If the prevalence closely mirrors household levels, it will 'seriously compound the task of producing a sufficient number of highly skilled graduates to fulfil our needs as a developing country undergoing rapid transformation,' says Dr Mvuyo Tom, Vice-Chancellor of the University of Fort Hare.

The study kicked off at the University of Stellenbosch on 11 August 2008 and slowly rolled out across the country, involving all contact students.

Establishing the reality

Dr Asmall says it's likely that many assumptions are made about what university students and staff know about HIV/AIDS, how they handle their intimate relationships and what they feel about HIV/AIDS.

'We want to establish the reality so that institutional HIV/AIDS programmes can be tailor-made for the unique campus communities they serve,' she added.

The policy framework on HIV/AIDS is a road map for campuses to develop, put into operation and strengthen policies, and create overall cohesion with the Constitution and related legislation, and the National Strategic Plan on HIV/AIDS and STIs. It offers guidelines for human and financial resources, leadership, service provision and monitoring and evaluation.

Bolstering the framework is free HIV/AIDS and TB training for campus staff by SAMA's Foundation for Professional Development (FPD), and access to the HIV911 service run by the Centre for HIV/AIDS Networking (HIVAN), a University of KwaZulu-Natal NGO. The HIV911 service enables appropriate referrals for students and staff by providing a database of information on 6 500 organisations that provide HIV/AIDS-related services.

HEAIDS has so far provided R59 million in grant funding to campuses to support service delivery programmes such as upgrading and refurbishing campus health facilities, buying mobile health clinics, improving clinic staffing levels and bolstering prevention efforts.

Chris Bateman

CLIMATE CHANGE KILLS AT LEAST 300 000 EVERY YEAR



Zac Morse, Consultant in Health, Research, Science and Technology, Climate Change and the former Associate Director, Dean's Office, Fiji School of Medicine.

Picture: Chris Bateman

Hundreds of millions of people are being exposed to increased water stress as our planet warms up, over 40% of ecosystems are compromised, coastal flooding and storms are increasing and subsistence farmers and fisher folk face a bleak future.

These are some of the impacts of global warming and climate change on health that emerged at the Global Ministerial Forum on Research for Health in Bamako, Mali in mid-November last year. The alarming knock-on impacts of these phenomena include the growing instability of infectious diseases (and their distribution) and the spread of malnutrition, diarrhoeal and cardiorespiratory diseases.

Research cited by Dr Sadiq Shahab, a public health physician in the community medicine programme at the University of Alberta, Canada, puts the

number of people who die annually as a direct result of climate change at a 'very conservative' 300 000.

He says the number of children dying annually of malnutrition in lower lying areas where crops are withering stands at 7.5 million.

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A panel of top climate change health experts made a joint appeal for improving the scientific basis for predictive modelling, adapting government policies now while evidence improves, and urgently bringing health to the mitigation policy debate.

Shahab says climate change should be an integral part of sustainable public health planning while knowledge sharing, civil society involvement and the Internet are vital to spread the message that urgent intervention is needed.



Professor Rainer Sauerborn, Director and Chair, Department of Tropical Hygiene and Public Health, University of Heidelberg, Germany.

Picture: Chris Bateman

Yewande Aramide Awe, a senior environmental engineer with the World Bank in Washington DC, estimates that up to 9% of the GDP of several countries in sub-Saharan Africa and South Asia is lost due to the effects of malnutrition, mortality and the impairment of cognitive development and educational performance. She warns that food production in southern Africa will decrease by 25% over the next decade, a time frame that suffers from a paucity of research, in strong contrast to excellent predictive climate change models for 2040 or 2050.

Global warming directly responsible for malnutrition

'Half of the nutritional problems are due to climate change. When there is not enough food to eat the body is more prone to infection and it's the most pronounced in children. It's a direct vicious cycle between malnutrition and infection. As water becomes scarcer the likelihood of infectious diseases increases.'

She says sanitation, water and hygiene become crucial factors in reducing morbidity and mortality. For every death prevented through an environmental health intervention, several additional deaths from other diseases are prevented. Shahab backs her call for more medium-term research.

'We have a good idea of what will happen to the forests, noxious emission and sea levels in the long term but we really don't know much about the mid term, especially when it comes to diseases.'

Professor Rainer Sauerborne, Director and Chair of the Department of Tropical Hygiene and Public Health at the University of Heidelberg, says research in the shorter term should hone in on diseases transferred by parasites, bacteria and viruses. Most are extremely sensitive to temperature and moisture and highlight the danger posed by changing malaria demographics. Only 5% of African children sleep under impregnated mosquito nets, he adds. Climate-sensitive infectious diseases included malaria, cryptosporidiosis, leishmaniasis, dengue, Hanga, chikungunya, leptospirosis, plague, cholera, Lyme, and Ebola.

As the global mean annual temperature rose more water was available in the moist tropics and high latitudes but the opposite effect was experienced in mid-latitudes and semi-arid low altitudes. Hundreds of millions of people were being exposed to increased water stress.

Nearly a third of wetlands gone

There were already 'complex, localised negative impacts' on small holders, subsistence farmers and fishers while about 30% of global coastal wetlands were already lost (as against compromised), and millions more people could experience coastal flooding each year.

'Half of the nutritional problems are due to climate change. When there is not enough food to eat the body is more prone to infection and it's the most pronounced in children. It's a direct vicious cycle between malnutrition and infection.

The burden on health services as malnutrition, diarrhoeal, cardiorespiratory and infectious diseases increased and the distribution of some disease vectors changed, would be 'substantial'.

The panel, which included the WHO's Dr Maria Neira, Director of Public Health and Environment, urged the health ministers attending the forum to 'speak to your finance, energy and transport colleagues' to address glaring global health inequities.

'This is all about equity and human rights; the people who are contributing

the least to this climate change are suffering the most. We in the health sector must provide good, evidence-based arguments for use by our colleagues in other sectors,' she said.

Sauerborne said that in the climate change mitigation debate, the 'health argument has only come into it in the last decade or so'. Fighting poverty through environmental policy was what was needed when talking to ministers of health and finance. He proposed a 'no regrets' strategy instead of current practice where climatologists laid their plans around 'avoiding something in the future. Let's do something good anyway, even if climate change doesn't happen,' he argued.

Professor Madeleine Thomson, Senior Research Scientist and Chair of the Africa Regional Programme Committee at the International Research Institute for Climate and Society, The Earth Institute, said the livelihood of the 'vast majority' of Africans was intimately tied up with climate change.

She cited how studying the El Ninho effect on rainfall had been used over the past 4 years to plan malaria control in Africa. One of the biggest challenges in Africa was that meteorological services were designed around aviation and security (falling under the military in many countries), instead of being focused on development and food security.

Data useless if countries can't use them

A vital point often missed by those formulating policy around climate data as a means of achieving the Millenium Development Goals was that there was little point in investing in new data without investing equally in people's capacity to use them.

It was essential that a 'climate-smart' health community become capable of using climate information to improve health outcomes 'today while learning about the potential risks for tomorrow,' she concluded.



Professor Madeleine Thomson, Senior Research Scientist and Chair, Africa Regional Programme Committee, International Research Institute for Climate and Society, The Earth Institute, Columbia University, USA.

Picture: Chris Bateman

Zac Morse, an independent consultant on health and climate change and a former associate director in the Dean's office at the Fiji School of Medicine, said it was essential that climate change be included in the medical curriculum. He described climate change as 'the biggest health issue there is'.

Dr Neira ended on a positive note, pointing to the growing body of scientific evidence and increasing political will on climate change, citing Al Gore and the Inter-Governmental Panel on Climate Change having won the Nobel Peace Prize for their work. She said the 61st World Health Assembly had requested her Director General to work on quantifying the scale of health vulnerability to climate change and report back.

One of the biggest challenges in Africa was that meteorological services were designed around aviation and security (falling under the military in many countries), instead of being focused on development and food security.

While relevant research was increasing rapidly, it lagged far behind more traditional risk factors and needed acceleration so that applied research programmes could support decisions in the field, enhance health and health equity. Improved evaluation of current climate-related health risks, identification of sensitive populations and their life stages, quantifying the fraction of morbidity and mortality attributable to climate hazards and climate change and improved assessment of climate health linkages were priorities.

'We know about the effect of heat waves but what about climate-sensitive diseases?' she asked. Improved economic assessment of health benefits from climate change mitigation was essential if health practitioners and researchers were to persuasively argue for vital funding.

Most impacts of climate change would be felt by the poorest countries and populations, she stressed.

Chris Bateman