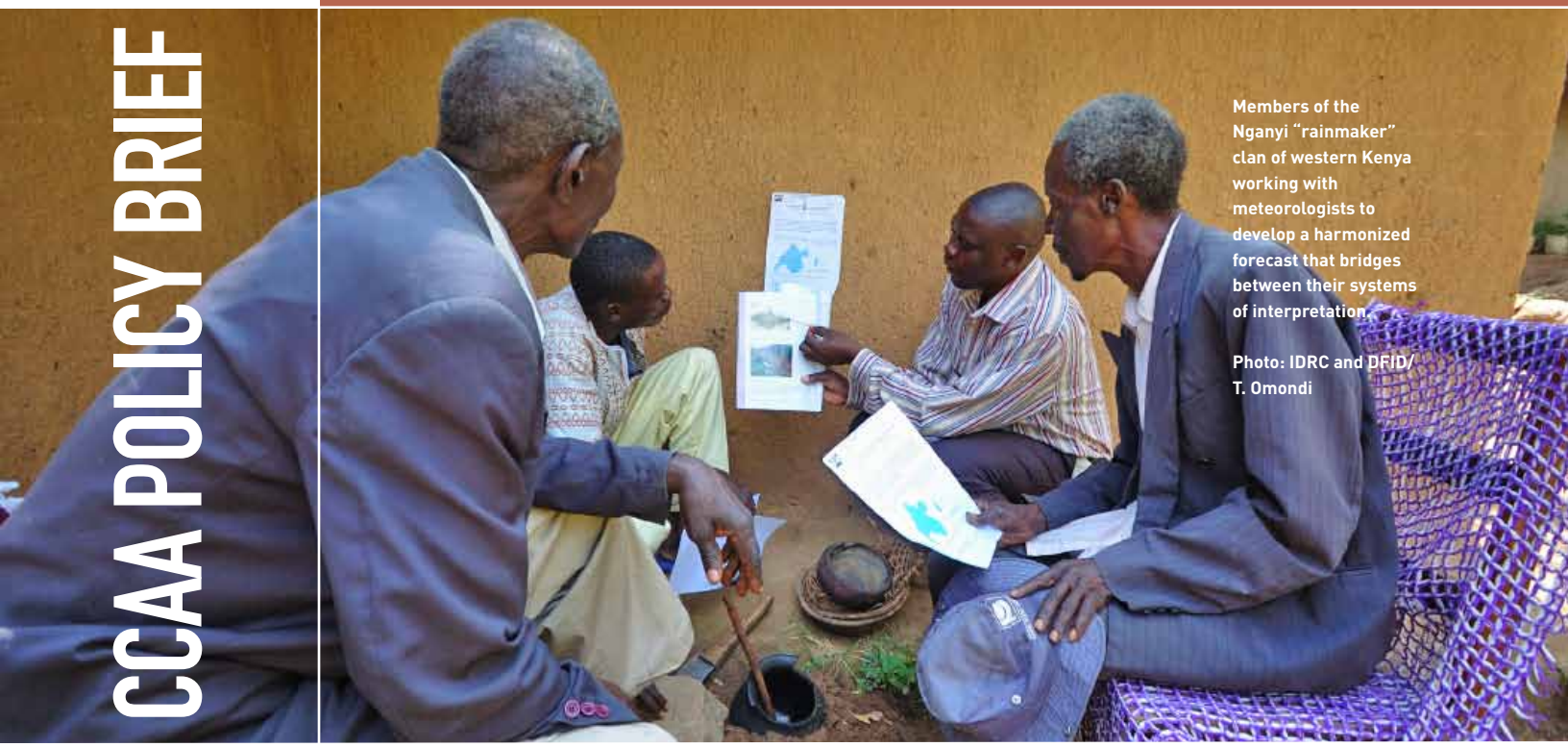
Adaptation

CCAA POLICY BRIEF



Members of the Nganyi "rainmaker" clan of western Kenya working with meteorologists to develop a harmonized forecast that bridges between their systems of interpretation.

Photo: IDRC and DFID/ T. Omondi

LESSONS FROM RESEARCH

1. **Farmers are better able to adapt to climate change and variability when they engage with and apply climate information.**
2. **Integrating indigenous knowledge forecasts and seasonal climate forecasts has worked well in many instances but could benefit from further analysis and policy support.**
3. **Seasonal climate forecast information is mostly supply driven at the national level and does not reflect an understanding of user needs.**
4. **Multi-stakeholder platforms that gather, interpret and disseminate climate information can strengthen understanding and uptake of climate information among farmers and pastoralists.**

Tailoring climate information to user needs

Since 2007, the Climate Change Adaptation in Africa (CCAA) program, jointly funded by Canada's International Development Research Centre (IDRC) and the United Kingdom Department for International Development (DFID), has supported 46 action research and capacity development projects in 33 African countries. A number of these have investigated how seasonal climate forecasts might be better integrated into agricultural and pastoral decision making to strengthen livelihoods and food security.

To support the synthesis of related research findings and lessons, in March 2010, CCAA hosted a learning forum on improving access to and use of seasonal forecasts by rural producers. The forum aimed: i) to identify and assess lessons relevant for institutions charged with producing and disseminating seasonal climate forecasts; and ii)to facilitate learning and exchange among participants. Representatives of eight CCAA-supported participatory action research (PAR) projects were joined by climate information experts based in Africa, the United States, and the United Kingdom. The insights that emerged from this learning forum can be found in the CCAA Learning Paper, "Integrating meteorological and indigenous knowledge-based seasonal climate forecasts for the agricultural sector" (G. Ziervogel and A. Opere, ed. IDRC, 2010).

IDRC CRDI

DFID Department for International Development

This brief summarizes lessons from the forum that are of particular relevance to decision makers concerned with the production and use of seasonal climate forecasts in the agricultural sector.

Lesson 1: Farmers are better able to adapt to climate change and variability when they engage with and apply climate information.

The challenge of an increasingly variable climate is of particular concern to small scale farmers and pastoralists in sub-Saharan Africa. Information about the expected onset and cessation of the rainy season, and the likely intensity of expected rains or dry spells, can help them choose strategies to maximize yields and protect livestock. This is particularly important in the context of climate change, as reducing vulnerability to existing risks helps farmers prepare for future risks.

CCAA projects saw evidence of the use of climate information in the reapplication and scaling up of practices that were taught through a variety of multi-stakeholder learning platforms. These provided climate information from local and scientific sources, along with advisories on how to apply this information in farming decisions. Researchers saw an increase in demand for early dissemination of the seasonal climate forecast and the training modules due to perceived increases in yield by farmers who took part in training (although this increase in demand has not yet been thoroughly measured).

Farmers who see value in climate information pass it on. By sharing experiences and successful farming practices, their capacity to use climate information is strengthened and collective understanding is built, supported by growing trust between different actors. Ownership of the process is promoted, which further appears to increase the use of climate information and overall adaptive capacity.

Recommendations:

- Develop partnerships with relevant institutions, NGOs and local communities to enhance capacity in the use of seasonal and indigenous forecasts to address climate change and enhance agricultural production. These partnerships should incorporate indigenous channels of dissemination, going beyond conventional channels such as radio, TV and extension workers.
- Share experiences of better decisions that result from using the forecasts to increase buy-in from a range of stakeholders.

Lesson 2: Integrating indigenous knowledge forecasts and seasonal climate forecasts has worked well in many instances but could benefit from further analysis and policy support.

While some CCAA projects focused explicitly on the use of indigenous knowledge forecasts (IKFs), in others, IK made its way into the research lens because its use is so pervasive among African farmers and pastoralists. For many, it is the only source of climate information they make use of in farm-level decision making.

Although IKFs are viewed with skepticism by mainstream science, research examining the development and use of these forecasts noted the value of their detailed reflection of local conditions, and their wide uptake because they are shared in languages and ways that are locally appropriate. In projects where IKFs and seasonal climate forecasts (SCFs) were harmonized, there was agreement on the expected climate scenarios in all cases, highlighting how the two types of knowledge could be complementary. By covering a different temporal and spatial scale, the IKFs brought a wealth of detail beyond the SCFs' probabilistic information about total rainfall over a wide area.

Recommendations:

- Further document the use of IKF, and feedback from IKF users, to share lessons across communities, and explore the potential for scaling up the use of IK indicators. Monitoring these indicators to see whether they are linked to scientific parameters could help validate and potentially widen the application of these knowledge systems.
- Build trust with IK holders, in part through respect for their intellectual property rights and assurances that their knowledge will not be compromised.

Lesson 3: Seasonal climate forecast information is mostly supply driven at the national level and does not reflect an understanding of user needs.

Researchers observed that seasonal climate forecasts are often not delivered in time for farmers and pastoralists to make vital decisions for the growing season. Furthermore,

the scale of seasonal forecasts is not fine enough for farmers, who need very locally relevant information. Forecasts are too often shared by means not suited to the users' context, ignoring local languages, cultural norms and practices, and constraints on their ability to use or access the current information. Finally, farmers generally want forecasts interpreted, with advice on agricultural activities, rather than technical information about the probability of rainfall conditions relative to the long-term average.

Keziya Magawa, a farmer with Nazareti Womens' Group, tends maize in a field school in Chibelela, Tanzania.

Photo: IDRC/ F. Nzema

Recommendations:

- Involve representatives from meteorological agencies in a range of on-farm learning platforms, where they can learn more about what users need and better inform farmers on the uses and limitations of forecasts. Users will also have better means to communicate their preferences to met service providers. Decentralizing meteorological services could also support improved interaction and engagement with local communities.
- Support the development of agro-meteorology bulletins or other advisory products that suggest agricultural strategies best suited to the forecast. Partnerships with extension services or agricultural service providers can help provide this information, where met services lack agro-meteorological specialists.
- Disseminate seasonal forecasts as early as possible, to give farmers time to prepare. Researchers found that IKFs were timelier than SCFs, and gave more detail on seasonal onset.
- Invest in capacity for local meteorological stations and staff to enhance the detail and timeliness of climate forecasts and the extent of their coverage.

Lesson 4: Multi-stakeholder platforms that gather, interpret and disseminate climate information can strengthen understanding and uptake of climate information among farmers and pastoralists.

In a number of CCAA-supported projects, research teams brought together a wide range of stakeholders to integrate meteorological, agronomic, and indigenous knowledge and then develop locally-appropriate advice based on this information. They effectively created platforms for a diverse group of stakeholders to co-create new knowledge. Through such processes, stakeholders started to address a range of challenges in tailoring information to make it more accessible to users than national level seasonal forecasts alone.

These platforms strengthen communication between actors in the information chain who do not usually spend time together. By engaging with seasonal climate information through a collaborative process, users built confidence and capacity to understand and use climate data, and gain trust in other stakeholders involved. These platforms helped raise awareness among farmers, pastoralists, extension officers and others about both climate change and seasonal climate information, which in some instances increased their demand for climate information.

The full CCAA Learning Paper presents a number of examples where early engagement in the PAR projects helped policymakers see the value of participatory platforms and mechanisms for dissemination of climate information. In some cases, these policymakers helped to sustain activities and provide additional resources to help communities make more effective use of information and tools.

Recommendations:

- Use new or existing platforms to bring together meteorologists, extension officers, researchers, community leaders, indigenous knowledge providers, input providers, farmers and pastoralists. This may require new policies to encourage participation, while balancing the risk of creating expectations or dependency.
- Involve agricultural experts and decision makers, farm input suppliers, and extension workers in the process of developing and disseminating climate information to ensure that appropriate seed or crop varieties are distributed where they are needed and to help address sustainability issues.

In Benin, pre-alert committees such as the one shown here bring together national and local stakeholders to interpret data and develop agro-meteorological advisories useful to rural producers. Photo courtesy of IDID-ONG

CCAA projects that contributed knowledge to the learning forum

Project title	Lead institution
Strengthening the Capacity to Adapt to Climate Change in Rural Benin	Initiatives pour un développement intégré durable
Infoclim: Platform for Helping Vulnerable Communities Adapt to Climate Change (Senegal)	Centre de suivi écologique
Integrating Indigenous Knowledge in Climate Risk Management to Support Community Based Adaptation in Western Kenya	IGAD Climate Prediction and Applications Centre (ICPAC)
Managing Risk, Reducing Vulnerability and Enhancing Productivity under a Changing Climate in the Greater Horn of Africa	Sokoine University of Agriculture
Resilience and the African Smallholder: Enhancing the Capacity of Communities to Adapt to Climate Change in Seven African Countries	University of Zimbabwe
Building Capacity to Adapt to Climate Change in Zambia and Zimbabwe	Midlands State University
Strengthening Local Agricultural Innovation Systems in Tanzania and Malawi	Institute of Resource Assessment, University of Dar es Salaam
Enhancing Adaptation to Climate Change among Pastoralists in Northern Kenya	Practical Action