Case study: Weather and climate forecasting for community resilience to climate related risks and shocks

MINISTRY OF WATER AND ENVIRONMENT
DEPARTMENT OF METEOROLOGY

This case study showcases Meteorology Department's innovation to simplify, interpret into advisories and translate into local languages the seasonal weather forecast. This innovation started in June 2012 with financial support from ACCRA consortium in the leadership of World Vision Uganda.

Introduction

The Uganda Department of Meteorology (DoM)'s mission is to be a centre of excellence on weather and climate services with a view to promoting sustainable development. It seeks to contribute to sustainable development through provision of quality, customer-focused, cost-effective, and timely information for all users on weather and climate services. In June 2012, the DoM issued its **first simplified seasonal forecast with advisory messages**. This was translated into four (then seven, and most recently ten) of 52 local languages, along with sector-specific advisory messages for rural communities. The DoM and the Department of Disaster Preparedness and Management in the Office of the Prime minister (OPM) spearheaded this initiative, supported by ACCRA whose consortium members helped in the dissemination of the seasonal forecasts.

Why is weather forecast and climate information important to Uganda?

25.7 million Ugandans, roughly 70% of households are dependent on rain-fed agriculture, including 5.8 million men and 5.7 million women farmers.[1] The UN's Food and Agriculture Organization determined that the drop in the growth of the Ugandan economy from 6.6% in 2004-05 to 5.3% in 2005-06 was largely due to the variability of the weather, specifically, its impact on agriculture (Uganda National Development Plan 2010). It is therefore critical for farming communities to know the weather during the cropping season and anticipated situations, allowing them to plan better to prevent or avert impending disaster or loss of crops and livelihood.

Recommendations

More funding required from government, donors, CSOs and private sector to increase the number of languages and dissemination coverage allowing all citizens to access timely seasonal forecast and the crucial advisory messages.

Women sharing traditional methods of weather forecasting with Meteorology department staff, Kasese district, Uganda

More weather monitoring equipment at local level required to continue improving the accuracy of the forecast at the local level. This means having operational weather stations in all districts and basic rain gauges at community level.

Strategic relationships with telecommunication companies to utilise **mobile phone technology** to boost the dissemination country wide in addition to existing channels.

Community based weather data collection should be promoted which will foster a two- way communication between Meteorology and end users of weather forecast. Training local based data collectors including institutions like schools and churches.

National and international civil *society* in Uganda should coordinate to provide greater dissemination at the local level and support awareness building of value of weather and climate information.

Inclusion of seasonal weather forecast utilisation into the national early warning monitoring and evaluation system: this is to ensure weather forecast is an integral part of the early warning systems in the country.

Indigenous knowledge and forecasting is still trusted by rural communities. Therefore should be well documented and aligned with science.

Impact of the translated and down-scaled seasonal forecasts – before and after

Challenges prior to 2012	After 2012
The majority of rural farmers did not have **access** to the forecast.	*Post-forecast impact assessment showed that in the pilot regions (Otuke and Kitgum) the majority of communities had received the forecast in time.* *Gender disaggregated vulnerability assessments and post-forecast impact assessment demonstrated that women and men access this information in different ways. This needs to be taken into account in scale up to ensure women have access to this information and guidance.*
Timeliness was a challenge and many farmers reported that they did not get access to the forecast until the season to which it referred was over.	*Most pilot areas received the forecast in time, helping them make planned and informed decisions regarding farming activities – i.e. opting for different crops and/or building irrigation canals in preparation for long rains.*
Terminology was complex and technical making it inaccessible for non-experts.	
Interpretation of forecasts was done on an unsystematic basis that lacked back-up from sector-based expertise. This led to poor advice and forecasts that were inadequately interpreted. There were no clear messages or guidance of what different sectors should expect from the forecast.	*DoM brought together stakeholders and experts from line ministries to 'translate' what the forecast might mean in practice for different sectors. These were packaged as simplified advisory messages for affected sectors such as health, agriculture, energy, water etc.*
Language acted as a barrier as forecast information was published in English, rather than in any of the 52 local languages.	*DoM hires experts to translate weather forecasts into local languages (four initially, then seven and most recently ten).*
Dissemination was a challenge because the Meteorology Department, ministries and local governments lacked the resources and coordination required to do this effectively.	*DoM was able to collaborate with ACCRA consortium members and networks (Oxfam, World Vision Uganda, Save the Children and Care International), Climate Action Network (CAN -U) to disseminate information to community members by means of radio, meetings, churches and markets. Other platforms for dissemination include DRR national platform members and Uganda, Uganda Local Government Authorities Association (ULGA).*
Lack of access to timely and understandable forecasts, meant that people relied on **traditional methods** for weather forecasting within a context of a changed environment and more variable climate.	*DoM is seeking to better understand how to integrate science with traditional prediction methods, given that these are widely used at the local level.*
Because of all the reasons above, local communities and local government either **did not know or did not trust** the official weather forecast, or the institution that produced it. This further deepened perceptions that it was not useful or accurate.	*These perceptions take time to overcome. Some communities, because they were involved in the community vulnerability assessments and sensitization are starting to use it. Awareness building is required if this is to be scaled up to ensure forecasts are accessed and used as early warning for farmers and in guiding their activities. For better accuracy local weather stations should be operational to provide more local accuracy.*

Community voices

"For the first time we have received the weather forecasts in the local language, which has not happened before. When I heard the programme on the radio, I was excited and kept listening every day. I do not know how to write, so I instructed my son to write the important points. It has helped me to plan and so far the forecast has been accurate" - ***Akello Lucia, Woman respondent, Amida Sub-County, Kitgum District.***

"The other positive issue for farmers was that this time the forecast included agricultural advisories. The harvest has been high and some food is being sold to raise income" - ***Community meeting, Otuke District, Olim Sub-County***

"The translated weather forecast has come at the most right time, the district has planned to procure agriculture inputs for its community members under District Livelihood Support Programme (DSLP) (and) with this information the yields will be better because the farmers can make informed decisions using the advisories given." ***District official, Bundibugyo District***

"The seasonal forecast predicted prolonged rains up to Jan-Feb, which are usually dry…we have followed the advice and prolonged planting activities. New crops which were not being grown in certain areas have also been introduced and are doing well, especially cassava, sweet potatoes and soya beans" - ***Community meeting, Otuke District, Olim Sub-County***

"We request that you intensify dissemination of the seasonal forecast information to the general community. Traditional forecasting has failed to work and we do not know how to plan farming activities anymore" ***Male farmer, Olilim Sub-County***

Communities participating in the impact assessment of the seasonal forecast in Otuke district, Uganda

Key Lessons and conclusions

⇒ **Local language** is key in communicating the weather forecast terminologies to rural farmers.

⇒ **Sector advisory has** not only helped the public to understand the implications of weather information but also cross-ministerial coordination has improved. The national workshops also helped to bring diverse actors together to discuss the practical application of climate science in a pro-active way.

⇒ **Climate change vulnerability and capacity assessments** at district and community levels should be the entry point for development programming.

⇒ **Strategic partnerships** are prerequisites to addressing climate change. For example Meteorology Department cannot work in isolation of others.

⇒ **The accessibility issue** of weather forecast requires diverse dissemination channels including high technology like mobile phones.

⇒ **Increased awareness on climate change** which should be promoted to instil the understanding of doing things differently.

⇒ **Gender analysis** regarding accessing and utilising information must be an integral part of programming. Women do not have access and control on most communication channels like radios and mobile phones.

⇒ **Traditional knowledge** and forecasting must be recognised and carefully integrated with the science.

Men participating in the impact assessment of the seasonal forecast in Kabale district, Uganda

ACCRA
AFRICA CLIMATE CHANGE RESILIENCE ALLIANCE

ACCRA in Uganda is a consortium made up of Care International, Oxfam, Save the Children, and is led by World Vision and key government actors including the Office of the Prime Minister (Department of Disaster Preparedness and Management - OPM), the Ministry of Water and Environment (MoWE) (Department of Meteorology and the Climate Change Unit), the Uganda Local Government Authority (ULGA), the Parliamentary Forum on Climate Change, and the Climate Change Action Network (CAN-U). Internationally, ACCRA works on climate change adaptation and disaster risk reduction across Ethiopia, Mozambique and Uganda.

For more information, contact:

Michael Nkalubo, The Commissioner
Department of Meteorology
Floor 10, Postel Building, Clement Hill Road
P. O. Box 7025, Kampala

Mobile: +256-772-453617

CDKN Climate & Development Knowledge Network

DFID Department for International Development

This document is an output from a project funded by the UK Department for International Development (DFID) for the benefit of developing countries. However, the views expressed and information contained in it are not necessarily those of or endorsed by DFID or the members of the Climate and Development Knowledge Network, which can accept no responsibility or liability for such views, completeness or accuracy of the information or for any reliance placed on them.