

# Briefing note

## Proposal for the development of forecasts for small-scale farmers in Western Kenya

### Introduction

The purpose of the Western Kenya project is to decentralise climate information services for decision making in this region. Output two of the project is to develop and roll out communications channels identified for each county. A proposal has been produced by Robert Powell, Communications Consultant, for the development of seasonal, monthly and weekly weather forecasts for small-scale farmers in Western Kenya. This briefing note provides an overview of the key points within the report.

The full report can be viewed [here](#).

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## Summary

Small-scale farmers constitute the majority of the population of Western Kenya. Their livelihoods are highly dependent on the weather. This proposal seeks to develop a series of downscaled weather forecasts that are already being produced and disseminated by many of the County Directors of Meteorology (CDMs) in Western Kenya. It also aims to encourage the dissemination of these forecasts to small-scale farmers in a timely fashion through local radio stations and SMS messages sent to community representatives. The information needs of other stakeholder groups which have regular and easy access to the internet are also addressed in the report. However, its primary focus is the production of needs-based and demand-led weather forecasts for small-scale farmers.

## User engagement

Small-scale farmers in Trans-Nzoia , Kakamega, Kisumu and Siaya counties were consulted about what kind of weather forecast information they needed through a series of focus groups held in March and April 2016. Overwhelmingly, the farmers asked for two types of forecast to be delivered to them in timely manner.

- A reliable and locally accurate **seasonal forecast** to be delivered **at least three weeks before the start of each rainy season.**
- A regular and locally accurate **weekly forecast** to help them with day-to-day decision making. This weekly forecast should say where and when rain was expected and how much rain was expected to fall on each day of the forecast period. It should also flag up any weather-related hazards expected, such as high winds, thunderstorms, hail storms and extremes of temperature.

Farmers said they would prefer to receive the seasonal and weekly forecasts by SMS and by radio. Information transmitted by radio should preferably be broadcast during the peak listening period between 21.00 and 21.30 at night. Some - but not all – farmers also listen to radio in the early morning between 05.00 and 07.00.

The focus group participants appreciated that it would be difficult and very costly to send forecasts by SMS to individual farmers.

They identified the following categories of people as ideal community intermediaries who could receive the forecasts by SMS and pass it on to their neighbours by word of mouth: leaders of community-based organisations (CBOs), leaders of farmers'

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groups, NGO outreach workers involved in rural development, and priests and pastors.

The CDMs of nine counties in Western Kenya unanimously recommended at a workshop in April 2016 that an improved **monthly forecast** should also be communicated regularly to farmers as part of the WISER Western initiative. They pointed out that the monthly forecasts would provide useful updates on the three seasonal forecasts that are currently produced.

## Seasonal forecast timing

The seasonal forecasts cover the following periods:

- March, April, May “long” rainy season
- June, July, August rainy season (selected counties in Western Kenya only)
- October, November, December “short” rainy season

Downscaled seasonal forecasts, accompanied by relevant advice from the Ministry of Agriculture, must be disseminated **at least three weeks before the onset of each rainy season** in order to influence the farmers’ choice of crop and seed variety and in order to influence their time of planting. To achieve this goal, KMD will have to publish its national seasonal forecast earlier than it does at present. This is technically possible, but political will is required to ensure that publication does not get held up by procedural issues.

CDMs will also have to consistently produce and publish their own downscaled county forecasts as soon as possible after the KMD national seasonal forecast has been made available to them. The CDMs should not wait for the county Participatory Scenario Planning (PSP) meeting to take place before issuing their downscaled seasonal forecast, with advice to farmers published alongside it.

KMD headquarters should systematically publish the first version of the national seasonal forecast **before** the Inter-governmental Authority on Development (IGAD) Climate Outlook Forum (COF) is held to agree a common seasonal forecast for the whole of East Africa.

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## Forecasts

The report makes the following recommendations relating to the forecasts:

- CDMs should adopt **standard templates** for the seasonal, monthly and weekly forecasts. These templates would simplify the presentation of the weather forecast, strip out information that is not essential for the end user and make the forecast easier for rural communities to understand.
- CDMs should publish **timely and practical advice to local farmers** alongside each weekly and seasonal forecast. This advice should be provided by a panel of technical experts from the local offices of the Ministry of Agriculture and the local KALRO research station (if there is one). The advice given by these experts should be based on the weather conditions predicted.
- KMD should produce three different versions of each downscaled forecast in order to adapt it for communication via the following channels:
  - **The internet** - email, WhatsApp messages and posts on the KMD website and the CDM's Facebook page
  - **Radio stations** that target local and regional audiences
  - **SMS messages** disseminated to community intermediaries by partner organisations

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## Weekly SMS forecasts

SMS messages will conform to a standard structure. The information for each day of the forecast will always be given in the same order. Standard terms with a fixed definition will be used to describe weather conditions. These characteristics will make interpretation of the forecast simple, clear and straightforward. Explanation sheets for the recipients of SMS forecasts will be prepared for each county. These sheets will help the SMS recipients to interpret the content of each message accurately.

The sheets will contain:

- A map showing all the climatic zones of the county and the code numbers used to refer to them in the SMS forecast, and an alphabetic list of all standard abbreviations used in SMS forecasts.
- An alphabetic list of key terms used to describe the weather in SMS forecasts
- A brief explanation of how the weekly and seasonal forecasts are structured.

The SMS forecasts will only make full sense to individuals who have access to an explanation sheet or who have been trained to interpret correctly the standard abbreviations used in the messages.

Bullet points of advice to farmers would also accompany the weekly forecasts and would be sent as separate SMS messages immediately after the forecast. The advice messages will use free text rather than a rigidly structured format. They will make much more limited use of standard abbreviations. The information they contain would be sourced to the Ministry of Agriculture, not KMD.

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## Sample weekly SMS forecast

**Trans-Nzoia weekly Apr 19-25. Wed, 1,2, li rain PM few, 3,4, mod rain PM many, Thu 1,2,3,4, he rain AM/PM most, Fri 3,4, li rain PM many - KMD**

(142 characters)

Expanded into normal speech, this means:

*Here is the Trans-Nzoia County weekly forecast for the period April 19<sup>th</sup> to 25<sup>th</sup>. Light rain is likely to fall in a few places within climatic zones 1 and 2 on Wednesday afternoon. But moderate rainfall is likely in many places in climatic zones 3 and 4. Heavy rain is expected across the whole county (climatic zones 1, 2, 3 and 4) throughout the day on Thursday. Most places will receive some rainfall. On Friday, light rain is expected in many parts of climatic zones 3 and 4 during the afternoon. Kenya Meteorological Department*

Here is an example of what an advice message might look like:

**Trans-Nzoia weekly advice Apr 19-25. 1,2,3,4, Top dress young maize plants with DAP after the heavy rain forecast for Thu - MinAgric**

(132 characters with spaces)

Expanded into normal speech, this means:

*Advice to farmers in Trans-Nzoia County for the period April 19<sup>th</sup> to 25<sup>th</sup>. Top dress young maize plants with diammonium phosphate (DAP) fertilizer after the heavy rain forecast for all areas of the county on Thursday. Ministry of Agriculture*

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## Sample weekly radio forecast

**Weekly weather forecast for the highland area of Western Kenya for the period  
February 23 to 29 2016**



### Kenya Meteorological Department

Here is the weekly weather forecast for highland area of Western Kenya for the period Tuesday February 23 to Monday February 29 2016.

It covers the counties of Vihiga, Kakamega Bungoma, Busia and Trans Nzoia

The forecast is followed by some messages of advice to farmers from the Ministry of Agriculture.

The general outlook is for dry weather in most parts.

But heavy clouds will build up towards the end of the week.

These could lead to some light showers of rain on Saturday and Sunday.

Today (Tuesday) and Wednesday will be dry and sunny almost everywhere.

However, cool night time temperatures of around 14 degrees in areas above 1,500 metres will lead to heavy dew on Wednesday and Thursday mornings,

Thursday and Friday will start off sunny, but cloud cover will develop during the afternoon.

However, most areas will remain dry.

Saturday could see the clouds become thick and heavy enough to give some scattered showers of rain in the afternoon, particularly in Bungoma and Kakamega counties.

But Busia County, the central plateau of Trans-Nzoia and the southern parts of Vihiga County are likely to remain dry,

Sunday is likely to bring some more afternoon rain showers to a few lucky villages.

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Bungoma and Kakamega counties and the slopes of Mount Elgon in Trans-Nzoia are likely to see the best of any rainfall.

But Monday will see a return to sunny dry weather almost everywhere with largely clear skies and rising daytime temperatures.

So, to sum up the week ahead:

Expect cloudy conditions to develop in most places from Thursday onwards.

Some light and very localized showers of rain could fall almost anywhere on Saturday and Sunday.

But don't be fooled into thinking that the rainy season is already starting. Next Monday will see a return to clear skies and dry weather everywhere.

Kenya Meteorological Department will issue its national forecast for the March, April May rainy season on Monday February 22.

Here are some messages of advice to farmers issued by the Ministry of Agriculture in the light of the weekly forecast:

Start ploughing your land in preparation for maize planting, if you have not already done so.

Delay seed purchases until Kenya Meteorological Department's seasonal forecast gives an indication of expected rainfall during the coming rainy season. This forecast will be published next Monday.

That was the weekly weather forecast for the highland region of Western Kenya for the next seven days, accompanied by advice to farmers from the Ministry of Agriculture.

For further information, please contact:

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## Sample seasonal SMS forecast

**Siaya seasonal,1,2, above normal rain.Onset Oct 8-15. Cessation Dec 15-20.Irregular distribution. Most rain Nov. Least rain early Dec-KMD**

(137 characters)

Expanded into normal speech, this means:

*Siaya seasonal forecast for climatic zones 1 and 2. Normal to above normal rainfall is expected. The first significant rainfall is likely to occur between October 8 and 15. The distribution of rainfall throughout the season is expected to be irregular. Most rainfall is likely to occur in November. The period with least rainfall is likely to be early December.*

*Kenya Meteorological Department*

Here is an example of what an advisory message linked to this forecast might look like:

**Siaya seasonal advice 1,2. Consider planting high-yielding maize hybrids such as KH600-23A, H614D and KH600-16A-MinAgric**

(120 characters)

Note that the advisory message is specifically linked to climatic zones 1 and 2, the same zones referred to in the forecast. The maize varieties recommended for zones 3 and 4 of Siaya County might well be different if the seasonal forecast for these areas is less favourable.

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## Sample seasonal radio forecast

**Seasonal weather forecast for the highland area of Western Kenya area of Western Kenya October, November, December 2016 rainy season**



### Kenya Meteorological Department

**Here is the seasonal weather forecast for the highland area of Western Kenya October, November, December rainy season.**

**This forecast covers the counties of Vihiga, Kakamaga, Bungoma, Busia and Trans-Nzoia.**

**It is followed by some messages of advice to farmers from the Ministry of Agriculture.**

Kenya Meteorological Department expects the rains to be quite good in most of the region, but they may start later than usual.

The heaviest rainfall is expected Bungoma and Kakamega counties.

However, a few areas, including Lugari, southern parts of Busia County, are expected to receive slightly less rain than usual.

Kenya Meteorological Department expects the volume of rain in the coming rainy season to be higher than normal in most places.

This means that rainfall is likely to be higher than the average received over the last 30 years in most of the region.

However, in Lugari and the south of Busia County it may be slightly lower.

The rains are expected to arrive between October 15 and 20.

Most areas of Vihiga, Kakamega and Bungoma counties can expect between 700 mm and 800 mm of rain between October and the end of December.

Trans-Nzoia is likely to receive between 500 and 550 mm.

But Lugari and the south of Busia County may only get 450 to 500 mm

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The rains are likely to end after Christmas in the last week of December.

The heaviest rainfall is expected in late November and early December.

Dry spells in most places are unlikely to last more than eight days.

Kenya Meteorological Department expects the rains to be quite good in most of the region, but they may start later than usual.

The heaviest rainfall is expected Bungoma and Kakamega counties.

However, a few areas, including Lugari, southern parts of Busia County, are expected to receive slightly less rain than usual.

In summary, Kenya Meteorological Department expects the rains to be quite good in most of the highland region of Western Kenya, but they may start later than usual.

The heaviest rainfall is expected Bungoma and Kakamega counties.

But a few areas, including Lugari, southern parts of Busia County, are expected to receive slightly less rain than usual.

Here are some messages of advice to farmers issued by the Ministry of Agriculture in the light of this forecast.

Farmers in most areas should seriously consider planting high-yielding maize hybrids to take advantage of the high rainfall expected.

But farmers in Lugari and the south of Busia County, where lower than usual rainfall is expected, should consider choosing drought tolerant varieties of maize seed instead.

Farmers should plan to plant maize between October 10 and 15, a few days before the rains are expected to start.

**That was the seasonal weather forecast for the highland area of Western Kenya.**

**It was accompanied by advice to farmers from the Ministry of Agriculture.**

**For further advice about on how to prepare your farm for the coming rainy season, please contact the nearest Ministry of Agriculture extension officer.**

Date of issue: August 31<sup>st</sup> 2016

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