

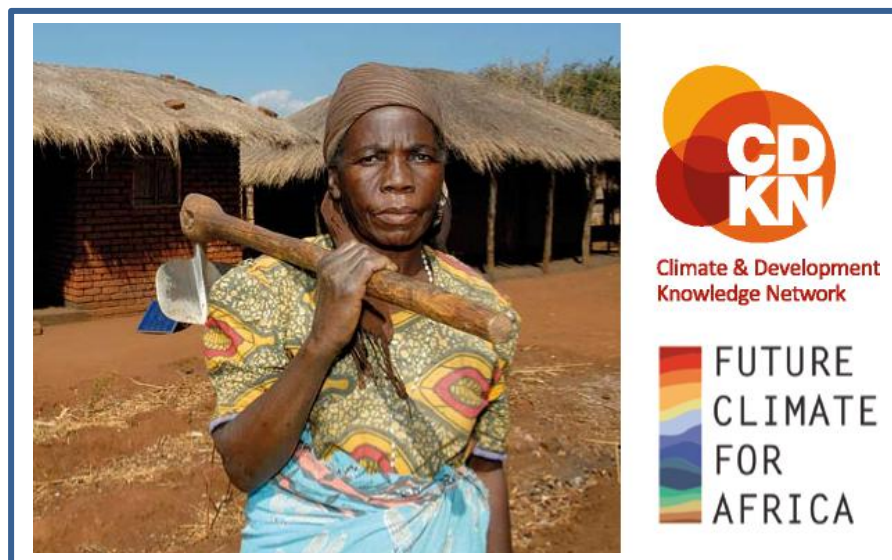


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Using climate information to achieve long-term development objectives in Malawi

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SUMMARY

Climate Change is altering the context in which decisions are made. In order to remain robust and sustainable within the context of changing climate, policy and planning decisions need to take into account projected changes in temperature, rainfall and extremes. In order for climate scientists to generate useful future projections, they need to understand what weather and climate information decision-makers need. This policy brief highlights key findings from the FCFA Malawi pilot case study regarding how current and future climate science can enable development and humanitarian policy, planning and implementation that is climate smart and robust to projected climatic changes in the medium- to long-term.

Key Messages

1. A pilot study on the use of climate information in decision-making in Malawi finds that ministries and departments are not yet using medium- to long-term (5–40 years) climate projections, despite the availability of regionally-downscaled information and the latest projections reported by the Intergovernmental Panel on Climate Change (IPCC).

2. Current barriers that prevent use of weather and climate information in planning are the scale, accessibility and timing of information, as well as the nature of policy-planning cycles and lack of linkages with indigenous knowledge.

3. Better use of existing information would improve the resilience of policy-making and planning in Malawi in the face of climate change. This is encouraged in the National Climate Change Policy.

4. There is scope for inclusion of existing medium- to long-term projections in the creation of documents for Malawi's long-term development vision.

Approach

Three complementary methods were used.

1. Policy analysis was undertaken for sectoral policies and plans, with emphasis on food security, social protection and disaster risk reduction.

2. Semi-structured interviews were held with six ministries in Malawi in order to interrogate the current nature of decision-making and the extent to which weather and climate information plays a role. These were the Ministry of Agriculture and Food Security (MoAFS), Ministry of Economic Planning and Development (MEP&D), Ministry of Irrigation and Water Development (MoIWD), Ministry of the Elderly and Persons with Disabilities (MoEPWD), Department of Disaster Management Affairs (DoDMA), and the Ministry of Environment and Climate Change Management (MECCM), as well as various nongovernment organisations (NGOs) and bilateral development partners.

3. A multi-stakeholder workshop was also held, based on role plays and serious games in order to elicit potential weather and climate information needs from decision-makers.

Findings

Malawi's policy and planning process

Malawi's planning process at national level is enshrined in two documents: the Vision 2020, which outlines the development trajectory for the country over a period of 20+ years (i.e. long-term); and the Malawi Growth and Development Strategy (MGDS) (currently in its second stage, from 2011–2016), which aims to operationalise this long-term vision through a series of five year plans (short-term planning). Ministries devise their own plans and strategies in order to achieve the goals and targets outlined in the MGDSII, and so sectoral planning takes place over a five-year maximum

timeframe. The MoAFS and the Department of Climate Change and Meteorological Services have a good communication system in place for transmitting seasonal forecasts; and several other ministries reported using the standard five-day weather forecast. However, despite the availability of the latest global climate model projections in the IPCC, and high resolution downscaled projections generated by the Climate Systems Analysis Group (CSAG) and the Council for Scientific and Industrial Research (CSIR), these are not currently used in planning and policy-making.

Barriers to the use of weather and climate information

Various barriers exist to prevent the use of weather and climate information in decision-making.

Current information is viewed as inappropriate to spatial and temporal scales of decision-making, with the MoAFS citing the need for downscaling to suit agro-ecological zones; and DoDMA requiring the timing (and spatial distribution) of extreme events, as opposed to probabilistic average conditions currently offered by seasonal forecasts.

The accessibility of information was also widely considered to be a problem, with DoDMA and the MoEPWD citing problems with interpretation and translation of the technical jargon into advice that they could use and further disseminate. The issue of uncertainty arose not so much in terms of challenges of dealing with an unknown future, but more due to uncertainty in knowing the uses and limitations of climate projections, particularly since there is not one set of scenarios that has been generated for specific use in Malawi.

Timing of the receipt of climate information is also problematic and links to the communication issues outlined above. Interviewees from the MoEPWD did not think that the information they receive or the form in which it is provided is adequate, thus limiting their confidence and willingness to issue early warnings. Other ministries also said that they do not always receive information in a form that can help them to give early warning and prepare for disasters.

Policy cycles are incompatible with climate information time horizons. The MDGSII is the strategic document to operationalise the longer-term Vision 2020. Sectoral planning within Malawi's ministries should align with this five year time frame. Such short planning horizons make it difficult to integrate medium- to long-term climate information.

The links between scientific and locally-held information have not been investigated. The use of locally-held knowledge was raised by a number of interviewees as being in need of more attention. Although the greater range of conditions inherent under climate change can challenge the validity of indigenous knowledge, there is still much local trust in traditional systems. An interviewee from the MoAFS reiterated that "rural people are used to predicting the future, and building on indigenous knowledge is a sound way of introducing the complex idea of uncertainty in future weather and climate predictions". Highlighting the links would help to improve credibility and acceptability of scientifically-generated weather and climate information, and thereby improve its use in decision-making.

Opportunities for improving the use of weather and climate information

Despite the barriers, decision-makers recognised many opportunities for using weather and climate information to improve the resilience of policy-making and planning in the context of climate change.

Potential uses exist for information at the seasonal and annual scale as well as for short-term information (1–5 years). Information on extreme events – especially floods and droughts but also strong winds and hail – was regarded as being very useful, as was the location of these extremes. Many ministries asked for multi-year (up to five years in advance) forecasts for a variety of parameters (e.g. temperature; intensity, amount and distribution of rainfall; drought). Additionally, all of the ministries recognised that the short-term information that they identified above was also useful on a medium-term (5–40 years) timescale – e.g. temperature and rainfall projections for 10 years from now. For example, the MoIWD acknowledged that knowing changes in these parameters would be essential in the design and

location of future dams. The majority of this information currently does not exist, but the insights can inform the development of climate science.

There is already scope for integration of medium-long term climate information (5–40 years). Policy analysis and interview data suggest the longest timeframe for political decision-making in Malawi is currently over a 10–15 year horizon. The MEP&D leads on this planning to inform the country’s long-term visions but in interviews stressed that they “don’t yet use climate change information for timescales of five years or more when appraising new projects or policies”. They are, however, accustomed to economic modelling over a 10–15 time period, using scenarios of population growth, and see the potential for incorporating climate change projections into economic models to identify where climate change could limit economic growth, thus prioritising climate-resilient investment decisions.

Improved understanding of the opportunities and limitations of weather and climate information will enable greater use. Several interviewees across a variety of ministries noted the need for a better understanding of what climate change is and the risks it poses. In addition, various ministries reported that their staff have limited capacity to understand weather and climate information. Capacity building and training on climate change, its potential impacts and how to integrate short- to medium-term term climate information into existing policies and decision-making processes is required. Generating stakeholder agreement on the use of a country-wide set of standardised projections to guide national decision-making would also help to reduce the use of multiple overlapping sources of climate information.

Conclusion and recommendations

Currently Malawi only uses sub-annual (five day and seasonal forecasts) weather and climate information in its decision-making, putting policies and plans at risk from the impacts of climate change. There is scope for better incorporation of medium- to long-term climate projections into the country’s long-term vision.

In addition, ministries identified a number of other entry points and information types that would enable them to make climate-resilient decisions. These information needs can inform the development of climate science so that it provides, and then effectively communicates targeted, tailored and timely weather and climate information to exploit opportunities and reduce losses. The generation of new, decision-specific information, including a country-side set of scenarios, will further help reduce uncertainty and enable active use of climate services in medium-term decision-making in Malawi.

Findings presented in this brief will inform the Future Climate For Africa (FCFA) and Department for International Development (DFID) Malawi programmes. They will also assist the Government of Malawi in identifying opportunities for synergies and improved use of weather and climate information in their national policies and commitments under the United Nations Framework Convention on Climate Change (UNFCCC), including the National Adaptation Plan (which is in process). Furthermore, there is potential to link with other initiatives in Malawi and globally, for example the Global Framework for Climate Services, a global partnership of governments and organisations that produce and use climate information and services.

Endnote

1 Note these were the names at the time of the research: since the national election in May 2014 many ministries have changed.

About the Sustainability Research Institute

The Sustainability Research Institute conducts internationally recognised, academically excellent and problem-oriented interdisciplinary research and teaching on environmental, social and economic aspects of sustainability. We draw on various social and natural science disciplines, including ecological economics, environmental economics, political science, policy studies, development studies, business and management, geography, sociology, science and technology studies, ecology, environmental science and soil science in our work.

About FCFA

Future Climate for Africa (FCFA), is a new five-year international research programme jointly funded by the UK's Department for International Development (DFID) and the Natural Environment Research Council (NERC). The Programme will support research to better understand climate variability and change across sub-Saharan Africa. More information is available at <http://www.nerc.ac.uk/research/funded/programmes/fcfa/> The programme will focus on advancing scientific knowledge, understanding and prediction of African climate variability and change on 5 to 40 year timescales, together with support for better integration of science into longer-term decision making. CDKN is responsible for coordinating the FCFA scoping phase – an 18 month exercise uses six case studies in sub-Saharan Africa to evaluate the needs of science users in the context of the capabilities and limitations of current science. This briefing note was part of fourth in the series.

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Further Information

Information informing this policy brief is taken from an academic paper with the same title which is under review at *Climate Policy*.

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