

How can climate information build a resilient Malawi?

Report of a panel discussion



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Capital Hotel

Presentations

Mr Jolamu Nkhokwe, Director, Department of Climate Change and Meteorological Services, Ministry of Natural Resources, Energy and Mining

Ms Shamiso Najera, Deputy Director, Environmental Affairs Department, Ministry of Natural Resources, Energy and Mining

Professor Declan Conway, Grantham Institute on Climate Change and the Environment, London School of Economics and Political Science

Panellists

Professor Andy Dougill, Dean of the Faculty of Environment, University of Leeds

Ms. Elina Kululanga, Climate Change Information Specialist, Department of Climate Change and Meteorological Services, Ministry of Natural Resources, Energy and Mining

Mr. Julius Ng'oma, National Coordinator, Civil Society Network on Climate Change (CISONECC)

Mr. Sothini Nyirenda, Programme Analyst for Climate Change and Disaster Risk Reduction, United Nations Development Programme (UNDP)

Moderator: Dr David Mkwambisi, Country Team Leader, UMFULA

Summary of Discussion Points

- Generation of weather and climate information is improving. There is increasing demand for targeted and tailored weather and climate products in various sectors;
- District level seasonal forecasts are now being generated;
- There is growing recognition of the need for people-centred information at community level – which is communicated effectively (in appropriate languages and in a timely fashion to facilitate decisions);
- There is interest in improving urban resilience;
- The current focus is mainly on short term weather information (up to seasonal) – but there is recognition that longer term climate information can inform priorities and activities in policies and strategies, including the National Climate Change Management Policy, National Resilience Strategy and Malawi Growth and Development Strategy III, in which climate information can play a role in determining priorities and activities; and
- Government, donors, CSOs and research institutions are all engaging in weather and climate services and there are many opportunities for partnership and lesson sharing.

The following presentations were made:

Presentation by Mr. Jolamu Nkhokwe, Director of Department Climate Change and Meteorological Services (DCCMS)

Mr. Nkhokwe outlined his department's responsibility of monitoring and recording weather and climate information. The department generates and disseminates daily, weekly and seasonal weather forecasts and climate projections with the aim of application in various sectors, such as agriculture, hydrology, health and disaster risk reduction (through early warnings).

He also outlined a number of challenges faced by the department such as:

- There is limited staff numbers. As such, volunteers have been engaged to take readings from a number of meteorological stations; and not all districts have meteorologists to interpret information for stakeholders and to engage at local level;
- Inadequate coverage of rainfall data/information. There are very few weather stations, particularly for monitoring rainfall. This becomes a problem in the rainy season when there is demand for information from areas that have no rain gauges;
- Spatial resolution of forecasts. Every village wants to have its own specific weather forecast but the department is constrained in its ability to localise information;
- Vandalism of equipment – with high replacement costs; and
- Lack of equipment for monitoring certain parameters: for example, there are no weather radars and no equipment for upper air observations.

Ms Shamiso Najira, Deputy Director of Environmental Affairs Department (EAD)

Ms Najira outlined EAD's mandate to manage climate change issues and the environment, noting the close linkage between the two.

With regards to climate change, EAD deals with adaptation, mitigation, capacity building, research, technology development and transfer and climate finance. The department develops policy frameworks such as the National Climate Change Management Policy, a multi-sectoral policy which has an implementation, monitoring and evaluation strategy from 2016-2020. She also highlighted the Climate Change Investment Plan (2014-2018), which outlines the investment areas that are required for Malawi, including information and research. The department is also involved in the development of the National Resilience Strategy with the Department of Disaster Management Affairs, working together with Ministry of Finance to come up with an investment plan.

EAD also acts as the Focal Point for the United Nations Framework Convention on Climate Change (UNFCCC) and is in charge of reporting obligations. The Third National Communication is currently under development. The department has prioritised the adaptation and mitigation options through the Nationally Appropriate Mitigation Actions (NAMAs) as well as the National Adaptation Plan and National Adaptation Programmes of Action. EAD also led development of the Nationally Determined Contribution. Key sectors of focus are waste, energy, forestry and other land use, industries and agriculture.

EAD has undertaken a number of activities to date on climate change:

- Established climate information centres with DCCMS in a number of districts (funded by UNDP). At the moment, there are studies which are trying to monitor how these centres are performing in-terms of providing information to the communities, and there is the desire to scale up;
- Climate Change Weeks have been held in conjunction with World Environment Day (5th June) to sensitize the public;
- Produced policy briefs and other publications with other stakeholders such as the Centre for Environmental Policy and Advocacy and CISONNECC;
- Translated the National Climate Change Management Policy into the local language to improve accessibility;
- Mainstreamed climate change in the primary and secondary curricula, in partnership with the Ministry of Education;
- Developed education materials in several languages, such as posters to encourage learners to be agents of change in their communities; and
- Developed a community source book in the local language funded by EU under the project planning for climate change, so that communities understand what climate change is all about.

Professor Declan Conway, Grantham Research Institute on Climate Change and Environment and Principle Investigator on the UMFULA Project

Professor Conway introduced the UMFULA project as one within the DFID and UK Natural Environment Research Council-funded Future Climate for Africa programme. UMFULA has 13 partners, including Lilongwe University of Agriculture and Natural Resources in Malawi. The project is trying to develop an understanding of climate science in the region of Central and Southern Africa and to use insights from that understanding to guide impact modelling of the hydrological systems in the Rufiji River Basin and Shire River Basin. The project will then characterise what the potential impacts of climate change might be. With this understanding, it will be possible to derive the implications for society and opportunities for adaptation and anticipatory practices which will enable society to deal with some of the shocks and stresses which will occur in the future.

Professor Conway outlined the nature of climate change and what UMFULA hopes to achieve. Projections from the Integrated Panel Climate Change (IPCC) expect that warming will continue in the future between the range of 0.5 to 1.5 degrees in the next 30 to 40 years at a more rapid rate than what we have seen in the last 50 years. Increases in evaporation are expected which will affect lake levels water and availability. Some models are projecting decreases in rainfall whilst some are projecting increases, so there is very high uncertainty of the nature of how rainfall may change in future. However, he said that there is high confidence that frequency and intensity of extremes associated with rising in temperatures, such as heat waves and droughts, will become more frequent in the future.

UMFULA has produced and disseminated information products which capture some of the latest findings on climate science from the IPCC reports distilled into briefs for Malawi. Through the understanding of climate science UMFULA wants to get a better understanding of what are the drivers of variability and extreme events in the region, to see whether those drivers and processes are well represented in models, so that it is possible to see which models best represent the Southern African climate. The insights from the climate science will be used to model impacts. These are hydrological models which will be coupled with the decision-making systems that consider the ways in which decisions around water allocation are taken by various sectors, and what the main stresses are in the water system.

He added that UMFULA is developing a WEAP water model for Lake Malawi and the Shire River basin. There are various actors in the country to inform the identification of key concerns and water management goals. Looking at the multiple uses of water, such as domestic purposes, irrigation, food security, energy, environmental services etc., trade-offs can be identified to see if future performance metrics will be met under climate change. Through the models UMFULA hopes to give answers to such questions and at the same time identify management strategies that can offset changes that might occur in future.

UMFULA is also involved in a range of other activities, such as supporting research students for MSc, and undertaking more specific research studies looking at sugar and tea production, and their sensitivity to climate change.

Professor Conway concluded with three key messages that emphasise challenges and opportunities in climate change:

1. Climate change is likely to exacerbate the problems that we see, particularly with floods and droughts and the frequencies;
2. There are activities and actions that can be implemented to better deal with extreme events, before, during and after they occur; and
3. Through UMFULA he hopes to give insights on trade-offs between allocations of water to different sectors, so that they can be used to manage risks.

Panellists' Reflections

Professor Andy Dougill, University of Leeds, said that work looking across sectors at country level recognises the need for collaboration - as climate change affects all sectors - but that there should be more analysis and collaborations in the future. He particularly highlighted need for promotion of land management practices. His research has shown that conservation agriculture builds capacity to cope, especially with dry spells. Some positive adaptation is already happening and we need to build on it for the future. He mentioned the option of irrigation in the tea and sugar sectors, and concluded that even if the generation of more robust climate information is slower than expected, it will keep getting better and better.

Ms Eleanor Kululanga, DCCMS, stated that the main agenda of her department is to be an authoritative arm of government when it comes to data collection on climate, and to ensure that this data is used to come up with the relevant information tailored to different stakeholders in their respective sectors. She highlighted the efforts of DCCMS to date in providing adequate and timely information for programme planning and implementation. In particular she mentioned that DCCMS is working towards providing localised information, and have piloted district-specific seasonal forecasts. They are also engaging other sectors to produce various context specific information based on needs, co-generating information and packaging it in a user-friendly manner to contribute to the resilience agenda of the country.

Mr Julius Ng'oma, CISONECC, said that effective adaptation will need climate modelling information and the information needs to be reliable, timely, adequate and localised. He highlighted that Civil Society Organisations would like to ensure that they have this information available in a timely manner. One challenge is the uncertainty in information and this uncertainty should be communicated to stakeholders. He noted in his experience that communities often struggle to understand and interpret the probabilities that are included in the seasonal forecast. He highlighted

that CISON ECC and its members are also working on co-generating information, and are planning to make use of the available information to inform community planning.

Mr Sothini Nyirenda, UNDP, observed that over the last 10 years, increases have been seen in the impacts of climate events, levels of vulnerability, and number of communities that are affected. He said UNDP is happy to have worked with DCCMS, EAD and the Department of Disaster Management Affairs (DODMA). He credited DCCMS with progress but highlighted the challenges of maintaining observational data from new automated weather stations given dependence on electricity and cell phone signals. Additionally, he highlighted the challenges that information goes out but does not always make sense to the lay person, and there is an absence of meteorologists to provide interpretation. UNDP is also involved in capacity building of hydrology and DCCMS engineers. He said that Malawi has taken an integrated policy approach and things are getting better, with a number of policies and implementation frameworks developed in recent years.

Participants Discussion and Comments

Ms Esther Mweso, United Purpose, noted that in previous years the seasonal forecast had been localised to districts, and asked why this was not the case this year.

Mr Nkhokwe responded that DCCMS has produced district forecasts for all the districts in the country and MET officers are now disseminating the information.

Dr Stern Kita, DODMA, appreciated the panel discussion but asked the panellists to comment on the new knowledge generated, and whether it is informing ongoing processes.

Professor Conway, replied that the UMFULA project is bringing a lot of change through improvements in scientific understanding of climate system. It is an incremental process where scientific knowledge and understanding is improving. By looking at past events, it is possible to identify what went wrong in terms of responses and early warning, and to identify barriers and challenges and identify entry points for improvements.

Ms Najira added that climate information is being used by EAD to improve public understanding of climate change through the Climate Change weeks, and symposia with dissemination of research findings and emphasis on how government departments can utilise them. She also highlighted that the National Climate Change Management Policy mandates the establishment of a Climate Change Fund, learning from Rwanda's experience, which will enable climate information to be put into practice through various projects and initiatives.

Mr Chimwemwe Gondwe, Action Aid, highlighted the need for researchers and decision-makers to put people first, looking at how communities are supported, mentioning cases of previous disasters where people were moved, and enquiring as to what town and city planners are doing to reduce risk.

Noting that she could not speak on behalf of the Ministry of Lands, Housing and Urban Development, **Ms Najira** agreed that there is a need to consider local communities in interventions. She cited one of the projects EAD is implementing ("Climate-proofing local development gains") which aims to integrate climate change into planning at district level. But the issue of climate finance is a big challenge, without which the Ministry is limited in its ability to implement the policy interventions. On the issue of relocations in Nsanje she noted that, whilst the issues are with urban developers, the government has a challenge because when people are evacuated from high risk areas they have a tendency to go back.

Professor Conway highlighted that the UMFULA project is looking at longer term future climate (5-40 years) and it is difficult to integrate with the current planning time scales. This means that making linkages between the communities and modelling is very difficult and the scale of the climate models is not appropriate to downscale to community level. Instead it can inform medium-term planning (e.g. through the Malawi Growth and Development Strategy III).

Mr Arnold Mlelemba, Ufulu Radio, highlighted the problems of fake news and scare mongering weather updates and asked what mechanisms have been put in place to ensure such news is dealt with before it circulates.

Mr Nkhokwe admitted that social media is difficult to regulate and that, as a department, they do not have any mechanisms currently. However, he highlighted that, on hearing about the fake forecast, they managed to disseminate the disclaimer that DCCMS did not issue those statements.

Mr Austin Tibu, LUANAR, asked whether the country has a vision on the direction to take in order that to inform the information and data needs. He observed that in the current policies there are no pathways, meaning that the scientists have to generate their own, or use the UNFCCC ones which may not make sense at local level. He also highlighted that there is limited understanding of what the communities want and this is a concern that has to be addressed in order to come up with country models.

Mr Sothini Nyirenda noted that it is difficult to achieve resilience in 5 year timeframes, which is longest planning length (e.g. with the Malawi Growth and Development Strategy).

Mr Charles Nkoka, Association of Environmental Journalists, asked the extent to which projects are learning from each other, and also reiterated the need for localising climate information and ensuring that it gets to communities in appropriate languages.

Professor Dougill pointed out that there is an appetite in country for better climate information so that people can act/respond appropriately. UMFULA wants to produce decision-relevant information, but because of different timescales it is difficult to target this to community levels. However, resilience in the long term is helped by short term climate information. And even if information is clear and in a language that people understand, there is need for a strategy to act upon it.

On projects learning from each other, **Ms Najira** added that EAD's approach to climate change is to refer to District Development Plans (DDP), which are informed by community level development plans. Climate change is now a chapter in the DDPs, and the plans highlight community level priorities. The challenge is that there is piecemeal approach, and issues are not addressed holistically because of lack of resources. The result is that the impact is not really seen. But government is trying to take a more integrated and holistic programme approach, for example through ecosystem-based adaptation.

Professor Dougill highlighted the conflict between what UMFULA was funded to do (consider 5-40 year timeframes) and where the priorities are in country (shorter term weather information). However, he reiterated that the two are not mutually exclusive, as understanding of how marginalised groups use information now can be used to inform the generation of climate information and advisories.

Mr Chikumbutso Kilembe, Irish Aid, explained that various climate information services have been undertaken before in Malawi, for example in the Enhancing Community Resilience Programme. However, he noted that even when implementing, there are challenges of understanding information among the highly educated implementers, and so for the people in the village it may take a long time

for them to understand. He highlighted that even though information may be disseminated, it takes more than dissemination to create understanding. He also proposed different ways in which climate and weather information should be used and alternative channels through which to disseminate information, for example when distributing inputs under the Fertiliser Input Subsidy Programme (FISP), as opposed to relying only on extension systems. Additionally, different processes such as planning and distribution of FISP distribution should be dependent on weather information.

Dr Stern Kita, DODMA, explained that government is using climate information for decision-making and planning, highlighting processes of resilience design for addressing effects of climate change and climate variability, as well as planning issues of disaster risk management and preparedness and contingency planning. He said the challenge arises when sometimes the kind of climate information may not be accurate, or it conflicts with other messages, or is framed in a way that affects users of the information. Sometimes, for example, the kind of recommendations are not in line with the types of cropping systems that are in place. On other occasions, the information is disseminated but the utilization is a challenge. DODMA is trying to implement community-based Early Warning Systems so that communities can communicate directly with DCCMS to both receive and produce warnings. The National Resilience Strategy is based on climate information because of its focus on food insecurity, particularly focusing on issues of drought and floods.

Ms Kululunga recalled a DCCMS pilot project in 2010-2012 under the Africa Adaptation Programme. In that project, they tried to generate and give district forecasts, focusing on Karonga, Chikwawa and Nsanje. They worked with the community radios to disseminate information because this is what the communities themselves suggested.

Mr Nyirenda affirmed that communication and understanding of information is very important. He stated that the country is making slow progress, and that fora like these are important to share experience and increase resilience.

Mr Ng'oma said that civil society has been trying to engage government to move away from business as usual scenarios and ways of disseminating information, rather promoting multi-stakeholder fora where there is co-generation of information, and plans made with communities on how they will use that information. In particular, CSOs have piloted participatory scenario planning, where people generate and use the information, and also track what is happening with decisions. As well as coming up with an action plan on how communities are going to make use of the information which they are generating. As CSOs we have piloted participatory scenario planning where people generate and use the information and also track what is happening with these decisions.

Mr Gift Richard Maloya, ICAD, referred to other Future Climate for Africa outputs in terms of videos outlining how tea farmers are utilising climate information in Rwanda. He asked whether DCCMS was aware of the project; how the project is engaging with civil society, smallholders and the private sector; and how it can be used to generate political will.

Mr Nkhokwe confirmed that DCCMS is well aware of the UMFULA project and has nominated a desk officer who has been the main contact point over the last two years. He also confirmed that the department will take advantage of the project to improve its services. One of the key activities that they are taking advantage of is the generation of country-specific information in the form of the Malawi climate briefs. He added that DCCMS want to improve the provision of climate information.

Professor Dougill explained that UMFULA is also investigating how climate information can inform planning in the tea sector in Malawi, and that they will be working with the Rwanda team. In terms

of influencing political will, Dr Mkwambisi is part of UMFULA and is the link to ensure research findings inform higher level dialogue.

On the subject of linking with civil society, **Dr Katharine Vincent, Kulima Integrated Development Solutions**, explained that UMFULA is working in close collaboration with CISON ECC and circulates six-monthly updates reporting what they are working on, as well as disseminating project outputs. They also cooperate extensively with CSOs and organisations working on Disaster Risk Reduction and Climate Change Adaptation, and always welcome areas of collaboration with other donors.

Professor Martin Todd, University of Sussex, asked for more information on the type of participatory planning and contingency planning that takes place in Malawi, so that people can act upon seasonal planning at district level.

Mr Nyirenda answered that the contingency plan in Malawi depends on the seasonal weather forecast. He mentioned that the country has done a lot at national level but not so much at district level. He cited a report that shows only 1% of funding gets to district level, with the majority locked up at headquarters at national level. Climate information is important for planning instruments, and the project time frames should be considered in order to achieve the desired impact.

Closing Remarks

The Moderator, **Dr Mkwambisi** thanked the presenters and the panellists for their time and availability to participate in the panel discussion. He also gave a word of appreciation to all the participants for the fruitful discussion and promised to use the results of this discussion to inform the UMFULA programme.

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