



IDRC / Thomas Omondi

2010–11 in brief

Message from CCAA's Advisory Board

It's my pleasure to introduce this annual report on the Climate Change Adaptation in Africa (CCAA) program. Launched in 2006, the program is now nearing completion after five years of intense effort in building Africa's scientific capacity to address climate change, and in supporting research and communications on adaptation.

One of the program's key contributions has been to facilitate the involvement of, and interaction among, researchers, decision-makers, producers' organizations, and communities in finding appropriate solutions to the negative impacts of climate change. To be effective, these solutions demand true synergy among local-level actors, working within a supportive overarching framework that sees political will translate into concrete strategies, action plans, and budgets.

As this report illustrates, the program has achieved concrete results, which should be widely shared and acted upon to reduce future uncertainty in this highly vulnerable continent. To this end, the program's funders and advisors have paid careful attention to devolving key activities to capable African organizations, to make sure the results of its efforts will endure. In its final year, the program is working closely with supported networks and research partners to ensure that lessons and findings are distilled and shared across the continent, and internationally, to reach those who must put adaptation knowledge into practice.

Mbareck Diop
Chair of the CCAA Advisory Board



CCAA Advisory Board members with staff and partners who took part in events at the board's 11th meeting, held in Dakar, Senegal. Board members included (left to right): Isabelle Proulx of IDRC, Program Leader Fatima Denton, Coleen Vogel (at rear), Alexander Alusa, Balgis Osman Elasha, Estherine Lisinge Fotabong, Chairman Mbareck Diop (at rear), Mohamed Senouci, DFID representative Izabella Koziell, and Jean Lebel of IDRC (at rear).
Photo: IDRC



Mbareck Diop, a specialist in environmental sustainability and a former technical advisor to the President of Senegal, has served on the CCAA Advisory Board since its launch in 2006. He has chaired the board since November 2008.
Photo: IDRC / Mary O'Neill



CCAA Program Leader Fatima Denton addresses the opening of AfricaAdapt Symposium 2011. *Photo courtesy of AfricaAdapt*

Executive summary

To achieve its overarching goal of building capacity for adaptation in Africa, the CCAA strategy weds participatory research, capacity strengthening, and knowledge sharing. We built this three-pronged approach recognizing that Africa has a wealth of wisdom on how to respond to climate variability and extremes. This knowledge, however, is fragmented by distance, language, institutional, and other barriers, and may be overwhelmed by the pace and severity of global warming.

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This report on our fifth year of programming highlights efforts within and beyond supported research projects to extend the reach of knowledge on climate change and adaptation across Africa. One key measure of our reach is the direct participation of thousands of African researchers, policymakers, and vulnerable community members in research activities. Another is the extent to which research teams have shared their research with potential users, through publications, presentations, and their involvement in scientific review processes, such as the Intergovernmental Panel on Climate

Change. Yet another is the CCAA program's support for knowledge sharing efforts, such as the AfricaAdapt network, web-based communications, media outreach, and innovative approaches to reach vulnerable communities.

On the theme of extending the reach of adaptation knowledge, you will find here

- Lessons learned from phase 1 of AfricaAdapt, in the section **Reflection: Making an adaptation network work for Africa**;
- Researchers' reflections on involving and informing the intended research users in this year's **Stories from the field**; and
- A poster entitled **Measuring our reach**, which illustrates in numbers and images the extent to which CCAA and supported projects are involving and informing Africans on climate change adaptation.

Tracking our progress

Each year, we report on both our **outputs** — the immediate results of our programming activities — and the **outcomes** that result from the research and capacity building projects we support. In gauging the difference our efforts have made, we look for progress in four key outcome areas:

1. Research institutions are better able to assess climate-related vulnerabilities and to evaluate and develop adaptation options.
2. At-risk groups, policymakers and researchers share learning and expertise on climate vulnerability and poverty.
3. The poor in rural and urban environments apply their experience of adaptation with the knowledge and technologies generated by research to implement improved and effective adaptation strategies.
4. Policy processes are informed by good quality science-based work on vulnerability and adaptation and by the experiences of the rural and urban poor.



Outputs

The **Strategies** section of this report presents the results of CCAA's activity this year in our three core activity areas — supporting research, education and training, and communications and networking — and our progress in devolution. As the program enters its final stages, our efforts have shifted from funding new research to seeing key activities devolve to capable African organizations, and seeing research results distilled and shared with users in various formats. This year, we approved second-stage funding for the African Climate Change Fellowships Program and the AfricaAdapt network, both now under African leadership. Meanwhile, 11 of our first funded projects closed this year.

Our capacity building efforts have evolved from an emphasis on training to helping partners synthesize and share the adaptation knowledge emerging from supported research. Following a first learning forum held last year, participants from 13 CCAA projects came together in October 2010 for a second forum that explored how adaptation initiatives can help reduce vulnerability and improve the livelihoods of the poor. Based on the first learning forum, we published a synthesis paper and policy brief that captured cross-cutting issues and findings from eight projects on improving seasonal forecasting for the African agricultural sector.

To further the integration of climate change adaptation perspectives into important African policy frameworks, we extended support to two African regional bodies: the Southern African Development Community and the Lake



CCAA research partners came together to explore the links between adaptation and poverty at our second Learning Forum, held in October 2010. Photo: IDRC/Nathalie Beaulieu

Victoria Basin Commission. The activities will help them develop a climate change strategy and action plan for their regions. Through a grant to the United Nations Environment Program, we are supporting the Climate Change and Policy Option chapters of the Third *Africa Environment Outlook* — a vital resource for Africa's environment ministers and other policymakers, practitioners, and scholars.

Senegal's Environment Minister opened a conference hosted by the leaders of the CCAA-funded Infoclim project — illustrating its policy reach.

We continued this year to support our partners' involvement in regional and international conferences and events to increase their networks, their visibility, and the reach of their findings. Among the key events this year was the 16th Conference of Parties to the United Nations Framework Convention on Climate Change, held in Cancun, Mexico, where CCAA staff and researchers took part in three main events. In July 2010, Senegal's Minister of State for Environment and Natural Protection presided over an international conference hosted by the Centre de Suivi Ecologique, leader of the CCAA-supported project Infoclim: Platform for helping vulnerable communities adapt to climate change. Among the 200 or so attendees, the conference welcomed members of Senegal's national climate change committee, local decision-makers from research sites in Thiès, and representatives of decentralized state services. The CCAA-supported AfricaAdapt network held its first continent-wide symposium in March 2011, bringing together researchers, activists, community representatives, donors, and government ministers from 23 African nations to discuss climate change and community-based adaptation in Africa. A number of CCAA partners and African Climate Change Fellows were on hand to present findings and engage in debate. To help research partners extend the reach of their findings, we established a support fund for knowledge sharing. The fund supports research communication materials and approaches that allow teams to share findings in forms best suited to their intended users.

The media plays a crucial intermediary role in raising awareness of climate change issues in Africa and informing the public of research efforts. This year, CCAA and its research partners were the subject of 44 media articles and broadcasts, down somewhat from coverage in 2009–10, when we witnessed a spike in interest in climate change issues.

We captured 44 media hits this year, including coverage by the East African Standard, the Guardian, Reuters AlertNet, and Radio Canada.

Outcomes

Examples of progress in our four outcome areas are given in **Stories from the field:**

- **Confronting sea level rise on Egypt's Nile Delta coast** presents research efforts to better understand the socio-economic vulnerabilities of coastal communities on the front lines of sea level rise and to put costs on the potential trade-offs in how various adaptation options would affect different groups.
- **Addressing Leishmaniasis in Tunisia's changing climate** highlights the unintended health consequences of adaptive irrigation systems and presents research undertaken with farming communities, through agricultural development groups and the regional farmers union, to increase farmers' awareness of increased risk associated with poor irrigation practices.
- **Weathering drought in the Greater Horn of Africa** reports on the testing of new tools and approaches as well as improved climate information access to help farmers boost productivity amid recurring droughts and increasing variability in Kenya, Ethiopia, Sudan, and Tanzania.



Eleven of CCAA's first projects closed this year, including one that focused on adaptation to climate change on Morocco's northern coast. Photo: IDRC/Mary O'Neill

- **Helping African cities prepare for climate change** presents efforts by the URAdapt project, in Accra and Addis Ababa, to improve urban-rural and sectorial collaboration on water management through research and science-based policy dialogue.

Learning from our experience

Each year, we present a selection of lessons from the field and from CCAA's programming experience. Our **Reflections** this year focus on

- The challenges of addressing uncertainties about climate change and its impacts in research to inform adaptive options, in **Using participatory action research to manage uncertainties in adaptation**;
- Observations from CCAA's second learning forum with research partners, held in 2010, in **Approaching climate change adaptation as a means to reduce poverty**; and
- The progress made in the first phase of AfricaAdapt, and how the second phase aims to build the network further, in **Making an adaptation network work for Africa**.



Using participatory action research to manage uncertainties in adaptation

The Climate Change Adaptation in Africa (CCAA) program has supported applied research to inform adaptation policies and practices that can reduce the climate vulnerabilities of African societies. A key challenge has been for researchers to anticipate the future impacts of a changing climate, and the consequences for societies that are also affected by demographic, economic, and technological changes.



In West Africa, researchers are helping to strengthen decision-making on fisheries policy. Photo: IDRC / Djibril Sy



Lessons learned

- **Participatory action research (PAR) helps reduce uncertainty when it focuses on immediate needs related to climate resilience and vulnerability, triangulates information from multiple sources, and strengthens institutions to make informed decisions.**
- **Decision-makers tend to be more constrained by institutional weaknesses in adaptive capacity more than by issues with uncertainty about future climate conditions.**

Recognizing that adaptation is a long-term, iterative process, CCAA's approach has been to support initial steps through participatory action research projects that do the following:

- *Deal with uncertainty* by considering low-regrets solutions that address immediate problems and improve climate resilience.
- *Triangulate information* from different sources to engage multiple actors, build consensus, and identify feasible actions.
- *Strengthen institutions* that use information and make decisions, so that further actions can be identified as new knowledge emerges.



In Benin, researchers focused on low-regrets strategies that improve soil fertility and access to early warning and advisory information.

Photo courtesy of IDID-ONG

Dealing with uncertainty

To develop good advice on adaptation, researchers try to reduce many uncertainties related to predicting future climate conditions and their potential impacts. Some researchers use climate models; however, because the systems being modelled are complex, some degree of uncertainty will always remain. Focusing on the unknowns rather than on what is known makes it difficult for those who must decide if and when to invest in adaptation options.

Many CCAA projects have focused on low-regrets solutions that address drivers of climate vulnerability. This approach reduces the sensitivity of communities to unpredictable shocks and stresses. Increased incomes, improved access to markets and government services, and reduced demands for water, for example, all strengthen the resilience of communities to deal with climate impacts. Crucially, they also address current development challenges, such as poverty and water insecurity, giving high confidence in a return on investment.

For example, in Benin, which has suffered extremes of flooding and drought in recent years, a CCAA project¹ worked with

farmers, researchers, NGOs, and government officials to create a severe weather early warning system and test better soil management techniques. These actions included specific adaptations to flooding, but also addressed poor soil fertility and food insecurity, both of which were pre-existing development challenges that made the communities more vulnerable to climate impacts. The project therefore included different types of adaptation activities: some focused on climate vulnerabilities specifically, while others addressed the general robustness of the community to shocks and stresses.

Researchers studying the relationship between climate change and vector-borne disease in Tunisia² realized that the use of irrigation water was a key factor in determining rates of infection. Although their research was not designed to address adaptation in agriculture, they have worked with local farmers' groups to reduce irrigation water use. This practice in turn reduced demands on scarce water resources and costs of pumping the water, with immediate benefits to the farmers.

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Triangulation of sources

Scientific uncertainties will decline over time as methods and observations improve and consensus grows, even though uncertainties will never be eliminated absolutely. Yet while the task of researchers is to reduce uncertainties and focus on what can be known, decision-makers and communities that are faced with climate change inevitably focus on what should be *done*.

¹ Strengthening the Capacity of Farmers to Reduce the Impact of Climate Change in Rural Benin.

² Analysis of the Health Impacts of Climate Change Adaptation: The Case of *Zoonotic Cutaneous Leishmaniasis* from *Leishmania Major* in Tunisia.



Where the impacts of climate change and increased variability are immediate, action is needed, even if uncertainties remain over the effectiveness of proposed interventions. In other cases, stakeholders may disagree about the likely impacts of climate change or the benefits of proposed adaptations, even if the scientific uncertainties are relatively low. Recognizing this political dimension of decision-making, a number of CCAA projects have responded to such situations by trying to engage multiple actors who have access to different information and then build consensus for appropriate action.

CCAA has supported research by the IGAD Climate Prediction and Applications Centre (ICPAC), which brought together climate modellers and members of the traditional Nganyi weather-forecasting community in Kenya.³ Engagement in the project generated increased trust between the two groups; together they produced integrated seasonal forecasts to be shared with local farmers. Integration of the two different sources of knowledge dealt explicitly with aspects of uncertainty in both the scientific and traditional methods.



In Western Kenya, ICPAC brought together scientific and indigenous forecasters to produce local level forecasts that are more useful to farmers. *Photo: IDRC / Thomas Omondi*

The process of integration also helped to fine-tune the downscaling of climate forecasts based on local knowledge about local features that determine weather.

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Building institutions for decision-making

Decision-makers in developing countries often work in constrained situations with limited opportunities to take action, and they frequently lack basic information. They are more likely to judge results and recommendations from complex research in terms of their practicalities rather than in terms of their uncertainties.

Given this situation, a number of CCAA projects have focused on strengthening institutional capacity for adaptation: for example, by creating multi-stakeholder platforms for information sharing and decision-making. A CCAA coastal adaptation project in Morocco⁴ used exactly this approach to compensate for the lack of a legal and institutional framework for integrated coastal zone management. The project brought together stakeholders from a number of government departments, NGOs, and citizens' groups.

Similar approaches have been used in coastal adaptation projects in Egypt⁵ and Cape Verde,⁶ by the URAdapt project on urban adaptation in Ghana and Ethiopia, by a regional fisheries project in West Africa,⁷ and in projects on, for example, agricultural and health adaptation.

³ Integrating Indigenous Knowledge in Climate Risk Management in Support of Community Based Adaptation.

⁴ Moroccan Coastal Management: Building Capacity to Adapt to Climate Change.

⁵ Adaptation to the Impacts of Sea Level Rise in the Nile Delta Coastal Zone.

⁶ CapaSIDS: Capacity Building and Knowledge on Sustainable Responses to Climate Change in Small Island States.

⁷ Adapting Fishing Policy to Climate Change with the Aid of Scientific and Endogenous Knowledge.



In Morocco, researchers brought decision-makers and local stakeholders together to develop strategies that protect coastal resources and livelihoods. Photo: IDRC / Mary O'Neill

The collective experience of these projects has been that convening stakeholder forums and providing even the most indicative information can catalyze adaptive capacity by raising awareness, focusing attention on the problem, building relationships between stakeholders, and generating experience in selecting and evaluating adaptation options.

Adaptation is a long-term, iterative process rather than a series of one-shot solutions. While CCAA researchers have made valuable contributions to strengthening the adaptive capacity of the communities and government departments that are partners in their projects, these are initial steps in a long process. The experience of CCAA projects so far has been that institutional weaknesses in adaptive capacity are more significant limitations than are issues with scientific uncertainty around adaptation options. In contexts of larger institutional challenges, decision-makers may be more willing to rely on indicative information and less concerned by high levels of uncertainty in recommendations from adaptation researchers.

Looking ahead

Researchers will continue to improve their understanding of potential impacts from a changing climate as observations and data are collected. As experience with adaptation grows, their understanding of possible courses of action will also improve. In the meantime, even where uncertainties remain, action researchers can support positive outcomes that increase resilience to climate shocks and stresses and strengthen capacity to adapt in the future.

Improving our understanding of climate vulnerabilities can help communities develop more robust livelihood strategies. Initiatives to improve incomes and human health and to increase water and food security all have immediate benefits, while at the same time leaving people better able to cope with adversity caused by droughts, floods, and other climate impacts.

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Even when large uncertainties remain over the effectiveness of adaptation options, action researchers can strengthen the ability of people and institutions to make decisions. Convening stakeholder platforms, reviewing available evidence, and building consensus are all integral aspects of the participatory action research approach. Ultimately, adaptation to climate change will be a long-term process that is best served by people and institutions with the capacities to re-evaluate practices, policies, and plans in the light of new information. Action researchers have crucial roles to play in strengthening such institutions and capacities.



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Adaptation

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