAS) working group operates under the Global Emerging Pathogens Treatment Consortium (GET) (<https://www.getafrica.org>) which aims at promoting and protecting the welfare of and respect for research participants, especially in emergency research. ECEPAS considers it extremely important to provide a statement following news of the birth of the first genetically edited twin girls in China.

### Background

Dr Jiankui HE released a public announcement at the recently concluded second International Summit on Human Genome editing in Hong Kong. Dr Jiankui HE claims to have edited the genes of human embryos using CRISPR/Cas9 technology for a total of seven couples. The twin girls whose DNA were altered by HE, were born this month.<sup>48</sup> Dr HE has been on leave without pay since February 2018 (through 2021) from the Southern University of Science and Technology (SUSTC). SUSTC has issued a press release distancing themselves from his claims and stating that they are deeply shocked by what has occurred. It has also been stated that the conduct by Dr HE is a serious academic and ethical violation of prescribed codes of conduct.<sup>49</sup> Dr HE stated that, in providing fertility treatments, he edited the genes of embryos in order to provide the gene-edited babies with the ability to resist HIV infection. Although the couples were said to have voluntarily consented to the gene editing experiments, there is no evidence of ethics approval by any institutional review board or committee supporting the conduct of this interventional research. All seven couples also remain anonymous. At the time of this memo, there has been no independent verification of Dr HE's claim.

The Oviedo Convention on Human Rights and Biomedicine held in Spain in 1997, produced an international, legal document which clearly addresses human rights and ethics in the biomedical space. Article 13 of the document states that:

***“An intervention seeking to modify the human genome may only be undertaken for preventive, diagnostic or therapeutic purposes and only if its aim is not to introduce any modification in the genome of any descendants.”***<sup>50</sup>

### ECEPAS Statement

The ECEPAS Working Group would like to state that this event has caused alarm and debate amongst African bioethicists. This trial sets a dangerous precedent and sends the message that a scientist can bypass established regulatory and ethical systems and conduct relatively high-risk research on the side-lines, in pursuit for new knowledge and fame, without due consideration of the welfare and respect for the research subjects and the society at large. The alteration of genes from embryos can be passed down to future generations, posing unknown risks for present and future generations. Questions also arise as to HE's choice of gene modification technology, a method with relatively unknown levels of risk in managing a condition which has alternative therapeutic interventions not

<sup>48</sup> Marchione, M. Chinese researcher claims first gene-edited babies. Associated Press. November 26 2018. Retrieved from <https://apnews.com/4997bb7aa36c45449b488e19ac83e86d>.

<sup>49</sup> Southern University of Science and Technology. (SUSTC) (2018, Nov 26). Statement On the Genetic Editing of Human Embryos Conducted by Dr. Jiankui HE, Retrieved from [http://sustc.edu.cn/en/info\\_focus/2871](http://sustc.edu.cn/en/info_focus/2871).

<sup>50</sup> Oviedo Convention. The Oviedo Convention: protecting human rights in the biomedical field. Spain. 1997 Retrieved from <https://rm.coe.int/168007cf98>



requiring gene edition. There was also no ethics or scientific clearance, debate, peer review feedback; instead these fundamental requirements guiding the conduct of biomedical research appear to have been completely circumvented. In addition, lack of transparency and total neglect for public engagement and inclusive research (all of which are particularly important to conduct of biomedical research in middle and low-income countries including Africa) attract negative societal implications. Possible follow-up studies may endorse this unethical practice and future actions, which could follow the same path. Deliberate violations of established laws and regulations/frameworks set a dangerous systematic precedent in the use of readily available technologies.

ECEPAS working group hereby condemns these actions and advises colleagues in similar pursuits to respect and abide by ethics regulations and internationally acceptable laws guiding the conduct of research on human genome editing.

## Active Youth engagement is critical to preventing further insults to Earth

Aliyu Abdulquadri

I was privileged to have participated at the 5<sup>th</sup> African Conference on Emerging Infectious Diseases and Biosecurity that held from the 7<sup>th</sup> to 9<sup>th</sup> of August 2019 at the Sheraton Hotel, Abuja. I learnt a lot more about earth damage and the impact of human activities on the changes in the climate we are experiencing. I was also perturbed by the evidence that showed that though the damage to the earth resulting from multiple sources of insults and toxins results from huge abuse from the global North, the impact of the damage are worse felt by the people in Africa. Sadly, the continent is least prepared from the perils that are resulting from the damaging insults.

I listened as industry leaders, research experts, healthcare practitioners and government officials showed evidence after evidence, the realities of these damages in our everyday lives, including the resulting food insecurity, conflicts and climate changes. They reiterated the need for concerted collaborating efforts to mitigate the risk and impact of climate change and conflicts much like the concept of "One Health" which advocates the collaborative efforts of multiple disciplines working locally, nationally and globally to attain optimal health for people, animals and the environment.

My highlight of the 3-day event was the presentation delivered by the Director of the Department of Climate Change, Dr. Yerima Tarfa, who highlighted the role of youths in tackling the challenges associated with mitigating the impact of changes in the climate and conflict. The Department launched the West African Science Service Centre and Climate Change and Adaptive Land Use project to facilitate the engagement of young persons in Climate Change and Conflict response.

I do agree about the need for active engagement of young persons to design innovative culturally appropriate solutions to the rising problems associated with Climate Change and Conflicts. I however left the conference knowing there is poor public education about the issues I learnt at this conference. Without public education, the insult of the Earth will continue. Youth engagement needs to be a lot more than plans and programs. It requires support for youth to do a lot more with the available information for themselves. It requires using in multiple existing platforms – formal and informal schools, youth centres, and social media – to motivate young persons to help make the needed changes. Youth engagement now is the best approach to preserve the future.



Abdulquadri is an aspiring bioinformatics scientist with a first class degree in Cell Biology & Genetics from the University of Lagos. He has a passion for research, information technology and youth involvement in Leadership and Healthcare. Abdulquadri was a participant at the first-ever Health Designathon in Nigeria - organized by 4YouthByYouth - where he collaborated with members of his team to design innovative solutions for promoting HIV Self-testing among youths in Nigeria. He is also a recipient of the "Future Scientist Award" at the 5th edition of the NIMR Scientific Conference.

## International conferences

- 6th World Congress on Green Chemistry and Recycling October 14-15, 2019 Seoul, South Korea
- 6th Global summit on Climate Change October 20-21, 2019 Amsterdam, Netherlands
- 10th World Convention on Recycling and Waste Management October 21-22, 2019 Sydney, Australia
- 2nd Annual Congress on Environmental Pollution and Health October 21-22, 2019 Sydney, Australia
- 3rd International Conference on Natural Hazards and Disaster Management October 23-24, 2019 Tokyo, Japan
- 4th International Conference on Ecology, Ecosystems and Coastal Management October 23-24, 2019 Frankfurt, Germany
- 8th International Conference on Biodiversity Conservation and Ecosystem Management November 11-12, 2019 Tokyo, Japan
- 9th International Conference on Biodiversity and Conservation 12-13 November 2019 Sydney, Australia
- World Summit on Renewable Energy and Resources November 18-19, 2019 Rome, Italy
- 4th International Conference on Coastal Zones & Ocean Science November 25-26, 2019 Valencia, Spain
- 3rd World Congress on Environmental Toxicology and Health Safety November 25-26, 2019 Valencia, Spain
- 7th Global Summit and Expo on Pollution Control December 02-03, 2019 Paris, France
- 3rd World Congress on Environmental Toxicology December 03-04, 2019 London, UK
- International Conference on Global Warming and Natural Disasters December 09-10, 2019 Bangkok, Thailand
- International Conference on Plant Science February 10-11, 2020 Amsterdam, Netherlands
- Human microbiomes 2020 Rome, South Korea
- 15th World Convention on Waste Recycling and Reuse February 17-18, 2020 Melbourne, Australia
- 12th World Congress and Expo on Recycling April 22-23, 2020 Berlin, Germany
- 8th World Congress and Expo on Green Energy June 15-16, 2020 London, UK
- 6th World Conference on Climate Change, scheduled during September 9-11, 2019 at Berlin, Germany

For more details: <https://www.conferenceseries.com/environmental-sciences-meetings>

## Grant opportunities

1. Macpac's Fund for Good Grant Program to Support

<https://www2.fundsforngos.org/latest-funds-for-ngos/macpacs-fund-for-good-grant-program-to-support-environmental-projects/>

Deadline: 31st October 2019

2. Funding Call on Renewable Energy Solutions in Mozambique

<https://www2.fundsforngos.org/environment-conservation-climate-change-and-ecology/funding-call-on-renewable-energy-solutions-in-mozambique/>

Deadline: 10 October 2019

3. Call for Projects Addressing the Human Impact of Climate Change – United States

<https://www2.fundsforngos.org/media/call-for-projects-addressing-the-human-impact-of-climate-change-united-states/>

Deadline: 1 October 2019

4. Climate, Food and Farming – Global Research Alliance Development Scholarship (CLIFF-GRADS) Program 2019

<https://opportunitydesk.org/2019/08/30/climate-food-and-farming-global-research-alliance-development-scholarship-program-2019/>

5. USAID/Uganda announces Voluntary Family Planning for Improved Reproductive Health and Development (FP4HD) Activity

<https://www2.fundsforngos.org/latest-funds-for-ngos/usaaid-uganda-announces-voluntary-family-planning-for-improved-reproductive-health-and-development-fp4hd-activity/>

Deadline: 30 September 2019

6. Research Fellowships for Health Professionals is now open

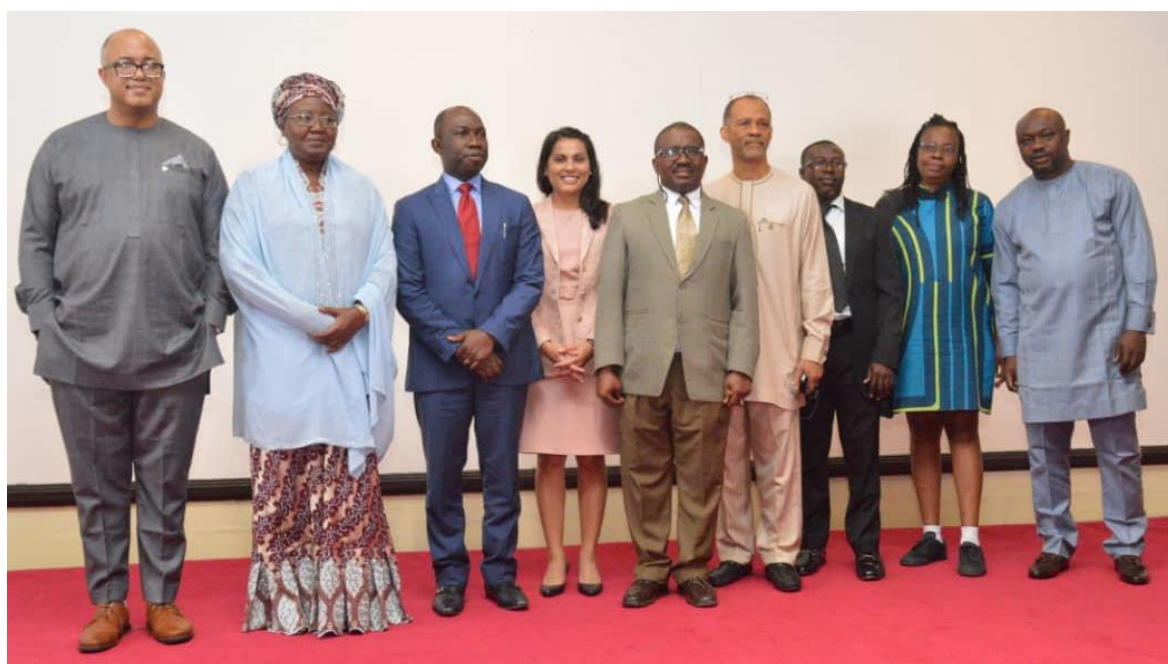
<https://www2.fundsforngos.org/fellowships/research-fellowships-for-health-professionals-is-now-open/>

Deadline: 7 January 2020Deadline: September 30, 2019.

## PHOTOFEAST

### 5<sup>TH</sup> ANNUAL CONFERENCE

7<sup>TH</sup>-9<sup>TH</sup> AUGUST 2019 @ SHERATON HOTEL, ABUJA











## SAVE THE DATE FOR THE NEXT CONFERENCE



**GET** Global Emerging Pathogens Treatment Consortium *Presents*

**6th African Conference on One Health and Biosecurity**  
Lagos, Nigeria.

**Theme:**  
Biosecurity Threats in African Megacities

**Date:**  
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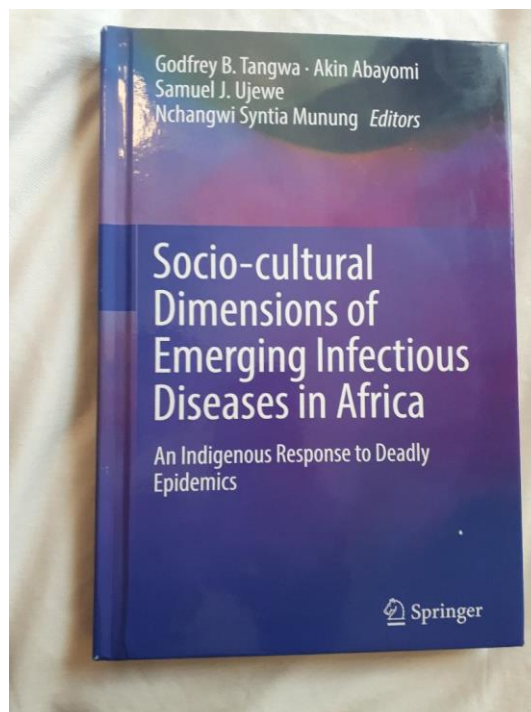
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## INTRODUCING THE BOOK PUBLISHED BY THE GET CONSORTIUM

This book is conceived as an inter-and intra-disciplinary publication with contributions from several disciplines. Chapters address disciplines in medical science and biomedical research, research ethics, regulation and governance, science and health communication and social sciences.

The book captures details on the art, science, preparedness and evolution of deadly epidemic pathogens affecting Africa. It examines the challenges with science education and communication in Africa and local, regional and global health and governance. The chapters provides insight into reasons why some global health responses in Africa had worked while others had not.



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