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COMMONWEALTH MEDICAL ASSOCIATION

INTERNATIONAL SYMPOSIUM ON CLIMATE CHANGE AND HEALTH

5TH – 6TH NOVEMBER 2009

DAR ES SALAAM, TANZANIA.

Theme: Climate Change and Health

CMA
Commonwealth Medical Association

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LIST OF ABBREVIATIONS

CDM	Clean Development Mechanism
CHPA	Commonwealth Health Professional Alliance
CMA	Commonwealth Medical Association
ECDC	European Centre for Disease Control
FBO	Faith Based Organisations
HKMU	Herbart Kairuki Memorial University
IEC	Information Education Communication
MAT	Medical Association of Tanzania
MDGs	Millennium Development Goals
MuHEF	Muhimbili University for Health and Allied Sciences
NAPA	National Adaptation Programme for Action
NCDs	Non Communicable Diseases
NEMC	National Environmental Management Committee
NGO	Non Governmental Organisation
NMA	National Medical Associations
VCT	Voluntary Counselling and Testing

1.0 INTRODUCTION

1.1 Background Information

The Commonwealth Symposium on Climate change took place from 5th to 7th November 2009 at the famous Paradise City Hotel in Dar es Salaam, Tanzania. The workshop assembled over 40 multidisciplinary participants from different commonwealth countries including Kenya, Uganda, Ghana, Nigeria and Tanzania who was the host country. The meeting was organized by the Commonwealth Medical Association (CMA) in close collaboration with the Medical Association of Tanzania (MAT) and was funded by the Commonwealth Foundation. The Guest of Honour in the meeting was the CMA General Secretary, Dr. Oheneba Owusu-Danso.

The overall objective of this two days meeting was to develop a blue print for national medical associations and other interested professional institutions to use as a guide in combating impacts of climate changes on health and adopt for their own specific approaches.

Specifically the meeting intended to;

- Raise awareness and knowledge among health professionals on issues of climate change and their relations to health,
- Sharing experiences of various approaches used by health professionals in combating challenges of climate changes,
- Build capacity of health professionals in developing best approaches to combat above challenges

1.2 **Official Opening**

The official opening of the meeting was presided over by Dr. Edith Ngirwamungu (MAT President) and Dr. Oheneba Danso (CMA General Secretary) who issued the welcome remarks and key note address consecutively.

1.2.1 **Welcome Remarks-** Dr. E. Ngirwamungu (MAT President).

In her remarks, Dr. Ngirwamungu commenced by welcoming all participants both from Tanzania and those coming from other Commonwealth countries. She then apologized for the delay to commence the meeting noting that it was unintentional. She further appreciated the response of all participants to the meeting invitation despite the short notice. She wished all participants active participation in the two days of the meeting and a happy staying in Dar es Salaam for all those who come from outside.

1.2.2 **Key Note Address**- Dr. Oheneba Owusu-Danso (CMA Secretary- General)

In his address, the Dr. Oheneba commenced by expressing the honour he felt for the opportunity given to him to address the participants of the International Symposium on Climate Change. He proceeded by giving a brief background of the Commonwealth Medical Association as a civil society organisation responsible for the issues of doctors working within Commonwealth countries.

On with onwards, the Secretary General introduced to participants the need for doctors to be concerned with issues of climatic changes despite having a lot other health responsibilities; he made clear to participants that various research reports have showed the linkages between existing diseases and newly emerging ones noting that climate has shown to have great influence.

Dr. Oheneba also further noted that the question of climate change and health has raised alarm at the international height; however individual governments, health professionals and other professionals have not shown a good sign in dealing with such issues. The need for the international symposium was therefore inevitable so as to identify the following issues;

- What approaches have the professional bodies made to wards these health challenges?
- How much knowledge do to doctors and for that matter other relevant professional have that will make them confident in contributing to the issue concerned?
- What level of capacity, in terms of strategy and resources, does the effective contributions have that will enable them make meaningful and effective contribution to the action plans against the effects of climate change?

He insisted that it is important to build capacity and strategies in order to deliver on our roles of advocacy very effectively towards helping the developmental pursuits of our courtiers noting that it is the only way we could have the respect and much needed involvement with the policy makers and make crucial input into the development agenda of our countries, the Commonwealth and world at large.

Having said that, the CMA Secretary General invited deep focus and contributions to the discussions of all participants.

2.0 PRESENTATIONS

2.1 Changing Patterns of Diseases and Mortality Arising From Climate Change – Dr. Agaba Edson Friday (MOI University)

The long-term good health of populations depends on the continued stability and functioning of the biosphere's ecological and physical systems, often referred to as life-support systems. Direct or indirect impacts of the climate can therefore lead to impairment of the public health infrastructure, psychological and social effects, and ultimately reduced access to health care services.

Dr. Agaba Edson Friday, Ministry of Health, Uganda

The table below summarizes potential impacts of climate changes to the health sector;

Mode of impact	Mediating process	Health outcome
Direct	• Exposure to thermal extremes especially heat waves • Altered frequency and/or intensity of other extreme weather conditions (floods, storms etc)	• Altered rates of heat and cold related illness especially cardiovascular and respiratory diseases • Deaths, injuries and psychological disorders, damage to public health infrastructure
Indirect due to disturbances of ecological systems	• Effects on ranges and activity of vectors and infective parasite • Altered local ecology of water – borne and food – borne infective agents • Altered food (especially crop) productivity due to changes in climate , weather, and associated pests and diseases • Fresh water vulnerability • Sea level rise with population displacement and damage to infrastructure e.g. sanitation • Levels and biological impacts of air pollution including pollens and spores • Social, economic and demographic dislocations due to adverse climate change impacts on the economy, infrastructure and resource supply	• Change in geographic ranges and incidence of vector – borne diseases e.g. a 1.2.° C increase in temperature has shifted potential malaria risk areas from the traditional tropical to temperate zones • Changed incidences of diarrhoeal and other infectious diseases • Regional malnutrition and hunger with consequent impairment of child growth and development especially in vulnerable communities • Injuries, increased risk of various infectious diseases (due to migration, overcrowding, contamination of drinking water), psychological disorders • Asthma and allergic disorders, other acute and chronic respiratory disorders and deaths • Wide range of public health consequences e.g. mental health, nutritional impairment, infectious diseases, civil strife

Impacts and Vulnerability of health sector to Climate Change

Numerous theories have been developed in recent years to explain the relationship between climate change and infectious diseases: they include higher proliferation rates at higher temperatures, extended transmission season, changes in ecological balances, and climate-related migration of vectors, reservoir hosts, or human populations.

Climate change is one of many important factors driving infectious disease spread, alongside human and animal population dynamics, intense global levels of trade and travel, changing patterns of land use, and so on.

Many vector- food- and water-borne diseases are known to be sensitive to changes in climatic conditions. The results of predictive models have shown that under climate change scenarios, there would be a net increase in the geographical range of potential transmission of malaria and dengue – two vector-borne infectious diseases each of which currently impinge on 40-50% of the world population.

Within their present ranges, these and many other infectious diseases would tend to increase in incidence and seasonality although regional decreases would occur in some infectious diseases. Potential for spread of vector - borne disease outside their traditional geographical ecosystems is also high with change in climatic conditions for instance the Malaria Zone outside the tropical to temperate Zones.

The current concern of the EU-funded European Centre for Disease Prevention and Control (ECDC) is "*more accurate and reliable predictions for distributions of vectors in Africa and EUROPE*".

The European Centre for Disease Prevention and Control have on their website warnings of the possibility of outbreaks of Rift Valley Fever(RVF) in southern Europe as a result of climate change, and of the incidence of malaria in eastern Europe.

Thus one important area of public health research is to further quantify and examine the links between climate change and other determinants of communicable diseases.

Climate change has numerous impacts to the health of the community, some of the diseases that are prone to climate change include;

- Vector-borne diseases transmitted by arthropods spices such as mosquitoes, ticks, triatomine bugs, sandflies, and blackflies.
- Food-borne diseases including Salmonellosis;

- Air-borne diseases: absolute humidity have been associated with risk of upper and lower respiratory tract infection. Also in tropical regions prolonged dry spells are associated with outbreaks of respiratory and eye infections.
- Rodent-borne diseases; Rodent populations respond rapidly to conducive weather conditions, such as heavy precipitation events which can directly or indirectly propagate rodent-borne pathogens such as spirosis, a zoonotic bacterial disease, with an unknown, but probably high human and veterinary prevalence.
- Plague caused by the bacterium Yersinia pestis that is spread by fleas feeding on black rats.
- Water-borne diseases
- Recreational water; theoretical, simulation, and empirical data corroborate that increased water vapour, due to higher mean temperatures, triggers more intense precipitation .

Climate change vulnerabilities and threats in Uganda

- Flooding leading to contamination of water sources and outbreak of sanitation related diseases e.g. Hepatitis E and Cholera,
- Outbreak of vector borne diseases especially malaria with a marked shift from lowlands to highland areas which were previously malaria-free,
- Damage to agriculture and crop failure resulting into food insecurity and malnutrition,
- Damage to infrastructure: roads, health facilities, homesteads which affect health service delivery,
- Floods and landslides cause injuries, loss of lives and displacement of communities.
- Drought leading to crop failure and death of livestock

The most vulnerable Population in Uganda are the rural and urban poor, sick, elderly, and children, pregnant women, communities in highland and wetland ecosystems, pastoral communities and displaced communities.

In general, Climate change has serious direct and indirect effects on human health and welfare, and hence on the overall socio –economic development of a given population. These effects in turn damage the ecosystems on which we depend for key services, such as the provision of food, clean water, fuel and storm protection, and impact on health and the incidence of disease. Climate change is hence a key determinant for health outcomes of a given population; this calls for mainstreaming of climate change in health sector policies, plans, programmes and activities, as a matter of urgency. Adaptation strategies also call for a multi – sectoral approach since issues of climate change cut across other socio –economic sectors.

2.2 Adaptation and Mitigation Strategies on the Impact of Climate Change and Health- *Dr. Agaba E.F (Ministry of Health, UGANDA)*

Public health strategic activities should be principally focused on pro –active adaptation. Activities should be centered on three inter-related questions:

- ❖ What are the risk and vulnerabilities, as related to communicable diseases?
- ❖ What are the best adaptation measures that could be used to overcome these risks and vulnerabilities?
- ❖ What responses are required immediately?

Countries need to conduct vulnerability and risk assessments hence guidelines on conducting national vulnerability assessments should be in place in each country. Countries should also develop a tool-kit to guide countries on adaptation to climate change.

Key Strategic Areas for adaptation and mitigation include National Strategies, Global participation and involvement, Global Research on Climate change and health and Reduction of lamentations on causes but scale up implementation strategies.

At national level strategies include;

1. Policy and regulatory framework
   - Establishment of a multi-sectoral National Climate Change Policy Committee (NCCPC) to advise government responsible for environment and line ministries on climate change policy issues and CDM projects
   - Develop a National Policy and Plan of Action on climate change addressing the key vulnerable sectors e.g. the health sector
2. Capacity building (resources, human, infrastructure, logistics)
   - Establishment of a secretariat in the ministry of Water and Environment to provide secretariat support to the NCCPC and coordinate efforts to respond to the challenges of climate change in Uganda;
   - Develop a National Adaptation Programme of Action (NAPA) and an implementation framework as a quick channel for communicating immediate and urgent climate change and adaptation needs to the COP for funding,
   - Build capacity at all levels to tackle climate change
   - Provide adequate budget support for climate change activities(e.g. Uganda currently allocates about 1% of the budget to environmental management)
3. Implement Integrated health services
   - Developed an implementation strategy focusing on enhancing community resilience to the negative impacts of climate change;
   - Promote integration of climate change in the development of sector investment plans;

- Identified health –related projects under the NAPA such as Community Water and Sanitation Project, Control of diseases vectors, Pests and Control of communicable

4. Multi – sectoral approaches and linkages

- Establishment of a multi-sectoral Climate Change Policy Committee and Climate Change Unit;
- Strengthen institutional linkages internationally and locally;
- Meteological linkages - Provide timely Information on climate& weather predictions and forecasting that is vital in assisting the Ministry of Health prepare for disaster management for example for disease outbreaks that have climate change and variability as a major determinant e.g. Malaria (The Highland Malaria project in Kabale)), Cholera and other diarrhoeal diseases, physical injuries, nutritional insufficiency, community migration, disruption of social structure& behaviour as a result of floods, landslides;
- Strengthen Sanitary and Phytosanitary measures
- Mainstream climate change and health issues in national environmental management systems (NEMA)
- Establish functional linkages with other key Ministries, Government Departments, Local Authorities, NGOs, CBOs, Religious and Cultural institutions

5. Awareness and sensitization

- Sensitisation on climate change at all levels including the health sector

- Develop and popularise decision support tools like the malaria early warning system

6. Strengthen Sanitary and Phytosanitary (SPS) measures:

- Strengthening food safety, animal and plant health systems should remain the top priority especially in developing countries;
- Improve SPS decision – making;
- Consider climate change in standard – setting and implication e.g. food standards;
- Identify more climate change - friendly SPS measures;
- Educate and involve concerned stakeholders;
- Mainstream adaptation in development cooperation and SPS capacity building;
- Interdisciplinary approaches are essential(Environmental health, human, animal and plant health and food safety are interrelated, and connected to other global change factors);
- More research is needed. Understanding what to expect and look for is critical.

For the health sector, specific strategies include the following;

i. Develop a national policy on climate change in the health sector,
ii. Adequately address policy gaps in climate change and health
iii. Identify and address the main constraints to addressing the health impacts of climate change in the country namely:
    - Limited Financial and technical capacity to support implementation,

- Limited institutional capacity in the health sector,
- Inadequate Information database on linkages between health and climate change,
- Limited information exchange and capacity building
- Limited linkage between climate change and variability forecasting with health emergency preparedness and response.

iv. Adequately equip the health system to cope with the impacts of climate change, especially in aspects of financial, technical and institutional capacity

v. Make the necessary changes to the health system in response to increased risks resulting from climate change

vi. Earmark and allocate national resources specifically to address climate change and health

vii. Emphasis on multi –sectoral approaches and linkages: Ensure that the Ministry of Health is working together with other sectors (such as Ministries of Agriculture, Environment, Fisheries or Finance) to address health and climate change issues.

viii. Involve the country in work to manage climate change and health at the international level

ix. Build human resource for health capacity i.e. some officers in the health sector in climate change and have been involved in to participate at national and global level on climate change and health;

x. Mainstream '' Clean Technologies '' in delivery of health services e.g. for management of HCW

Epidemic and Disaster Preparedness and Response

Ministries of Health should establish functional Integrated Disease surveillance, Emergency Preparedness and Response to:

- Strengthen collaboration and linkages with other government sectors, neighbouring countries e.g. the East African Integrated Disease Surveillance Network, and donor agencies and all stakeholders;
- Maintain a system for integrated surveillance, forecasting and early detection of epidemics, disasters and emergencies;
- Maintain a system for surveillance and management of endemic and epidemics emergencies;
- Provide appropriate logistics, medical supplies and capacity for management of epidemics
- Improve on communication and referral at District Health Offices and Hospitals for emergencies, disasters and epidemics;
- Integrate Emergency, Epidemic and Response activities into community health services;
- Conduct IEC on Epidemic and Disaster Preparedness and Response.

Ministries should also develop climate change and health performance indicators to cover Policy, Guidelines, Standards, Capacity Building, Technical support supervision, Monitoring and evaluation,

Collaboration, Coordination, Advocacy and Social Mobilization and Establishment of District EPR Committees

The role of the community is also very important in these endeavors. Some of the Community-level Adaptation Measures include;

- Strengthen hygiene and sanitation programmes including infrastructure development and maintenance
- Hygiene and Sanitation Promotion as an integral part of development in society/community especially under emergency situations, which usually bring communities to live in unplanned environments such as in camps for displaced people
- Develop guidelines for extension staff who are confronted with such emergency situations to employ practical interventions to cope up with sanitation and hygiene problems that may arise.
- social mobilization through film shows, talk shows, radio talks and IEC materials, sanitation promotion, water quality surveillance, provision of supplies (e.g. ORS, IV fluids, antibiotics, spray pumps, chlorine) case management by establishing cholera treatment centres (CTCs), and active surveillance both clinical and laboratory.
- implementing the National Minimum Health Care Packages
- Strengthen health multi –sectoral linkages directed at harnessing the contribution of health related sectors (environment, water, meteorology e.t.c) and communities.
- Maintain ongoing surveillance in the affected districts and those prone to impacts from adverse weather patterns to ensure early detection of epidemics
- Re –train health workers in Integrated Disease Surveillance & Response(IDSR)
- Scale – up health education and promotion for the affected communities
- Promote other disease preventive interventions like improving latrine coverage, access to safe water, provision of insecticide treated mosquito nets and improved access to basic healthcare services.
- Establish more accurate and reliable predictions for the distribution of water related vectors and vector –borne diseases
- Strengthening of early warning, surveillance and monitoring of vector – borne diseases
- Local and community authorities to embrace and support policies on climate change and health.
- Besides health impacts of climate change itself, it is important to examine also the health impacts of various climate change related policies and environmental policies.
- Need to investigate the interaction of impacts of climate change with socio – economic developments, such as urbanization or migration(Rural – urban)

- Insecticide treated mosquito nets and improved access to basic healthcare services.
- Mainstream climate change in ongoing activities e.g School health, NIDs, Child Days Plus, Food Safety Weeks, Sanitation Days.

Global strategies to address the health impacts of climate change: National Level Policy Strategies

- Establishment of the institutional framework for the implementation of the Convention on Climate Change (UNFCCC) and Kyoto Protocol,
- Establishing a National Regulatory Framework to enable it fully participate in the Clean Development Mechanism (CDM) as a vehicle to sustainable development,
- Establishment of a multi-sectoral Climate Change Policy Committee and Climate Change Unit under the Ministry of Water and Environment,
- Develop and prioritize the policy addressing the impacts of climate change on health at country level country,
- Develop a strategy and work plan for mainstreaming climate change in health sector policies, strategies , programmes and activities,
- Integrate health sector strategies into national climate change mitigation and adaptation strategies,
- Equip health system to cope with the impacts of climate change(especially in aspects of financial, technical and institutional capacity.
- Ratify the UNFCCC on 09September 1993 and subsequently acceded to the Kyoto Protocol on 25th March 2002,
- Actively participate in the climate change process at international level e.g. of the COP Bureaux and the CDM which regulates carbon trading.
- Scale – up Global and National Research on Climate change and health

The main challenges and constraints to addressing the health impacts of climate change in Uganda include;

- A national policy on climate change is not yet in place,
- Climate change is not yet fully streamlined in the health sector.
- Our health system is not well equipped to cope with the impacts of climate change especially in aspects of financial, technical and institutional capacity
- We have not yet made effective changes to our health system in response to increased risks resulting from climate change
- Limited Financial and technical capacity to support implementation, Limited institutional capacity in the health sector,
- Inadequate Information database on linkages between health and climate change,

- Limited information exchange and capacity building
- Limited linkage between climate change and variability forecasting with health emergency preparedness and response,
- National resources have not directly been allocated to address climate change and health.
- Limited capacity of key sectors including the health sector to quickly adapt to climate change and its negative impacts to delivery of services
- Inadequate understanding and appreciation of climate change and its impacts thus creating a barrier to resource allocation.
- Inadequate technical capacity (human resources, health infrastructure, medical equipment and supplies)
- Inadequate financial resources
- Weak institutional and coordinating mechanisms (inter and intra ministerial, public private partnership)
- Poor information access and flow to enable effective operation of early warning systems.
- Insufficient community mobilisation, response and adapting to new innovations.

Commonwealth Health Professional Alliance Survey Report on Climate Change- Dr. O. Owusu-Danso

In preparation for the CHMM, the Commonwealth Health Professions Alliance (CHPA) undertook a *Climate change and health* survey of health professionals in Commonwealth countries. Over 800 individuals from 42 of the 53 Commonwealth countries returned the survey, as well as a number of health professional associations who returned surveys on behalf of a membership numbering in excess of 200,000 individuals. Responses were received from nurses, doctors, pharmacists, dentists, community health workers and others such as dietitians, physiotherapists and health administrators.

The following messages were obtained from health professionals in Commonwealth countries to Commonwealth Health Ministers;

- 96% of respondents were personally concerned about global warming and climate change. They did not however have the same confidence in their governments' concern or preparedness. While 73.3% considered global warming was a concern to their government, only 43.8% considered their government had an action plan or high level committee on global warming and climate change and nearly 70% said they had no input into or access to the action plan or high level committee.
- Governments, even those with action plans to deal with global warming and climate change, or disaster plans, did not adequately seek input from health professionals, or provide them with access to their policy or plans. Forty percent of respondents said their governments did not involve them in policy decisions or in formulating plans about global warming and climate change. As one respondent said, *Health professionals and their associations should be integral to decision making; because they bear the brunt of the health effects and disasters which will arise from global warming and climate change*.
- Health professionals at all levels want to be kept informed. They understand they will be called on to care for people affected by global warming and climate change, but without information their response will be inadequate. *Consultation occurs, but only with health professionals at a policy or academic level. There is little or no consultation with health professionals in the workplace or in the field.* Health professionals also consider that the public are poorly informed. *Dissemination of information from the top down appears to be a major challenge and is not done well. There should be more public participation in decision making together with more public education.*
- Global, collaborative strategies are needed to avoid wholesale environmental devastation and gross social disruption with consequent risks to health and peace. There is a clear choice between continuing unsustainable and inequitable consumption of energy use and collaborative planning to mitigate foreseeable economic, environmental, social and health risks associated with climate

change. Health professionals consider the cost of doing nothing, of being reactive, much greater in financial and human terms than taking preventative action.

- Respondents were concerned that governments are too distracted by other issues, such as their own domestic issues (unemployment, crime, and poverty) and the current global economic crisis. *There is very little evidence of any genuine commitment; the issue is not being taken seriously and is not high enough on their agenda.* Health professionals felt the time to act was now and that while individual effort was important, the leadership of national governments together with international collaboration and cooperation was critical to success.

There was remarkable consistency in the effects, identified by health professionals, of global warming and climate change. The effects fell into five main categories: survival; health; economic; social; and environmental. The matrix below highlights impacts under each category;

SURVIVAL	HEALTH	ECONOMIC	SOCIAL	ENVIRONMENT
♣ Soil erosion ♣ Deforestation ♣ Desertification ♣ Increase in uninhabitable areas ♣ Saline intrusion into and decreased water tables ♣ Depleted water reservoirs ♣ Reduced supply of fresh water ♣ Effect of drought on agriculture and industry ♣ Reduction in number of animals and sea life ♣ Decrease in arable land ♣ Decrease in agriculture and food production ♣ Reduced food supply ♣ Displacement of farmers	♣ Increased CO_2 emissions ♣ Increase in UV light ♣ Increased pollution ♣ Increased temperatures leading to increase in infectious organisms and spread of disease ♣ Increase in heat induced illness eg skin problems, dehydration, kidney problems ♣ Increase in respiratory disease ♣ Increase in cancers ♣ Increase in infectious diseases, allergies, and autoimmune diseases ♣ Emergence of new diseases ♣ Increase in mental health disorders ♣ Decreased food supply leading to malnutrition, hunger and starvation ♣ Sanitation issues and difficulties with waste management	♣ Negative effect on agricultural industry ♣ Negative effect on mining industry ♣ Decrease in exports ♣ Decrease in tourism ♣ Increase in economic refugees ♣ Increase in unemployment ♣ Decrease in energy sources ♣ Decrease in fuel supply ♣ Disruption to trade with effect of unstable weather on communication systems eg road, rail and information technology ♣ Increased cost to restore loss and damage ♣ Increase in cost of production and in cost of goods and services eg food, water and energy ♣ Increased demand on financial resources but fewer resources to meet demand ♣ Economic uncertainty ♣ Economic collapse	♣ Urbanisation – movement of people away from rural areas to cities ♣ Overpopulation of cities ♣ Infrastructure failure due to overpopulation ♣ Increase in refugees displaced from origins and family support ♣ Housing shortages in cities ♣ Increase in homelessness ♣ Reduced earnings ♣ Increased demand on products and services ♣ Reduction in products and services ♣ Increased cost of products and services ♣ Increase in personal hardship ♣ Increase in poverty ♣ Increase in suicide ♣ Increase in crime ♣ Social disintegration and collapse	♣ Unpredictable and unstable weather patterns ♣ Increase in natural disasters ♣ Rising sea levels affecting coastal erosion, coastal flooding, loss of coastal habitats and ecosystems, small island states ♣ Rise in sea water temperature affecting coral reefs and marine life ♣ Increase in natural disasters with increased demand on finances, infrastructure and human resources with decreased resources ♣ Displacement of people ♣ Increased damage to ozone layer ♣ Negative effect on wildlife with loss of habitat, reduced water supply, food, unstable weather patterns ♣ Extinction of species

It is eminent from above findings that the relationship between newly emerging diseases and climate change has been ignored in most Commonwealth countries and Africa in general; Africa is not discussing in details key issues that are ongoing around the world.

Political commitment and understanding of linkages of health and other issues is of great importance, failure to understand the link between climate change and health may lead to wider impacts in the social, economic, environmental, survival and health of the globe. More advocacy and capacity building, education are needed. The high ranking leaders must be advocated on issues of climate change and health. Medical Professionals were strongly urged to take the lead in this process.

"Our planet is like our bodies. If we place it under too much stress, the system loses equilibrium. The big bang that initiated the world may ultimately end the world. It may be too sudden to anticipate. "We have only one planet. If we do not save it, we have no where else to go"

Meeting of the National Medical Associations (NMAs) Present

The purpose of this session was for all NMAs to sit together and discuss various issues that that concern their individual associations and those that touch the Commonwealth Medical Association (CMA) as the bigger body. The session was presided over by the General Secretary of the CMA, Dr. O. Owusu-Danso.

The following issues dominated the discussion;

i. **Membership:** the issue of membership was discussed in two surfaces; membership of medical professionals to their respective NMAs and Membership of NMAs to the CMA.

   - With regard to membership among NMAs, the symposium noted that majority of the Medical Professionals have no interest in acquiring membership in their NMAs. Many doctors do not perceive NMAs as a good thing and beneficial to them.
   - Also it was noted in the meeting that medical professionals prefer to formulated small associations based on specializations instead of falling under one big umbrella organisation. This leads to fragmentation of the medical profession.
   - There is lack of ownership of NMAs by the members. There has been a tendency of pointing fingers

ii. Commitment of members to NMAs

   - Most medical professionals think of what NMAs should to them instead of brainstorming on what they should do for their NMAs to prosper.
   - Also participation of members in important issues both national and international is very poor. This is also attributed by loss of communication among members as well as among associations.

iii. Lack of political support and understanding on issues patterning to health and climate; most of the political leaders are not aware of climatic impacts on health hence they end up dealing with the consequences.

iv. Involvement of the private sector seems to be unsatisfactory in many Commonwealth countries; the public has been observed to be dominant. Socialism ideology was pinpointed as one factor that undermines the private sector and professionalism.

> *"Most of the challenges facing NMAs are our own issues. We therefore need to look into ourselves and make a change…"* **Dr. Oheneba Owusu-Danso (CMA General Secretary)**

v. Gender balance is also limited; women participation in various issues including leadership was seen to be weak. An example of women participation in the symposium was highlighted.

vi. Limited financial capacity was also highlighted as another challenge facing NMAs. This also goes hand in hand with poor management of NMA's funds.

Proposed Way Forward

1. NMAs should develop creative programmes to attract members to join and last in their associations. An example of Doctor's Pension Fund in Ghana was given.
2. It is also important for NMAs to advocate for umbrella organisations rather than individual organisations that may end up fragmenting NMAs.
3. Doctors should the pioneers of their association finances. All members should contribute to support the welfare of their associations.
4. Medical Professionals should take the lead in building the capacity and knowledge of political leaders on issues of climate and health.
5. NMAs should strive to their best to keep up communication with their members and with the CMA. Annual conferences are a good avenue for members to communicate and plan for their NMAs. Other means such NMA's websites should also be advocated for communication purposes among other things.
6. NMAs should also establish good relations with media organisations and they should use the power of the media to publicize various health issues
7. The CMA should also develop a guideline for NMAs. This will also assist in regulating the issue of ethics among medical professionals.

2.3 A presentation of Communiqué adopted by commonwealth health ministers - *Dr. Oheneba Owusu-Danso*

The meeting was held in Geneva on 17th May, 2009 on the eve of the 62nd World Health Assembly, it brought together Ministers of Health from all Commonwealth countries. The main theme in the meeting was 'Health and Climate Change' in response to member states requests made in 2008, and in implementation of the Lake Victoria Commonwealth Climate Change Action Plan of 2007that calls for the use of Commonwealth networks to strengthen the consideration of the human and economic aspects of climate change.

Some of the key concerned by Ministers of Health during the meeting were;

- There is a need for additional resources to sustain achievements that have been obtained over the past decade towards Millennium Development Goals
- Health human resource is still a crisis and that health human resourcing should continue to be a priority issue for consideration.
- Human activity is altering the earth's climate and some of the effects include flooding, drought and other extreme weather events. Efforts to prevent climate changes will result to positive effect on human health, including the prevention of Non-Communicable Diseases (NCDs), through improved air quality, diet and physical activity.
- There is increasing morbidity and mortality, related to Non-Communicable Diseases (NCDs), and Ministers agreed to continue to engage their Heads of State on this issue.

Other agreed actions on issues of climate change included;

1. Ensure multi-sectoral action across government and civil society and to engage communities in positive responses.
2. Develop and implement pragmatic, coordinated and evidence-based policies, strategies and adaptation plans.
3. Ensure leadership by the health sector in reducing its own carbon footprint.
4. Make progress in a fully integrated way across three linked agendas of health equity, poverty reduction and climate stabilisation.

Commonwealth Heads of Government are also heading to meet in Port of Spain, Trinidad and Tobago in November 2009. Some of the key messages that they were argued to carry to the meeting were;

i. Use the Copenhagen Climate Change Conference in December 2009 to forge strong post-2012 International Climate Change arrangements that will support the smallest, poorest and most vulnerable regions, including small island states, and underpin effective mitigation and adaptation to reduce the potential health impacts of climate change on health and development.

ii. Support the leadership role of Health Ministers and other relevant Ministers in conducting robust assessments of climate change health risks, to enable countries to prepare adaptation strategies.

iii. Meet new and existing funding commitments to support the development, implementation and monitoring of health and climate change adaptation plans.

iv. Support health system strengthening and increase funding for health emergency preparedness systems as a means of reducing the economic and social costs of expected long term crises, as well as pandemic outbreaks.

v. Ensure that health sector concerns are given greater consideration in the planning and implementation of national and regional climate change responses.

2.4 Impact of Climate Change on Food Security, Water Supply and Sanitation- Amour Seleman (Environmental Health Officer, MoHSW)

Over a period of time there have been a huge alteration in the global weather patterns; this situation has posed a number of threats to the human kind and their health in particular. In 2000 Scientists got together under IPCC (Intergovernmental Panel on Climate Change and Predict that over the next 100 years, the earth's average temperature could further rise by 1.5 – 5.8^{o}C, the magnitude of this predict warming may seem negligible but their impacts are already seen today.

The following areas have been adversely affected by the change in climate globally;

- **Agriculture:** the yields have been directly affected by alteration in temperature and rainfall, and indirect through change in soil quality, pests and diseases. The outcome of all these is food shortage

- **Livestock Keeping:** prolonged draught results into loss of grazing fields, water scarcity and emerging of animal diseases which in turn will affect food availability and hence hunger and malnutrition

- **Sea level rise:** As a result of global warming the sea levels has been in the rise and increase the risk of coastal flooding, and may necessitate population displacement.

- **Human health:** Extremes of temperature have resulted to increase in number of death due to greater frequency and heat waves. Other impacts come from flooding and exposure to Ultra Violent radiations that may result to skin cancer and cataract.

  Other health impacts include increase in vector-borne diseases. Diseases such as malaria, lymphatic filariasis, yellow fever, rift valley fever), *Simulium* (onchocerciasis), *Trypanosoma* (trypanosomiasis) and tick borne relapsing fever are very sensitive to climate.

Note: Climate change threatens to undermine all progress made towards the Millennium Development Goals (MDGs), the internationally agreed plan for poverty reduction and other health advances.

The following measures can be adopted in combating impacts of climate change on health;

- Food preparation: Proper storage and handling in warmer temperatures to get rid of food borne diseases.
- Education about proper nutrition, contaminant exposures, and draught resistant crops e.g. cassava and sorghum;
- Increased coordination and information exchange between public health professionals
- Public awareness about impacts of climate change on health and its adaptation.
- Strengthen disaster management and response teams
- Strengthening Disease surveillance system in the country (e.g In Tanzania there is sentinel centres for avian influenza)
- Develop strategies for promotion of food safety and water contamination.
- Disaster management - planning for the combat of infectious diseases that arise after natural disasters;
- Strengthening public health infrastructure related to the monitoring and control of infectious diseases
- Promote construction of improved toilet facilities (built from permanent materials)
- Educate people on conservation of water resources and methods of water treatment at household level.
- Improved vaccination and drug services to combat infectious diseases;
- Expand health impact assessment practices to include identifying communities and individuals that are vulnerable to health impacts from climate change;
- Identification and development of indicators for climate change and health
- Improved housing and sanitation practices to prevent spread of infectious diseases for vulnerable populations;
- Cold and heat weather alert and response plans.

Tanzania has already developed a mult-sectoral strategic plan under the Prime Minister's Office for adaptation of emergency especially the Elnino which is expected to happen soon. Ministry of Health in collaboration with stakeholders has also developed an action plan for managing water and sanitation issues under extreme weather events. At regions and district level instructions have been put forward to strengthen their Disaster management teams.

3.0 COUNTRY EXPERIENCES

The purpose of this session was to share experiences from different Commonwealth countries on issues patterning to climate change and its impacts on health. The session also provided an avenue for countries to set strategies combat and control climatic changes. Countries that made presentations in this area included Tanzania, Ghana, Kenya, Nigeria and Uganda.

3.1 Climate Change in Tanzania- Dr. Edith Ngirwamungu (MAT President)

In her presentation, Dr. Edith highlighted a brief profile of the country including the current health status in Tanzania including high disease burden from HIV/AIDs, TB and Malaria as well as high mortality rates among pregnant women and children under five.

Moreover, the MAT President also provided a brief background of the Medical Association of Tanzania (MAT) noting that the association was founded in 1965 to represent the interests of the medical professionals among other things. Although MAT is predominantly a health promotion association, it is not directly involved in health issues such as Planning and policy development, Epidemiology and Disease control and Environmental Health. Moreover, Tanzania as a country has no forum for engaging other sectors such as Meteorology department, NEMC, Agriculture, Water and Sanitation in discussing health issues particularly those related to climatic changes.

Other challenges facing the country in dealing with climatic impacts on health include the following;

- Climate change and health relatively new area of focus
- Awareness on impact of Climate change on health, socioeconomic and environmental aspects is low among health professionals
- There is competition in setting national health priorities in the country.

Despite above challenges, MAT has still some opportunities to make a change. Such avenues include;

- Lobbying and advocacy to members of the Health Sector Wide Approach Committee.
- Environmental health section in MoHSW should be active in sensitizing health professionals on the subject
- Partnership with organisations such as NIMR that are supporting health professionals to research and document on Climate change and Health.
- Encourage Environmental health and Meteorologists to be members of TAPO.
- Partnership with CMA, NMAs and other international organizations on joint strategies to manage the effects of climate change.

- Use of the MAT website and the Tanzania Medical Journal in spreading awareness on linkages between climate and health issues.

3.2 Challenges to mitigating the Health effects of Climate Change in Uganda- Dr. Margaret Mungherera, President, Uganda Medical Association

Dr. Margaret commenced her presentations with challenges that face Uganda in combating climatic impacts on health. These included among other things;

- Competition with other existing health concerns such as those due to conflict and HIV.
- Low national budgetary allocation to health sector (below 15% required by Abuja Declaration)
- Inadequate capacity (human resource, drugs, etc) to respond to disasters.
- Lack of awareness of health professionals about linkage between climate change and health
- Limited scientific data showing link between climatic change and health.
- Poor dissemination of information to policy makers, legislators, politicians, local governments, general public in language they understand.
- Limited inter-sectoral and multi-sectoral collaboration.
- Lack of political will and commitment to address the issue at all levels
- Poor governance (corruption, poor supervision etc)
- Despite existing public-private partnership policy in Ministry of Health, limited involvement of the national medical associations.
- Lack of preventive strategies such as land use policy
- Lack of enforcement of existing policies and laws eg. The National Environment Management Authority policy, the Public Health Act

In order to resolve above challenges the following issues were suggested;

- ✓ Learn from the success story of HIV/AIDS
- ✓ Political will and commitment at all levels
- ✓ Allocate more resources for health and disaster response and preparedness
- ✓ Multi-sectoral collaboration and coordination
- ✓ Research, documentation and dissemination
- ✓ Advocacy

Uganda Medical Association has already taken measures in that direction, the association is implementing a number of initiatives in efforts to combat climatic impacts. These include;

- Continuing Medical Education such as debate on the use of wetlands, included environment issues in scientific conferences, symposia on disaster preparedness and response facilitated by WHO and MOH.
- Participation in East African Community working groups on malaria and disease surveillance.

These efforts have been highly commended and have manifested signs of achievement; however the UMA has to do more. Recommended initiatives include;

- Advocate for and organize education programs for doctors and other health professionals-linkage between climatic change and health, disaster preparedness and emergency response.
- Lobby for integration into curricula of all health professionals.
- Advocate and lobby for enforcement of policies and laws such as the Public Health Act.
- Advocate for longitudinal research on the link between climatic change and health.
- Disseminate existing data to policy makers and legislators, general public using media, workshops and lobby meetings.
- Lobby to participate in policy making at national level.

As an umbrella organization for all NMAs, the Commonwealth Medical Association has the responsibility to support UMA by providing it with opportunities to share experiences, skills, lessons learned and best practices from other national medical associations in the Commonwealth.

3.3 The Nigerian Experience on the Effects of Climate Change on Health- *DR Mma Ngozi Wokocha*

Nigerian climate is characterized by three main variants including tropical rain forest with annual rainfall of 60-80"; the far North is essentially desert-like and records annual rainfall of 20" and the rest of the country is the savannah variant with annual rainfall of 70-60".

Health wise the country's health care delivery sector based on a tripartite set up; Primary, secondary and tertiary. The referral system is however yet to be optimized. Child mortality rate is as high as 100/1000 live births while vaccination rate is dragging at 13%. With pregnant women, Maternal Mortality Rate stands at 800 per 100,000. 63% of pregnant women receive some form of ante natal care and 66% deliver at home unattended.

Major climatic impacts in Nigeria

- Extremely high temperature results into unexpected tedium that prevents people from undertaking their daily economic activities. High temperatures have contributed to high levels of the bacterial disease, cerebro-spinal meningitis in Nigeria.

- Through increased flooding, climate change has affected diseases like malaria by increasing mosquito breeding grounds.
- The country if facing increased conflicts over arable land as the desert creeps southward. The minimum vegetation cover has fallen well below 10 per cent, let alone the 25 per cent cover judged necessary to support life.
- Citizens and women in particular spend most of their time in search for water and food due to drought instead of engaging in income generating activities
- Nigeria is facing increase in the number of areas affected by droughts, in the north and rise in the number of intense environmental degradation as a result of oil drilling in the south
- The country is also vulnerable due to its long coastal area, high population density, low capacity to technology and predominantly rain-fed agriculture.

Initiatives to combat effects of climate change in Nigeria

Climate change is one of the most challenging political, socio-economic and bio-ecological developments in Nigeria. Worried by the threat to food security, livelihoods, water resources and health, government officials and NGOs have underlined the need for immediate action on climate change in the region.

"About 23 million Nigerians are under threat of environmental degradation, and the implication is that Nigeria's environment and its socio-economic development could be sensitive to the phenomenon of global warming and climate change.",…… **President Umar Musa Yar'Adua of Nigeria**

Some of the immediate strategies to these threats include the following;

- education and public enlightenment,
- capacity building of vital sectors,
- collaboration with relevant development partners within the global framework.
- inclusion of climate change related theme in the 7-point agenda of President Yar'Adua (power and sustainable clean energy, agenda 1) with pursuance of the Lekki ethanol fuel pilot project.

There are suggestions that an integrated approach is needed to reduce the adverse health effects of climate change with at least three levels of action: policies to reduce carbon emissions; action on the events that link climate change to disease; and the development of public health systems to deal with adverse outcomes.

What has the country achieve so far?

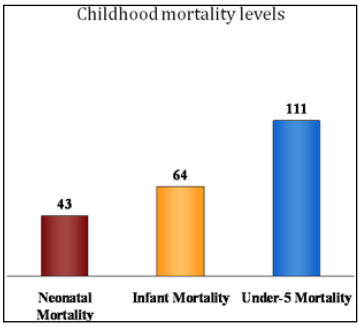
- ❖ Following its establishment recently in Nigeria's Federal Environment Ministry, the Special Climate Change Unit (SCCU) has swung into action to develop a National Climate Change Policy (NCCP).
- ❖ On 10 February this year history was made when a Climate Change Committee was inaugurated in the House of Representatives – Nigeria's lower legislative chamber.
- ❖ Already, the nation has begun initiatives to adapt to and mitigate the effects of climate change.
- ❖ The tests for the variety are already at an advanced stage
- ❖ Rolling out farming initiatives; the BNRCC project is also exploring alternatives to traditional crop farming and livestock rearing. Farmers need to find new ways of cultivating crops, and BNRCC researchers are hopeful they can use brackish water, water with a slightly higher salt content, to establish aquaculture in dry, degraded farmlands. This could help to improve nutrition and ensure people get a more varied diet.

Role of the Nigerian Medical Association in response to climate change issues

- ☞ Not too different from the national activities- a major stakeholder in a yet-to-be named coalition against climate change.
- ☞ Advocacy as a follow up from the Copenhagen workshop resolutions.
- ☞ NMA has adopted an integrated approach to reduce the adverse health effects of climate change through advocacy to reduce oil spillage an environmental pollution esp. in Niger Delta region; sensitization on the events that link climate change to disease;.
- ☞ Direct community participation in the areas of tree planting (reforestation), anti-bush burning and hand washing campaigns

3.4 Ghana Experiences of Impacts of Climate change on Health – Dr. M. Tylor

Analysis of the health status in Ghana indicates less promising results due to high rates of mortality among pregnant women and children under five. Maternal mortality rate is estimated at 540 per 100,000.



Facts on Climate Change

- There is now widespread consensus among the scientific community that the earth is warming, that this is mainly due to human

activities, and that this will continue for at least the next several decades.

- It is growing increasingly clear that climate change is not only a reality, but that it is threatening to become a far more destructive phenomenon far more quickly than scientists had even recently predicted.

Climate change has adverse consequences for health: as carbon goes up health goes down. Based on WHO estimates around 150,000 deaths now occur in low-income countries each year due to climate change from four climate-sensitive health outcomes – crop failure and malnutrition, diarrheal disease, malaria and flooding.

Situation in Ghana

Ghana is highly vulnerable to the various manifestations of climate change. Some of the immediate impacts include the following;

- Rainfall is also predicted to decrease on average by 2.8%, 10.9% and 18.6% by 2020, 2050 and 2080 respectively in all agro-ecological zones.
- Scenarios of sea level changes with respect to 1990 mean predicts an **average rise** of 5.8cm, 16.5cm and 34.5cm by 2020, 2050 and 2080 respectively. Already at the current sea level, the east coast of Ghana, in particular the Keta area is experiencing an annual coastal erosion rate of 3 meters.
- Malaria, guinea worm infestation, cholera, meningitis, and diarrhoeal diseases account for about 50% of the total disease burden in Ghana
- Climate Change will further aggravate water stress, endanger food security, increase impacts from extreme weather events and displace many.
- Floods, droughts and sea level rise will significantly increase the transmission of vector and water borne diseases in the country.
- Climate Change adversely affects poor Ghanaians, affecting their health and livelihoods and thereby undermining the growth opportunities which are key to poverty reduction
- Malaria is identified as one of the leading causes of death in Ghana and diarrhoeal disease is a major cause of childhood mortality and morbidity

Country commitment to combat impacts of climate change

- Ghana signed the United Nations Framework Convention on Climate Change (UNFCCC) at the Rio de Janeiro Earth summit in June 1992 and ratified same on 6 September 1996.
- At the Twenty-Fifth Sitting of Parliament of the Fourth Republic of Ghana, in November 2002, Parliament approved by resolution the Kyoto Protocol to the UNFCCC and thus resolved to ratify it
- The instrument of ratification was deposited at United Nations Headquarters, in New York in March 2003.
- As a Party to the UNFCCC, Ghana has prepared and submitted to the Conference of Parties (COP) her initial national communication, with funding from the Global Environment Facility and other bilateral programmes

Ghana's efforts are facing some challenges in their implementation. Some of them include;

- Lack of research and data
- Lack of long term planning
- Lack of general awareness of present shortcomings
- Lack of funds to fight the main causes of negative impacts of climatic change on public health
- Interdependence of main causes that influence climatic change: overpopulation, deforestation and pollution

It is clear that the health sector can also play a leadership role in *mitigating* climate change – that is reducing its magnitude and consequences by getting our own house in order. Some of the recommended steps may include;

- Reduce carbon footprint
- Reduce Deforestation(Production of charcoal)
- Transport, traffic
- Energy saving (Air-conditioning)
- Sanitation -Garbage disposal (e-waste!),
- Building public awareness of dangers of burning e-waste
- Change of attitudes and lifestyles

Many of these strategies can be implemented by a shift in the health sector's procurement policies and practices. Collaboration with other sectors will also result into fruitful achievements. Health professionals should however take the lead the world in addressing climate change

Climate Change: Impact on health in Kenya- *Dr. Mwangi S. W. (Kenya Medical Association).*

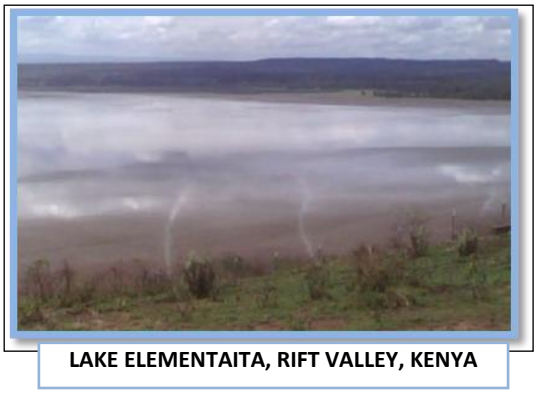
This presentation identified three climatic components including rain/humidity, temperature, wind and sunshine and how they affect the health of the Kenyans due to their unpredictability, excess or deficit.

Unpredictability of the climate

- Farmers unable to plant on time
- Less food, malnutrition, low Social Economic Status, less access to health.
- Unprepared for adverse events: more destruction.
- Agricultural activities all year round, less soil fertility, less yield, fertilizer overuse.

Deficit:

- Poor harvest, loss of animals, malnutrition, low Social Economic Status.
- Migration to new ecosystems, new infections.
- Less arable land- pressure on land, civil strife, injuries, destruction of infrastructure, low SES, vicious cycle, IDP's, promiscuity, more STI's
- Less surface water; sink more boreholes, high fluoride in water, dental/skeletal fluorosis, and long term OA/joint deformity.
- Temperature- more URTI's, Asthmatic attacks, pneumonia.
- More time indoors- less sunshine, vitamin D deficiency- Rickets, more infections (less UV disinfection).
- Wind- pollination, windmills



LAKE ELEMENTAITA, RIFT VALLEY, KENYA

Excess

- Rain- floods, destruction of infrastructure, more communicable diseases, less access to health services.
- Temperature- heat exhaustion, dehydration, drying surface water, more fluorosis.
- Sunshine- more skin Cancer.
- Wind- typhoons, destruction of infrastructure, health facilities.

Proposed Way Forward

1. Multi-sectoral/interdisciplinary collaboration.
2. Prevention is always better than cure.
3. International collaboration.
4. Think outside the box.

4.0 WORKING GROUP SESSION

After absorbing experiences from various countries' experiences of impacts of climate change on health, the symposium thought it necessary to set clear roles that health professionals need to undertake in the following;

- Strategies for Advocacy by National Medical Associations
- Process/indicators for conducting vulnerability assessment of climate change health risks
- Implementation of Adaptation Strategies and how to deal with.

The participants were divided into three groups and each group made a presentation of their outputs after intensive discussion.

4.1 Group One: Strategies for Advocacy by National Medical Associations

1. Use of all kind media such visual, audio and internet. The target group should mainly be politicians, policy makers, other professionals, religious groups and the community at large.
2. Community education using influential personality e.g. political or religious leaders.
3. Development of education curriculum at all level.
4. Research: to identify problems/challenges or existing approach community for mitigation and recommend evidenced based intervention.
5. Conducting of Baseline/situational analysis.
6. Using IEC materials e.g. Posters, brochures. Target should be schools, transport industry, community recreational centres, during sport events
7. All MAs should put their house in order so as to have clear defined role and responsibility. i.e.(organogram)
    - Communication strategy- up to date members data, technique disseminating information
    - MAs should have Climate/ R&D team
8. Engaging donors and development partners for mobilising resources
9. Community Outreach for addressing climate change.
10. Strategy for identifying different way/alternatives of solving climate change impact on communities.
11. Mainstreaming of climate change issue as one of the agenda into daily operations of MAs including scientific meetings.
12. Formation of multi-sectoral organ on dealing with climate.
13. Strengthening of PPP on addressing climate issues.

14. Make use of regional/international cooperation organization as a plat form for advocacy i.e. ECOWAS,EAC,SADC etc.

The group also identified some of the strategies to raise resources for accomplishing above mentioned initiatives;

- ☞ Contribution from national budgets and from MAs members.
- ☞ Contribution from donors/development partners i.e. UN agencies,NGOs, FBOs and Embassies.
- ☞ Contribution from drug companies.
- ☞ Generation of funds from MAs investments.
- ☞ Fund raising events i.e. Annual dinners (harambee).

4.2 Group Two: Process/indicators for conducting vulnerability assessment of climate change health risks.

SN	CLIMATE PARAMETERS/ INDICATORS	EFFECT	RISK	CONSEQUENCES	Vulnerable population
1	Rainfall variation	Flood, drought,	Water borne diseases, zoonotic diseases, crop pest and diseases, food insecurity	Health hazards like cholera to mention but a few, hunger, water and sanitation, community instability and conflict, climate related migrants etc.	Women, children, elderly, resource weak households
2.	Temperature variation	Drought,	Increase disease prevalence both for human, animal and crops	Poor food production, less pasture and water etc.	
3.	Relative humidity	Water content variation in the air	Diseases –respiratory an heat stroke-		

4.	Wind	Severe storm like thunder and dust, and tropical cyclones,	Severe health consequences like blindness		

4.3 Group Three: Implementation of Adaptation Strategies and how to deal with.

1. Recommendations should be adopted to fit country's existing environment (domestication of strategies)
2. Malaria and HIV/AIDS initiatives have lots of funds but the risks are still on the increase; advocacy should be conducted to raise awareness that these calamities are highly affected by climatic changes.
3. Environmental degradation should be declared a "Capital Sin"
4. The constitution should crystal clear state that whatever whoever is doing should maintain the climate.
5. Simple things should be implemented first; an effort should be made to ensure that people think of climate issues all the time
6. The "Win" is a question of perspective and approaches employed.

5.0 OVERALL RECOMMENDATIONS

After the two days of intensive discussions and experience sharing, the meeting came up with few and achievable recommendations as listed below;

1. NMAs should advocate for multisectoral and interdisciplinary collaboration in addressing the impacts of climate change on health in their countries.
2. NMAs should conduct sensitization of the key stakeholders with special emphasis on the media community, health professional, legislators, on climatic change issues and their impacts on health.

3. NMAs should actively sensitize their members and other health professionals on climate change and health issues.

4. NMAs should promote/conduct research on climate change impacts on health.

5. NMAs effectively participate in regional and international forums

6. Commonwealth Foundation is called upon to further support the CMA in organising similar symposium for NMAs in other regions of the Commonwealth.

6.0 STRATEGIES FOR RELEVANCY OF NMAS: PLENARY DISCUSSION

Key Elements

1. **Identification:**

    - Develop/maintain well defined address i.e. Physical address, e-mail address, web site, postal address, telephone.
    - Establishment of functional secretariat with administrative staff.

2. **Communication – reaching out:**

    - Within(with other members of NMA)

      -NMA's shall adopt effective and sustainable means of communication between the executive and general membership.

    - Without(with other NMA, world bodies, civil society)

3. **Constitutional review: to reflect new role specifications**

    - Representatives of medical students, young doctors, private practitioners e.t.c to be members of NEC where possible.
    - Women should have a permanent seat to the National Council

- Organizational structure

  - Elected offices at the national level constitute inner Executive committee
  - Women and young doctors representative to be members of the committee
  - At the NEC level to include representatives of medical societies (if applicable)

4. Commitment

- Develop initiatives to attract interest in NMA by members such as pension fund, loan facilities, housing schemes, and other investment opportunities.
- Effective and Matured leadership on issues concerning the members.
- Annual conference
- CPD/CME

5. Ethics and profession:

- Develop actions to improve professionalism
- CPD/CME

6. Interaction, cooperation and collaboration with other professional bodies.

7.0 OFFICIAL CLOSING

Official closing session was grace by Dr. Edith Ngirwamungu who thanked the CMA for giving Tanzania an opportunity to host this years symposium on Climate Change and Health; a theme that has brought light and challenges to our country and she urged all health professionals from Tanzania to take all that they have learned from the two days meeting to the grass root so that it can benefit the community at large. She also urged them to take lead in lobbying the political super structure so that issues of climate change and their devastating impacts on health are given a priority at the national level.

She specifically thanked all delegates from outside Tanzania for their commitment and devotion to attend the meeting although on short notice. She cemented on continued collaboration through constant communication so that such initiatives do not varnish in vain. She lastly wished them safe journey back home and welcomed the CMA General Secretary to issue his farewell note.

Dr. Oheneba also thanked all stakeholders for active participation through out the meeting and commended all inputs made in the meetings noting that they have made the two days meeting a reality. On with onwards, the CMA General Secretary also appreciated good preparations of the meeting by MAT particularly under such a short notice. He lastly argued all participants to take the message obtained from the symposium to their countries and blow the trumpets so that the community is aware of the impacts of climate especially to their health and that of their future generations.

LIST OF APPENDICES

Appendix i: Keynote address by Dr. Oheneba OwusuD, Secretary-General of the Commonwealth Medical Association at the official opening of the International Symposium on the Impact Climate Change on Health

Salutation of dignitaries, participants and the media.

Distinguished ladies and gentlemen I am pleased and very honored to have this opportunity to address you on this occasion of the international symposium of climate change on health for doctors in particular but also for other stakeholders in health and beyond.

Let me introduce to you foremost the Commonwealth Medical Association. The CMA as it is known for short is the reorganized civil society organization responsible for the issues of doctors working within Commonwealth countries. It is composed of the recognized national medical associations of commonwealth countries and the President or principal leaders of the NMAs are members of the CMA Council which is the highest decision-making body. The Association however has associate membership for those outside the commonwealth and affiliations with institutions and individuals who share similar objectives. The CMA is recognized by the Commonwealth institutions managing the Commonwealth, that is, the Commonwealth Secretariat and the Commonwealth foundation and also affiliated to the World Health Organization.

Some opinions without much knowledge have questioned why doctors and health professionals should be considered with continuing changes in the world's climatic conditions when these professionals already have lots of challenges at their hands in dealing with the diseases of the world. It is said that after all climatic change is a well known phenomenon that most students would have encountered from their learning of basic geography in school. The position of the COMMONWEALTH MEDICAL ASSOCIATION (CMA) however is that such thoughts are misplaced given the emerging evidences shown by various authorities on climate change especially those that have in the last decade studied the changing patterns of diseases and related health challenges.

Various research reports have demonstrated now strong linkages between the current levels of well know diseases and the emergence of new ones. For well over two decades so much work had been done on the changing patterns of the worlds climate but much of the two level discussion had been led by and involved experts directly concerned with the weather, environment and vegetation changes such as meteorologist, foresters and geographers.

On health the research have shown the threat that the drastic changes in our climate have, not only on the quality of life the world's population but even on the very existence of mankind.

At the civil society consultations among the various health professions in Geneva last year, a special session was devoted to the issue relating to the impact of climate change on health. Subsequently meeting of the Commonwealth Health Advisory Committee (CHAC) on the basis of available scientific evidence set the agenda "Climate **change and Health"** for the 2009 Commonwealth Health Ministers Meeting (CHMM) that took place in Geneva in May.

The CHMM made far reaching recommendations almost all challenges on health in the Commonwealth including the adoption of some protocols that could assist Governments of the Commonwealth in adapting and planning to deal more effectively with the challenges posed by climate change on the Socio- economic condition of their populations especially health.

Prior to the CHMM, the Commonwealth Professionals Alliance conducted a survey among over 200, 000 health professionals within the Commonwealth and indeed the results were very startling. In the survey there was no doubt about the fact that health professionals like most other people of thee world are concerned as 96% of the respondents said they have heard about the issues surrounding climate change especially on global warming from various source and perspectives. 73% thought effects of climate change was a concern to their governments. Despite these impressive results however only 43% said their governments had an action plan or some sort of high level policy consultations on climate change. Among these as much as 70% said they themselves nor their professional associations had no input into or access to their national action plan.

The survey further revealed that government did not seek adequate input from health professionals through various researches coordinated by the world Health Organization had shown clear evidence of the continuing adverse effects of climate change on the changing patterns of Diseases.

The result obtained from the study brings lot of questions to the fore;

Are our governments so un- corporative even on issue of common socio- economic challenges that they do not wish deal with civil society and professional associations in findings solutions for mutual benefit?

- What approaches have the professional bodies made to wards these health challenges?
- How much knowledge do to doctors and for that matter other relevant professional have that will make them confident in contributing to the issue concerned?
- What level of capacity, in terms of strategy and resources, does the effective contributions have that will enable them make meaningful and effective contribution to the action plans against the effects of climate change?

It is these questions that this two day symposium will focus on so that we shall have a blue print for national medical associations and indeed other interested professional institutions to use a guide and adapt their own specific approaches.

The CMA is a major stakeholder Commonwealth Peoples forum which will precede the Commonwealth Heads of Governments (CHOGM) meeting taking place in Trinidad and Tobago in Tree weeks from now.

This we can to build capacity and strategies in order to deliver on our roles of advocacy very effectively towards helping the developmental pursuits of our courtiers. This is the only way we could have the respect and much needed involvement with the policy makers and make crucial input into the development agenda of our countries, the Commonwealth and world at large.

With the assurance obtained from Dr Ngirwamungu, President of the Medical Association of Tanzania, in the organization of the symposium and the very critical and intellectual discussions of yesterday i am convinced these objectives will be delivered to satisfaction.

Let me express the appreciation of the CMA to the MAT for their acceptance to host this important meeting even at short notice. From my arrival here two nights ago and the experiences so far, let me indicate that, It is far so very good: thank you MAT.

The CMA is indeed very grateful for the presence of all of you participants and your deep focus and contributions to the discussions.

Speakers

The media.

Hotel

On behalf of CMA and all of us gathered here I wish to express our great gratitude to the Commonwealth Foundation which accepted to be the major sponsor for this project even on a late application

May God guide this meeting so that at the end we will all be satisfied with the outcome in achieving the original objectives set for the programme.

God bless Us All and God Bless Our Efforts in trying to protect the environment and its related climate in the form He wishes and bestowed it to mankind!!

ASANTE SANA!! THANK YOU VERY MUCH!!!

Appendix ii: **The Programme**

INTERNATIONAL SYMPOSIUM ON CLIMATE CHANGE AND HEALTH

November 5-6, 2009

DAY 1; THURSDAY, NOVEMBER 5, 2009

TIME	ACTIVITY	RESPONSIBLE
8:00-8:30	Arrival and Registration	All
8:30-9:00	Welcome Remarks	
9:00-9:30	Official Opening	Minister- MoHSW
9:30-10:00	Keynote Address	
10:00-10:30	TEA BREAK	All
10:30-11:15	Changing patterns of diseaes and mortality arising out of climate change	Dr Edson Friday AGABA, Principal Medical Officer, MOH, Kampala, Uganda
11:15-12:00	A Regional Research Report: Impact of Climate Change on Health in East, Central and South Africa	Mr Amour, Meteorology Department, Dar Es Salaam, Tanzania
12:00-13:00	Discussions	
13:00-14:00	Lunch Break	
14:00-14:45	Adaptation and Mitigation Strategies on the Impact of Climate Change on health	Dr Edson Friday AGABA, Principal Medical Officer, MOH, Kampala, Uganda
14:45- 15: 30	Commonwealth Health Professional Alliance Survey Report on Climate Change	
	Discussions	All
15:30-16:15	Meeting of National Medical Associations present	
16:15- 17:00	Discussions	
17:00	Closure	

DAY TWO; FRIDAY, NOVEMBER 6, 2009

8:00-8:30	Arrival and Registration	All
8:30-9:15	Commonwealth Climate Change Action Plan	Dr Owusu-Danso, Secretary, CMA
9-15-10:00	Managing effects of Climate Change on Food Security, Water and Sanitation	
10:00-10:30	Discussions	All
10:30-11:00	TEA BREAK	All
11:00-11:45	Sharing of experiences and collaboration with NMAs on strategies for advocacy on combating the effects of Climate Change on health- A Presentation by STPD, ComSec	
11:45-12:30	Country Experiences/Reports	
12:30-13:00	Discussions	
13:00-14:00	LUNCH BREAK	
14:00-15:00	Group Work; Analysing and Defining the role of Doctors/Health Professionals 1. Strategies for Advocacy by National Medical Associations 2. Processes/Indicators for conducting vulnerability Assessment of Climate Change Health Risks 3. Implementation of Adaptation Strategies and how to deal with	All
15:00-16:00	- Reports of Group Work	
16:00-16:30	- Recommendations	
16:30-17:00	- Follow Up Steps/Action	
17:00	**Official Closing**	

Dar-es-Salaam, Tanzania

Appendix iii: CMA Symposium at Glace


CMA
International Symposium On Climate
Change And Health For National Medical
Associations November 5th - 6th 2009
Paradise City Hotel, Dar-es-salaam, Tanzania

Appendix iii: List of Participants

	Name	Organisation	Position	Address	Email	Telephone
1	Dr. Mrs. Mirjana Taylor	Ghana Medical Association	Council Member	P. O Box 201 Regional Hospital Koforidua Ghana	mira2009taylor@gmail.com	+233 208 137 241
2	Dr. Mma Ngozi Wokocha, mni	Nigerian Medical Association	Chairman on Specialties & National President, Medical Women's Association of Nigeria	National Hospital Abuja Nigeria	mmangow@yahoo.com	+234 803 314 1124
3	Eng. Adria Massawe	Ministry of Water and Irrigation	Principal Engineer II	P. O. Box 9153 Dar es Salaam Tanzania	adriamassawe@yahoo.co.uk	+255 754 343 132
4	Mr. Amour Seleman	Ministry of Health and Social Welfare	Environmental Health Officer	P. O. Box 9083 Dar es Salaam Tanzania	matipula@hotmail.com	+255 784 734 275
5	Dr. Oheneba Owusu-Danso	Commonwealth Medical Asssociation	Secretary	Elise Averdieche Str. 17 27356 Rotenburg Germany	oheneba111@yahoo.com	+491 522 795 5905
6	Dr. Emmanuel J. Mpeta	Tanzania Meteorological Agency	Acting Director, Research and Applied Meteorology	P. O. Box 3056 Dar es Salaam Tanzania	empeta@meteo.go.tz empeta@tyahoo.co.uk	+255 22 246 0706 +255 784 645 337
7	Dr. Titus K. Kabalimu	Hubert Kairuki Memorial University	Senior Lecturer	P. O. Box 65300 Dar es Salaam Tanzania	kabalimu_tk@yahoo.com secvc@hkmu.ac.tz	+255 766 529 470
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9	Dr. Lucy Brenda Massao	Medical Women's Association of Tanzania (MEWATA)	Member	P. O. Box 70566 Dar es Salaam Tanzania	kibibi66@yahoo.com	+255 716 313 114
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13	Dr. Margaret Mungherera	Commonwealth Medical Association/ Uganda Medical Association	CMA Vice President: Eastern, Southern & Central Africa	P. O. Box 7072 Kampala Uganda	mmungherera@yahoo.co.uk	+256 772 434 652
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16	Prof. Andrew B. M. Swai	Muhimbili National Hospital	Director of Medical Services	P. O. Box 65000 Dar es Salaam	aswai@mnh.or.tz dms@mnh.or.tz	
17	Peter Sambu	Ilala Municipal Council	Acting DMO/Health Officer	P. O. Box 20950 Dar es Salaam Tanzania		+255 717 030 321 +255 763 573 332
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21	Ms. Caroline Kilembe	Ministry of Agriculture, Food Security and Cooperatives (MAFC)	Principal Agricultural Officer	MAFC P. O. Box 9192 Dar es Salaam Tanzania	caroline.kilembe@kilimo.go.tz	+255 22 286 5950 +255 22 286 5951 +255 753 766 637
22	Dr. Projestine Muganyizi	Association of Gynaecologists and Obstetricians of Tanzania	President	P. O. Box 65001 Dar es Salaam Tanzania	promnga@yahoo.com	+255 717 283 518
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