Adapting Agriculture to Climate Today, for Tomorrow

Columbia Climate School International Research Institute for Climate and Society

Columbia World Projects

In its five years, ACToday worked to combat hunger by increasing climate knowledge in six countries that are particularly dependent on agriculture and vulnerable to the effects of climate variability and change: Bangladesh, Colombia, Ethiopia, Guatemala, Senegal and Vietnam.



Introduction

Adapting Agriculture to Climate Today, for Tomorrow (ACToday) was a five-year development project supported by Columbia World Projects and managed by Columbia Climate School's International Research Institute for Climate and Society (IRI). ACToday aimed to combat hunger by establishing or strengthening climate services in Bangladesh, Colombia, Ethiopia, Guatemala, Senegal, and Vietnam. This goal was guided by the recognition that the world cannot advance toward the U.N. Sustainable Development Goal of "Zero Hunger" (SDG2) without first addressing the impacts of current climate variability and extremes in countries that face recurring food insecurity.

The six countries were selected because their economies are highly dependent on rainfed agriculture and therefore very susceptible to climate-related impacts. ACToday activities focused on improving the generation, translation, transfer, and use of climate information within these countries to help reach their SDG2 targets. The project supported the six national meteorological agencies to produce state-of-the-art forecasts and other climate information, products, and tools for decision-making related to agriculture and food security. ACToday also worked with and trained staff from agriculture, public health, insurance and other sectors to more effectively use these new climate services in operations and planning efforts.

The ACToday project was able to embed climate knowledge and services into the agendas of national organizations and international development partners to help them address climate-related challenges to food security. ACToday interventions were critical in fostering interactions between the national meteorological agencies and user communities, especially through capacity building workshops and the development of university curricula. ACToday's investments also enhanced index insurance and forecast-based financing initiatives of international development partners, as well as helped make progress on monitoring and early-warning decisionsupport systems.

In several countries, ACToday's efforts to increase capacity, ownership, and demand for climate services contributed to an enabling environment that will sustain the project's outcomes for many years. For example, new development projects by the CGIAR, the World Food Programme and the World Bank are implementing ACToday approaches and innovations, as well as benefiting from the increased capacity and capabilities that remain because of ACToday.

This report summarizes the key outcomes and lessons learned by the project. To learn more, please visit <u>iri.columbia.edu/actoday.</u>

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Walter Baethgen International Research Institute for Climate and Society ACToday Lead

REMEMBERING LISA GODDARD

The ACToday project could not have been possible without the leadership and expertise of Lisa Goddard, who served as IRI's director from 2012-2020, and as a co-lead on ACToday. Lisa passed away in January of 2022.

OBJECTIVES

The goal of ACToday was to create climate-service solutions that help end hunger, achieve food security, improve nutrition, and promote sustainable agriculture. The project accomplished its four objectives:

- Identify and prioritize opportunities to improve the use of climate services in efforts to help end hunger, achieve food security, improve nutrition, and promote sustainable agriculture in each of the six target countries.
- **Develop and tailor priority climate services** that support SDG2 in each of the six countries.
- Embed climate knowledge and services in the agendas and programs of national organizations and international development partners working in each of the six countries.
- Generate evidence that can guide policy, practice, and research to improve the management of climate-related impacts on hunger, food security, nutrition, and sustainable agriculture.

What are Climate Services?

'Climate services' is a term used for the tools, products and activities that help translate climate science and climate information to non-scientists. Examples include seasonal climate forecasts, early-warning map for flooding, drought monitoring tools, and financial mechanisms such as index insurance that can protect against certain climate risks. A climate service encapsulates not only the development of such tools but also the processes put in place to ensure these tools are understandable and useable by decision makers and policymakers in their efforts to manage climaterelated risks.



The graphic below desribes the four pillars that underpin effective climate services.



Credit: International Research Institute for Climate and Society

Key Outcomes

ACToday built the climate services capacity of both the provider and user communities, catalyzed new programming areas for climate services, and enhanced partners' initiatives through improved climate information, products, and tools. The strongest ACToday achievements were in strengthening the capacity of the six national meteorological agencies, and helping establish more productive connections with user communities in need of reliable climate products and tools.

PROJECT ACHIEVEMENTS:

- ACToday played a catalytic role in raising awareness of climate services and moving discussions and new initiatives forward among partner institutions.
- ACToday showed demonstrable success in building the capacity of the national meteorological agencies to generate data and tools that resulted in more accurate, reliable, and trustworthy monitoring data, historical databases, and forecasts. The effectiveness of these efforts is clearly expressed in the demand by the national meteorological agencies for more advanced training and increased ownership and command of climate data, tools, and processes across countries.
- The improved information and tools that the national meteorological agencies now have available, along with ACToday awareness raising and capacity building, have contributed to increased demand by user communities for these products.
- Implementation of ACToday tools, products, and approaches is being scaled through programs run by national and international partners, as well as through new funding to IRI.
- ACToday was seen as a neutral and credible partner that could work across disciplines to move climate services dialogues and policy processes forward.
- The potential for additional scaling exists through decisionsupport tools developed by ACToday that are being integrated into decision-making processes and that are being demandd by other countries.
- Curriculum integration into universities is being implemented with the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM)–a consortium of more than 160 universities in 40 African countries–which will lead to capacity improvements in the future.



 ACToday enabled the national meteorological agencies to provide new or improved climate information, including more accurate forecasts and higher resolution climate data, to relevant institutions, resulting in a strong foundation for climate services to flourish into the future



- ACToday built awareness and capacity that resulted in significant multipliers, such training of trainers, new curricula in local educational partners, and the standardization of climate services training approaches for agricultural extension.
- ACToday catalyzed new programming areas for climate services, including nutrition and aquaculture.



- ACToday contributions provided a game-changer in forecasting skill used to develop triggers for anticipatory actions, enabling more effective and targeted humanitarian response.
- ACToday increased efficiency and built local ownership in larger index insurance efforts, which had a multiplier effect reaching substantial scaling.

ACToday's Key Outputs



175 PARTNERSHIP AND ALLIANCE-BUILDING

ACTIONS, including leveraging and resource mobilization of nearly \$6 MILLION in additional funding.



32 POLICY ACTIONS, DIALOGUES, AND PROCESSES

to support national policies and institutional arrangements for climate services in the project's six countries.



Credit: Francesco Fiondella

156 RESEARCH OUTPUTS,

including 41 published peerreviewed publications, one published book and two published book chapters.



RESEARCH AND WORK OPPORTUNITIES for 85 UNIVERSITY student interns, research assistants, graduate students, and postdoctoral researchers.



163 MAPROOMS and 44 CLIMATE-SERVICES PRODUCTS AND TOOLS for

climate analysis and forecasting, including 8 online platforms for monitoring, early warning, and decision support for agriculture.



187 CLIMATE SERVICES TRAININGS AND WORKSHOPS

for **5,500+** agriculture advisors, local researchers, farmers, meteorologists, and other public- and private-sector professionals.



Foundations for Success

ACToday was designed on the premise that co-producing improved climate services with national agencies and international humanitarian partners would improve uptake, enhance existing programming, and enable ACToday approaches to be scaled. This would ultimately lead to improved agricultural decision-making and better climate risk management at national and local levels.

CO-PRODUCTION

ACToday's close collaboration with national and international partners enabled development of climate services tailored and targeted to the country context and respond to local needs. ACToday staff assessed local contexts, and aligned work with longstanding priorities built through years of engagement with local partners.

Throughout the life of the project, implementation was an iterative process involving partners in every stage. This approach enabled ACToday to be flexible and adaptive; it allowed the project to take advantage of emerging opportunities, as well as adjust to new challenges, such as COVID-19. The flexible design also provided the time needed to build critical trust with new partners and ensure greater local ownership.

PARTNERSHIPS

IRI's history of strong partnerships was critical in establishing trusting relationships and shared implementation agendas with local partners in the ACToday countries. In particular, the long-standing working relationships and trust built with the national meteorological agencies provided a strong foundation for robust collaboration. ACToday interventions were most effective when aligned with a strong implementation partner to support the dissemination and use of climate services.

INFLUENCE, LEVERAGE, AND SCALE

ACToday was able to successfully influence, leverage, and support scaling of partners' climate service initiatives in index insurance, forecast-based financing, and decision support systems for climate risk management, early warning, and anticipatory action. The project achieved this through building the capacity and improving the forecasting and monitoring capabilities of producers, through the development of new tools and approaches, and through building capacity of users to understand and use climate services.

ACToday mobilized almost \$6 million in new or leveraged funding. The project was able to indirectly reach more than 600,000 people in the six ACToday countries; this number rose to more than 1.2 million when including scaling to other countries.

By the end of the project, more than a dozen international and local partners were actively using ACToday-promoted tools and processes, ensuring that the reach will continue to grow.



Ensuring Sustainability

In order to achieve durable and lasting results, ACToday made concerted efforts to build local capacity and instill ownership of tools and processes, as well as working to bring-in additional investment and enshrine climate services into policy mandates and institutional arrangements.

LOCAL OWNERSHIP

National meteorological agencies reported ownership of climate information, tools, and products co-produced with ACToday. This is demonstrated by uptake and integration of ACToday tools and approaches into routine functions for monitoring and forecasting, such as the dissemination of ACToday climate products to various user communities through multiple mediums. Staff have dedicated roles and responsibilities to run ACToday tools and have demonstrated an eagerness for additional capacity building activities to continue these efforts.



ACToday climate-services training in Bangladesh. Credit: Jacquelyn Turner

2012

CAPACITY

ACToday led to demonstrable increases in knowledge and skills of national meteorological agency staff as well as improvements in their ability to provide high-quality, needs-based climate information and services. ACToday also invested in significant awareness raising and capacity building with users, thereby establishing a critical mass to drive future demand and motivate efforts by the national meteorological agencies to sustain climate services. There was a clear sense across ACToday countries of increased demand for and trust in climate services offered by these agencies. The awareness and capacity building initiatives in the user communities also helped to foster networks and to increase communication among user institutions and with the national meteorological agencies. The user communities across the ACToday countries expressed clear motivation to continue climate service capacity building efforts and dialogues. This climate service ecosystem developed across countries is likely to help sustain interest in and support for continued climate services efforts.

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INVESTMENT

By leveraging additional funding, ACToday enabled initiatives that otherwise would not have been completed or fully integrated into decision-making frameworks and institutional contexts to become operationalized, thus providing critical continuity of effort. The Accelerating Impacts of CGIAR Climate Research in Africa (AICCRA) project represents a continuing driver of demand, and a mechanism to further develop climate services development in Senegal and Ethiopia, and scale out this effort to other countries in Africa. Several other new initiatives are strengthening and scaling ACToday innovations in the six countries and scaling out to others.



POLICY MANDATE

ACToday supported local governments in the implementation of the National Framework for Climate Services (NFCS). In Ethiopia, a NFCS was successfully endorsed and Guatemala and Vietnam are now beginning the process. This momentum was enabled due to a great deal of trust between IRI and the national meteorological agencies built over a long working relationship. In other locations, climate service interventions supported by ACToday have gained significant buy-in from the national government, which has led to formal institutionalization of the initiatives and ensures ongoing resource allocation. ACToday efforts increased awareness and capacity, and built greater dialogue and collaboration between producers and users, as well as between national ministries. Provision of continued investment through new donor-funded projects increases the overall likelihood of greater adoption and integration of climate services into national mandates.

Credit: Jacquelyn Turner

ACToday's Tufa Dinku (middle) with several government officials at the launch event of Ethiopia's National Framework for Climate Services on May 25, 2021. Asaminew Teshome.

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Projects are led by Columbia University faculty, researchers, academics and practitioners from across the world, who implement activities designed to achieve a measurable impact on complex local, regional or global challenges.

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