UNIVERSITY OF NAIROBI
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OPTIONS FOR IMPROVING THE COMMUNICATION OF SEASONAL RAINFALL FORECASTS TO SMALLHOLDER FARMERS – THE CASE OF KENYA*

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Based on: Shah P., Ifejika Speranza C., Opiyo R. and Ndiwa J. (2012)

Outline

- Introduction - seasonal rainfall forecasts in Kenya
- Challenges in communicating seasonal forecasts to smallholder farmers
- Options for the effective communication of seasonal forecasts to smallholder farmers
- Conclusion

Results presented here are based on authors' studies in the Embu, Makueni and Laikipia districts (Counties) of Kenya and on a review of the literature.

Variable and Changing Rainfall

- Characteristic high rainfall variability in the ASALs
- Climate change => spectrum of changes in rainfall
- Uncertainties in climate change projections
- Likely increase in already high rainfall variability
- Shift in seasons
- Increased frequencies of extreme weather events - heavy rainfall, droughts
- Towards end of 21st century, increased total annual rainfall

Implications for Agriculture

- African & Kenyan agriculture – mainly smallholders
- Dependence on rainfall for agriculture
- Time-proven planting patterns and farming calendar ~ "matched" the onset, duration and end of the rainy seasons.
- Changing rainfall due to climate change, => mismatch of planting patterns and farming calendar to seasonal rainfall distributions
- Frequent crop losses

IMPACT OF DROUGHT IN NANYUKI

IMPACT OF FLOODS IN EMBU

Need for early warning information on seasonal rainfall

- Seasonal rainfall forecasts - one way of informing farmers of short-term weather dynamics, impending seasons of below- or above-normal rainfall and extreme rainfall events
- Crucial for the provision of early warning information and,
- **If used by farmers,** can enable them to adjust their planting seasons and farming calendar
- With changing climate, seasonal forecasts will become even more crucial

Seasonal Rainfall Forecasts in Kenya

The Kenya Meteorological Department (KMD) issues

- 4 day, 7 day, monthly, seasonal forecasts
- Seasonal forecasts probabilistic in nature – wet, average and dry conditions
- 2 rainfall forecasts per rainy seasons – March-May, October-December
- Forecasts issued to public in August and February – 1 month early

KMD's efforts to improve seasonal forecasts

- Recent technological developments have increased the accuracy and reliability of the seasonal forecasts issued by the KMD
- Early release of forecasts by KMD with a one-month lead-time

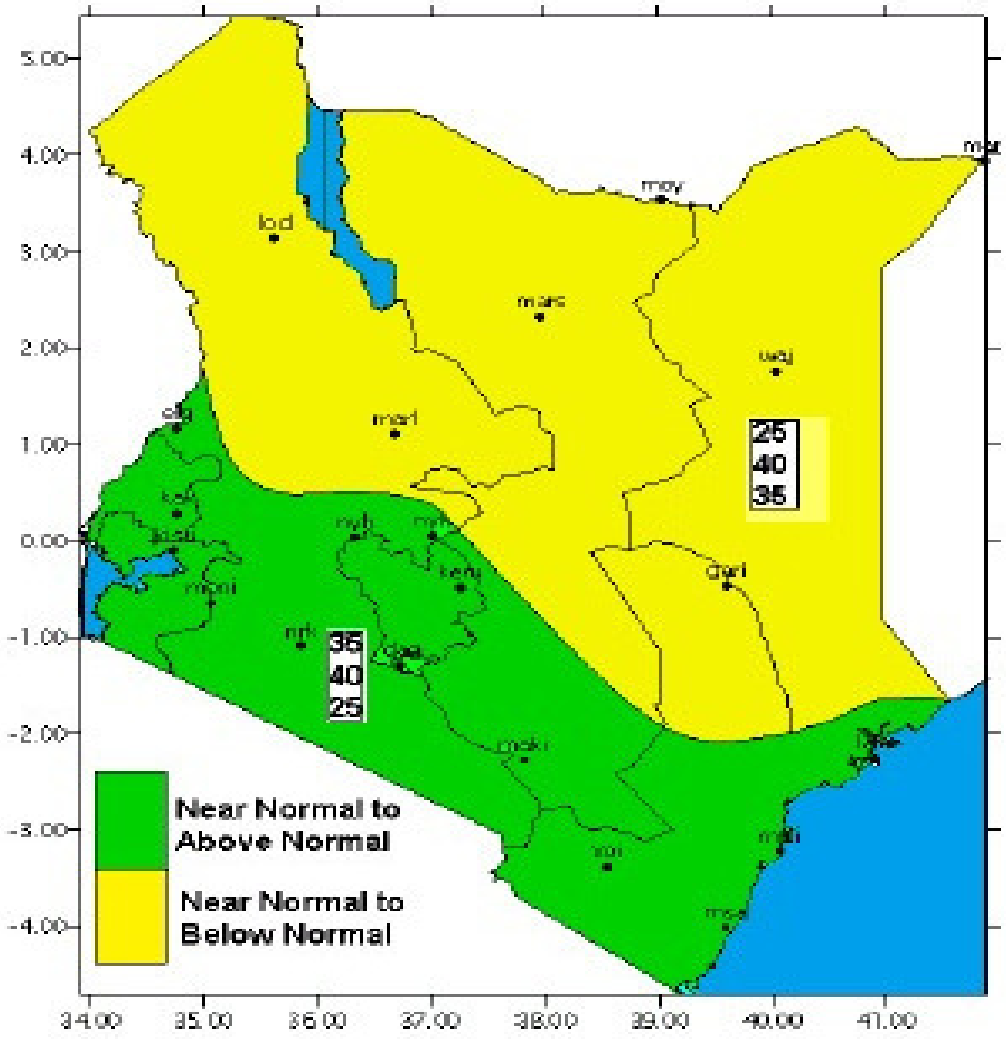
Limited use of seasonal rainfall forecasts

- Early warnings continue to be largely ignored in farm production strategies, resulting in avoidable farm losses.
- Why this limited use?
- How can seasonal forecasts be better communicated to smallholder farmers to enable them to use the information received to reduce adverse climatic impacts on their farm production?

Challenges to communicating seasonal forecasts to smallholder farmers in Kenya

COARSE-SCALE MAP OF SEASONAL RAINFALL FORECASTS IN KENYA

- Forecasts - coarse scale not reflecting localised patterns of rainfall
- Technical terms used



Source: The KMD's (2004) "review of the weather in June-July-August 2004 season and the outlook for the October-November-December 2004 season"

Distorted interpretation of forecasts by the media

- Incorrect interpretation of forecast by media from KMD– The Daily Nation of 9 September 2004, for example, reported "**hopes of alleviating hunger dashed as weather experts predict doom**", although "*a worsening food crisis*" had not been the message communicated by the KMD, but "near-normal to above-normal" and "near-normal to below-normal"rainfall

Perceived "incorrectness" of forecasts

- In December 2009, wheat farmers of Narok District (County) threatened to sue the KMD for predicting that the El Niño rains would start in late September.
- No rains till end of December 2009 leading to harvest losses.

Poor timing of broadcasts

- Lack of information on weather forecasts - farmers on field when the information is broadcast on radio
- Farmers request information be broadcast after six o'clock (pm)

Farmers' lack of confidence in seasonal forecasts

- 3 days rain in February 2012, KMD advised farmers not to plant as rain was temporary
- In the past, forecasts of KMD wrong- so farmers have no trust - Farmers in the Embu planted – result – crop failure
- Lack of information on weather forecasts- farmers on field when the information comes in radio

Options for the effective communication of seasonal forecasts to smallholder farmers

Understanding the roles and needs of the key actors

- Kenya Meteorology Department (KMD)
- Ministry of Agriculture (MOA)
- Ministry of Livestock Development (MLD)
- Smallholder farmers
- Ministry of Information and Communication (MIC)
- Media

Options - Ministry of Agriculture (MOA)/Ministry of Livestock Development (MLD)/Kenya Meteorology Department (KMD)

- KMD to downscale seasonal forecasts to homogeneous rainfall zones/weather station level - e.g. Sakai research project in Makueni
- MOA and MLD to collaborate in guiding KMD on communications (to farmers and pastoralists) – demand-driven forecasts (currently piloted)

Options – Improving communication of seasonal forecasts to farmers

- MOA/MLD to organise regular workshops with District Agricultural Officers and local meteorological officers on seasonal forecasts
- Institutionalising pre-season forecast workshops with farmers - opportunity for farmers for direct interaction with experts
- Exploring the use of telephone short message services (SMS) to communicate weather forecasts to farmers

Options - Ensuring accurate reporting of forecasts in the media

- KMD to explore options for improving ongoing work with media, radio (local radios), internet
- Appropriate timings for media to inform farmers
- MOA/MLD/KMD to engage more with the Ministry of Information and Communication
- KMD to train media on understanding forecasts for correct transmission

Conclusions

- Need to commit additional long-term funding to secure these measures - the government of Kenya and its development partners

- **However, if the communication of forecasts is not improved, most farmers will continue to ignore them and the resources invested in their improvement will have been wasted.**

Thank you for your attention

References

- Shah P., Ifejika Speranza C., Opiyo R. and Ndiwa J. (2012): Options for improving the communication of seasonal rainfall forecasts to smallholder farmers – the case of Kenya. Bonn: German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE) (Briefing Paper 17/2012).