

# Improving the Impact of Climate Information Services in Kenya's Arid and Semi-Arid Lands

Climate variability and change are affecting millions of poor people in Kenya, particularly in arid and semi-arid lands. Significant investments are being made in developing Climate Information Services (CIS) which are tailored to the needs of pastoralists and agro-pastoralists and aim to help them adapt to the impact of climate change in these regions. Recent research has found that a new category of ultra-poor are falling out of dominant pastoralist and agro-pastoralist livelihoods and they are unable to benefit from CIS. To improve the impact of CIS, Kenya's county governments should put more focus on: (a) adopting an equity lens for the integration of CIS in county planning processes, so as to better reach those outside dominant livelihoods types, and (b) improving the understanding of constraints and enabling conditions for the poor in accessing and using CIS within both mainstream and alternative livelihoods systems.

## Climate Information Services for highly dynamic arid and semi-arid landscapes

Climate variability and change are affecting millions of poor people in Kenya. There is increasing international focus on Climate Information Services (CIS) as a key mechanism to help adaptation to climate change. CIS is used here to describe scientific weather and climate forecasts at lead times from daily to seasonal forecasts and climate projections decades ahead. The importance of CIS has been noted by the Kenyan government as part of its National Climate Change Action Plan 2013–17 and the National Adaptation Plan, where strengthening early warning systems and Climate Information Services through improving CIS provider networks and enhancing integration of local/indigenous knowledge into early warning systems is a priority.

Climate information is particularly important in Kenya's arid and semi-arid lands (ASALs) because of the varied and dynamic environment people in these areas live with, coupled with

their high climate vulnerability. For example, the droughts in Kenya over 2014–17 have had wide-reaching negative effects in the ASALs, raising food insecurity and malnutrition levels significantly. Rainfall changes day by day, from year to year, and over little more than kilometres. Beyond these environmental uncertainties, changes in social, economic and political factors, such as the spread of religious ideologies or government decentralisation and devolution, also act to both enable and constrain people's livelihoods based on pastoralism and agro-pastoralism.

Navigating this highly changeable landscape requires more than just access to information, however. Equally important is the ability to use the information, and to learn as new and existing knowledge is used over time to adapt to ongoing uncertainty. A well-developed CIS for this context has the potential to facilitate learning of decision makers at multiple levels as they identify livelihood opportunities under favourable conditions and reduce potential climate-related hazards.

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One key finding from recent research conducted in the ASAL regions of Isiolo and Kitui found that, when aiming to reach the most vulnerable, equity in the way climate information is developed, delivered and used is particularly important. The research uncovered the challenges that the poorest pastoralist and agro-pastoralist households face in accessing and using climate information to sustain and enhance their livelihood opportunities. The ability to use and learn from climate information has significant social dimensions through the development and imposition of societal norms and traditions, and through shared decisions around the public goods of pasture and water resources. Importantly, the position of people in society and the amount of assets and information they have access to, also influence their ability to act upon CIS and navigate uncertainty.

### Case study 1 Access to and use of climate information among the poor in Isiolo

For the Borana in Isiolo County, pastoralism remains important not simply as a livelihood strategy, but as an identity that links them to the land and shapes their social interactions. The ability to benefit from CIS is therefore closely linked to people's involvement with pastoralism. Over recent years, a combination of recurrent and prolonged droughts, occurring within a changing social and economic context for pastoralists (such as rangeland fragmentation, sedentarisation and commercialisation of livestock) have all but wiped away any productive assets of the poorest groups, driving them deeper into poverty. Unlike households defined by communities as wealthier (*ufurabula* and *dures*) that can use their resource base to buffer shocks and bounce back after disasters, the poorest are left to survive on external relief and support. Traditional social protection mechanisms, which in the past saw wealthy households with large herds donate livestock to support poor households, have weakened and are no longer able to sustain the poor.

Because of these changes, a growing population of poor in rural Isiolo are failing to meet their daily needs through the dominant pastoralist livelihood system. Instead, they increasingly rely on alternative strategies such as charcoal burning, firewood collection and working as labourers for wealthier households. In some cases, they are seeking

alternative income-generating activities through self-help groups that allow them to pool resources and share risks across multiple households. In these cases, CIS could be of considerable help in informing collective decisions and investments.

Through analysis of social interactions in formal settings such as community meetings, and informal settings of different household types in Isiolo, the study shows how social differences directly determine access to and use of CIS. Wealthier households have links to a number of government agencies, including the Kenya Meteorological Department, through personal contact with extension agents who provide CIS. They also have access to seasonal and monthly forecasts through the internet and media on their mobile phones. Through traditional and now evolved collective decision-making processes, pastoralists agree on the management of pasture and water to maximise productivity on the rangeland. These processes are central to the pastoralist way of life and collective management of natural resources, and importantly, remain the only formally acknowledged space for CIS to support decision-making.

By contrast, the ultra-poor are not part of these collective processes, because they are not directly engaged in pastoralism. Their interactions are with those who provide them with daily subsistence, such as business owners and wealthy households who might employ them to do odd jobs. These are, therefore, also their sources of information, which could potentially include climate information. The research shows, however, that the ultra-poor are currently not able to make use of CIS to improve their livelihoods, because it is focused only on pastoralist decision-making.

### Case study 2 Access to and use of climate information among poor farmers in Kitui

In Kitui, most people depend on agro-pastoralist and farming livelihoods. Much effort has been devoted to the development of seasonal rainfall forecasts, to help farmers in the county make better decisions on what to grow under different seasonal climatic conditions. This has resulted in an extensive mobile delivery network for climate information, such that farmers working with the Ministry of Agriculture and in a formalised

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group have access to daily and monthly forecasts as well as related agro-advisory services geared to help them make informed decisions on crops and livestock.

Analysis of CIS and social interactions in Kitui showed similarities with the situation in Isiolo, but with some nuances. Like in Isiolo, wealthier households in Kitui are connected to external actors, including government and value chain actors (such as agricultural input suppliers and motor vehicle dealers) and have good access to agro-advisory services. Poorer households, on the other hand, were found to be less connected to outside actors but linked to those who provide direct support to them, such as NGOs and churches. In some communities, NGOs have supported development of community-based organisations (CBOs) as an approach to extension service delivery. These CBOs are formed of self-help groups that come together and select representatives to constitute the CBO. This structure, together with the NGO links to the Ministry of Agriculture and Kenya Meteorological Department, acts as a vehicle for climate information to be delivered to those organised in self-help groups.

There is, however, a group of ultra-poor who are not organised and working in self-help groups. If someone has less than three acres of land, they are unable to sustain themselves from their land alone. They therefore rely largely on casual labour offered by wealthier households for income, which in turn means that during the planting season they are occupied on other people's land and unable to make the most of their own. Alternatively, they depend on exploitation of natural resources like charcoal burning, and relief food and support as their safety net.

Yet even for those who do have access to forecasts, questions remain about how useful they are, particularly for the poorest farmers. These questions arise due to the inherently uncertain nature of forecasts and the uncertainty in how forecasts relate to eventual yields (see Box 1).

Research shows that whether farmers choose to grow a crop most suited to the conditions with highest probability, or grow crops most suited to each of the different conditions they continue to risk some crop failure. This uncertainty necessitates users to think about trade-offs between different options and the

## Box 1: Are seasonal forecasts useful?

While seasonal forecasts have some skill in predicting total rainfall they tell us little about how the rain will be distributed within the season. Model simulations of maize using different rainfall distributions based on data from Kitui, showed that without this information farmers gain little benefit in knowing that the upcoming season's rainfall will be below normal or normal. While yields for above normal rainfall are higher they are spread over a large range and so may still present too risky an option for poor farmers. Applying the same method to pigeon pea shows even less difference in the range of yields under the different seasonal totals.

risks they are willing and able to take. A poor farmer with very little land, little surplus to fall back on and a need to feed their family that season, might take a different strategy to a wealthy farmer who might be focused on gain over the long run. What matters for the poorest farmers, therefore, is not just having access to the forecast, but being able to use it and learn from it over time.

### What does this mean for support to CIS at county levels?

As Kenya's counties endeavour to meet the legal requirements of mainstreaming climate change, CIS is one important component that needs to be integrated into the County Integrated Development Plans (CIDPs). The Climate Change Act 2016 provides the legal framework on which climate activities will be anchored and mainstreamed at national, sectoral and county levels. It defines mainstreaming as 'the integration of climate change actions into decision-making and implementation of functions by the sector ministries, state corporations and county governments'. It creates the Climate Change Council chaired by the president that will provide strategic directions on climate change activities and the Climate Change Directorate that will provide technical support and coordinate climate change activities across government and all non-state actors.

The Climate Change Directorate in collaboration with the Ministry of Devolution and Planning developed climate change mainstreaming guidelines specifically targeting the development of Medium Term Plan III (MTP) (2018–22) at the national level and the CIDPs (2018–22) at the county level.

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The guidelines advocate for screening projects proposed for inclusion in the MTP/CIDP using a 'climate lens' using climate risk assessment information. This creates an opportunity for CIS to inform choice of projects.

The guidelines are currently being utilised by sector working groups and county governments in preparing their development strategies that are nearing

completion and expected to be launched by the new (national and 47 county) governments in early 2018 to guide development at the two levels over the next five years. Enhancing the access to and use of climate information within these mainstreaming efforts, however, faces challenges linked with resourcing full CIS plans at county level and minimal capacity of technical officers, especially at the county level.

## Policy recommendations

The Government of Kenya, in its Vision 2030 Development Strategy for Northern Kenya and other Arid Lands, has already acknowledged that the highest rates of poverty are often observed among those who are no longer directly involved in pastoralism, particularly those without livestock. As the research reported on here has shown, in ASALs, developing CIS to reach the poorest requires special attention both to what information is needed and how to build access to those that are outside mainstream pastoralist and agro-pastoralist livelihoods.

Improving the impact of CIS at county level will require more focus on:

**1. First, adopting an equity lens** within the development and delivery of CIS at county level, differentiating it by detailed livelihood status and poverty levels, so as to not just focus on the dominant livelihoods types alone (such as pastoralism), but to acknowledge the difference within communities linked to access to assets and information.

It will be important to factor in increased resourcing of CIS in line with the Kenya Climate Change Act 2016, which mandates the government to mainstream climate change into medium term/sectoral and county development planning processes.

**2. Second, understanding the constraints and enabling conditions for the poor** in accessing and using CIS within both mainstream and alternative livelihoods systems.

Whilst the focus of much of CIS provision has traditionally been on alerting users of potential drought and flood conditions, for poorer farmers in ASALs the emphasis might need to shift towards understanding how to make the most of beneficial climate conditions to maximise opportunities while safely managing risk. This would benefit from closer collaboration with the Kenya Meteorological Department to lead in developing tailor-made climate information products for planning decision makers and other users at the county, sub-county and ward levels, and to improve feedback mechanisms between users of information and development of CIS to improve relevance, access and sustainability of the products.

## Further reading

Visman, E. (2016) *The County Climate Information Services (CIS) Plan. Developing Decentralised, User-relevant Climate Information*, Nairobi: Ada Consortium

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## Credits

This *IDS Policy Briefing* was written by **Marina Apgar, Dominic Kniveton, Lars Otto Naess, Victor Orindi, Nicholas Abuya** and **Mumina Bonaya** and edited by **Emilie Wilson**.

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