

Getting African climate change research recognised

Across Africa, programmes such as the Climate Change Adaptation in Africa initiative are investigating what it means for countries and communities to effectively adapt to climate change, and how this can be achieved in practice. But research results are not always recognised by policymakers or the global research community — in part because they are not visible within the traditional hallmark of scientific scholarship and credibility, peer-reviewed literature. Greater efforts are required to encourage African scientists to engage in the peer-review process and give their research the credibility it needs to convince decision makers that robust scientific findings support the solutions offered. At the same time, decision makers themselves must find ways of assessing and making use of robust research outside the peer-review arena.

Policy pointers

- **Within the growing body of** peer-reviewed literature that deals with adaptation, there are few practical lessons for informing decision making.
- **Of the research from** Africa that fills this gap, most is not published in internationally recognised peer-reviewed journals, limiting its potential contribution to adaptation science and practice.
- **African research must** be supported so that its findings reach the peer review arena and gain the national and international recognition it deserves.
- **The peer-review process** is not infallible, and decision makers should have systematic ways of assessing the credibility of other robust research that falls outside the peer-review arena.

The role of peer review

In designing policies to adapt to climate change, policymakers demand robust and credible evidence about what 'effective' adaptation means and how it can be supported in practice.

One of the main avenues for establishing the credibility of research is the 'peer-review' process, used by most scientific journals. This requires that any submitted research paper is evaluated (reviewed) by respected scientists in the same field (the 'peers') before the work can be published.

Peer review is certainly not infallible. There are plenty of examples of poor quality research that has 'slipped through the peer review net', as well as excellent research that is never published. Yet, rightly or wrongly, peer review is seen to provide a level of quality assurance that decision makers can rely on. For example, the Intergovernmental Panel on Climate Change (IPCC), the international scientific body tasked with assessing climate risks for informing international climate change policy, only assesses peer reviewed literature. Only exceptionally will research that has not been peer reviewed make it into the IPCC.

When it comes to adaptation to climate change, the peer-reviewed literature is growing fast. Since 2000, at least 300 articles on climate change adaptation have been published every year in scientific journals listed by the International Scientific Index. But this growing pool of knowledge is limited in providing practical lessons that can inform adaptation decision making. Most peer-reviewed articles published between 2006 and 2009 focus on adaptation in natural, rather than human, systems.¹ Less than five per cent of them deal with actual adaptation actions; even fewer discuss adaptation by vulnerable groups such as women and children.¹

As a result, most adaptation planning borrows little from adaptation research.² The peer-reviewed literature is clearly failing to meet the information needs of decision makers tasked with building resilience among the poorest groups in the most vulnerable developing countries.

Filling the gap

The problem is not a lack of knowledge or relevant research. Rather it is a problem of making research visible.

It is important that African research on adaptation gets the platform it deserves

In Africa there is an increasing body of research that deals directly with issues of adaptation and resilience-building.

One example is the knowledge being gained through the Climate Change Adaptation in Africa (CCAA) programme.³ This programme, which aims to significantly improve the capacity of African countries

to adapt to climate change in ways that benefit the most vulnerable, has four main objectives:

- To strengthen the capacity of African scientists, organisations, decision makers and others to contribute to climate change adaptation.
- To use action research to support climate change adaptation by rural and urban people, particularly the most vulnerable.
- To generate a better shared understanding of the findings of scientists and research institutes on climate variability and change.
- To inform policy processes with good, credible, science-based knowledge.

Towards these ends, the CCAA programme has 46 projects across Africa, investing around US\$41.5 million since 2006 on research and capacity building activity. The programme has generated considerable knowledge on many different themes, bringing several development sectors together to jointly work on climate change adaptation. Partners have focused their efforts on key areas of research in climate-sensitive sectors,

such as agriculture, that are critical to economic growth in Africa.

Many African countries recognise that agriculture — which provides millions of people across the continent with their livelihoods — is highly vulnerable to climate change. There is growing evidence that crop yields in the tropics and subtropics are likely to fall due to rising temperatures. The availability of water in most parts of Africa is also expected to decline under climate change and be associated with recurrent droughts. And an increase in temperature is likely to reduce soil moisture, moisture storage capacity and the quality of the soil, which are all vital for agricultural crops.

An over-reliance on a few commodity crops, such as maize, coffee, peanuts and wheat, which are highly sensitive to climate variability and change, compounds the problem by increasing the potential economic costs of climate change to agrarian-based economies in sub-Saharan Africa. For many African countries, the agricultural sector is also an engine of growth that tends to have implications for a whole host of other macroeconomic indicators such as employment and export revenue.

The CCAA programme has responded to these issues by building the capacity of the most vulnerable groups, such as smallholder farmers, to better adapt to climate change, and by ensuring that African scientists who know so much about these contexts are able to convey their research to key local and national policymakers (see Research-policy partnerships).

Blocks and barriers

The CCAA's success in countries such as Malawi and Tanzania shows how African scientists — with their strong understanding of local contexts and realities — can bring issues that vulnerable local communities consider important to the political foreground. But these scientists need more opportunities to share their research results in ways that allow policymakers to translate them into effective policies and actions.

Ensuring that evidence emerging from the CCAA programme is seen as highly credible is key. In part, that means getting CCAA research into the peer-reviewed literature, where scientific advisors and decision makers can use it with confidence, and where other scientists across the world can learn from it.

But the bulk of this research is born out of non-peer review work — and so is less recognised by international science and not as influential as it could be. Why? There are several blocks and barriers to engaging in peer review.

An exclusive brand. The peer review process is still seen as an exclusive brand and one which a number of African researchers may perceive as elitist and unable to break into.

Research-policy partnerships

Researchers from the Climate Change Adaptation in Africa (CCAA) initiative have sought to strengthen the capacity of smallholder farmers to adapt to the impacts of climate change and respond to food insecurity more effectively. Researchers also work with extension and outreach staff to improve their capacity to respond to farmers' needs and deepen their knowledge on which crops and farming practices may be most favourable under various conditions.

Researchers engage in 'participatory action research' (PAR), engaging farmers as active agents in the research process rather than extracting and passively conveying knowledge.

In Malawi and Tanzania, researchers are working closely with vulnerable communities to identify, implement and scale up agricultural innovations to improve yields under a changing climate. Using 'learning plots', farmers and researchers together decide the best tillage systems, inputs and varieties for a cropping season under stress. Across ten sites in the two countries, farmers were able to use seasonal forecasts to make strategic decisions on planting times and methods. Through its participatory and inclusive process, the projects have collaborated with relevant ministries such as the Ministry of Agricultural Development to integrate the knowledge gained from the field, for example by assigning extension workers duties on project sites and working to develop extension service protocols.

These kinds of inclusive research-policy partnerships illustrate the importance of 'home grown' research in enabling policymakers to map opportunities that resonate with national and local contexts and realities.

Table. Challenges and opportunities for making African research more visible

Challenge	Opportunity
Perception of peer-review process as 'elitist'	<ul style="list-style-type: none"> ■ International publishers should improve access to their journals for developing country researchers and present themselves as publication platforms for a more diverse group of stakeholders. This can be done by opening doors to 'practice' papers rather than only emphasising theory. For example, <i>Climate and Development</i> accepts 'Case Studies' as well as more conventional research-based articles. ■ Journals, donors and established scientists should offer mentoring and editorial support to non-published researchers. ■ Researchers themselves also need to build their awareness, and make more of, existing support networks such as AuthorAID,⁴ which provides support, mentoring, resources and training for researchers in developing countries to publish and otherwise communicate their work.
Peer review not a priority for researchers	<ul style="list-style-type: none"> ■ Research funders and project managers should create incentives for peer review, for example by explicitly building in the necessary time and resources into individual research projects. ■ At the national and regional level, policymakers need to recognise the value of local research and provide financial support for scientists to engage in peer review.
Research infrastructure not well supported in Africa	<ul style="list-style-type: none"> ■ The value of good research needs to be better recognised by African governments through increased budget allocations for research and development.

Competing priorities. The international peer-review process is not a priority for many researchers, particularly those undertaking the 'action research' that is so important for learning and developing best practices for climate change adaptation. Many choose to invest their limited time in serving the needs of the communities with which they interact — which are far removed from international academic arenas — and in fulfilling their contractual obligations to write technical and financial reports.

Limited resources. Many African research institutes and NGOs working with communities are hampered by limited budgets and tight timelines; they simply do not have the time and resources required to write scientific papers and engage in peer review. African research organisations — particularly those supported by government — tend to be under-funded, often relying on external donors to sustain their research activities. They may also be mainly involved in monitoring research and less likely to be in a position to 'push' the research agenda.

Opportunities for change

So how can African researchers be better supported to make their work more visible both nationally and internationally? When it comes to promoting engagement with the peer review process, there are several things that leading journals, research funders and policymakers can do — from providing writing and editing support to giving time, resources and recognition to research (see Table).

Within the CCAA programme, several different strategies are being used to help researchers enter the peer review arena. For example, the programme has already started a 'mentoring' process, in which leading international

climate change scientists support African researchers through the peer-review process. Out of this project, the programme hopes to submit a collection of research papers to a special issue of a leading international climate change journal.

Elsewhere, the programme has already published some of its work in a small, but expanding, number of peer-reviewed articles in sector-specific journals.

But also recognising the limits of peer-review and the value of other outlets, CCAA utilises a diverse range of communication avenues to get its wealth of information out to policymakers and the wider public. These include include book chapters, annual reports, policy briefings and presentations. For example, CCAA uses AfricaAdapt,⁵ a bilingual, multi-stakeholder network and platform for collaboration and communication on climate change. The platform uses web-based applications, face-to-face interactions, and other media for sharing resources; facilitating learning; and strengthening the African adaptation community.

Deserved recognition

The CCAA programme is not alone in its approach. Across the continent, innovative, credible and useful research on adaptation and resilience is being documented outside the peer-reviewed literature.

Perhaps the most important thing that policymakers, both within and beyond Africa, can do to make the most of this knowledge is to find systematic ways of assessing the credibility of non-peer-reviewed research and enabling its use to support policy and practice.

Credible scientific results and products will assure African and international decision makers that the most critical climate change adaptation questions are

being posed, and robust findings are being generated to address them.

Research on Africa that is generated outside the continent poses many problems relating to ownership and credibility, which has implications for making strategic policy choices and decisions in key sectors of growth that are sensitive to climate change.

It is important that opportunities are created for African research on climate change adaptation to get the national and international platform it deserves, both through the peer-review process and other avenues. In a context where government policies are neutral or there is no apparent leadership, a strong research agenda can help to promote the issues in ways that would lead to

an uptake in research results. The large pool of research emerging from Africa is a potentially huge resource on adaptation, and it needs to be given the recognition it deserves.

■ **FATIMA DENTON, SIMON ANDERSON AND JESSICA AYERS**

Fatima Denton is Programme Leader for the Climate Change Adaptation in Africa programme at the International Development Research Center in Ottawa, Canada. Simon Anderson (www.iied.org/climate-change/staff/simon-anderson) is head of IIED's Climate Change Group. Jessica Ayers (www.iied.org/climate-change/staff/jessica-ayers) is a researcher in IIED's Climate Change Group.



The International Institute for Environment and Development (IIED) is an independent, nonprofit research institute working in the field of sustainable development. IIED provides expertise and leadership in researching and achieving sustainable development at local, national, regional and global levels. The 'Lessons from adaptation in practice' series has been produced with generous support from the Japan International Cooperation Agency (JICA).

Contact: Jessica Ayers
jessica.ayers@iied.org
 80–86 Gray's Inn Road,
 London WC1X 8NH, UK
 Tel: +44 (0)20 3463 7399
 Fax: +44 (0)20 3514 9055
 Website: www.iied.org

Notes

- ¹ Berrang-Ford, L., Ford, J.D., Paterson, J. 2011. Are we adapting to climate change? *Global Environmental Change* 21, 25–33
- ² Eakin, H.C., Patt, A. 2011. Are adaptation studies effective, and what can enhance their practical impact? *Wires Climate Change* 2
- ³ For more information about CCAA, see web.idrc.ca/ccaa/
- ⁴ AuthorAID is based at the International Network for the Availability of Scientific Publications (INASP) and is funded by development agencies in Sweden, Norway and the United Kingdom. It provides mentoring and support for researchers in developing countries to publish their work, and serves as a wider global forum to discuss and disseminate research. See www.authoraid.info
- ⁵ For more information about AfricaAdapt, see www.africa-adapt.net/AA/AboutUs.aspx