



# NMA ENACTS: An Example of a Co-produced Climate Service Fit for Purpose



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## Aim of the project

The **Enhancing National Climate Services (ENACTS)** initiative aims to improve availability, access and use of climate information for national and sub-national decision-makers. This case study is focused on the experience of ENACTS in Ethiopia which is led by the National Meteorological Agency (NMA).



## Dates

2011 – present



## Countries

Ethiopia



Ethiopian decision-makers are now accessing high-resolution climate information from maprooms to improve agricultural output, water resource management and malaria control at the local level. (Source: *AC Today*, 2019)

## Aim of co-production:

Within the Ethiopian ENACTS project, co-production has been used to: (i) initiate dialogue between the climate community and different climate-sensitive sectors; (ii) build capacity in both communities to produce and use climate information; (iii) identify new climate services based on user needs and the meteorological service's capacity to deliver; and (iv) work towards the delivery of climate services to multiple users from national to local levels.

## Context:

The starting point for the ENACTS co-production process in Ethiopia was a Google-funded project (2008-2011) called 'Building capacity to produce and use climate and environmental information for improving health in East Africa' (Connor et al., 2011). The co-production process described below was developed during the course of this project and created the foundation for the ENACTS initiative, now being implemented in more than ten countries in Africa – in part with WISER support.

## Who was involved and what were their roles?

The critical initial partners were the National Meteorological Agency (NMA) of Ethiopia and the Anti-Malaria Association (AMA) – a local non-governmental organisation – and the Ministry of Health (MoH). A significant early development of this project was the creation of a Climate and Health Working Group (CHWG), co-chaired by the Ministry of Health and the NMA with the AMA as the Secretariat. Co-production during this phase of the project involved establishing trust amongst the partners and the building of capacity in both health and climate communities to enable them to work constructively together. The CHWG ran for

a number of years and was instrumental in organising a series of climate and health workshops in Ethiopia, including the Pan-African 'Climate and Health in Africa 10 Years On' Workshop in Addis Ababa in April 2011 (Omumbo et al., 2011). As a boundary institute, the International Research Institute for Climate and Society played a pivotal role in providing technical support to both climate and sectoral partners. Over time, the ENACTS initiative attracted additional resourcing from a variety of donors and the Ethiopian Public Health Institute (EPHI), researchers at Addis Ababa University and the USAID's Presidents' Malaria Initiative (PMI) played an increasingly important role in focusing attention on climate services for malaria control in Ethiopia, amongst other priorities.

## How was co-production done?

### Identify key actors and build partnership

The Climate and Health Working Group was able to bring together a diverse community of operational and academic stakeholders in Ethiopia. In particular, the Ethiopian Public Health and Nutrition Institute (later the Ethiopian Public Health Institute) took a lead role in developing new products and services that responded to requests from the Ministry of Health. Malaria experts from the USAID office also participated in the working group – and were able to contribute expertise and funding. Many young researchers undertaking Masters or PhD programmes from many universities across Ethiopia were invited to participate in the workshops – some of whom later were sponsored to undertake specific health field research using climate data. In this way the CHWG laid the foundation for a broad network of stakeholders to work at the interface of climate and health.

### Build common ground

Workshops conceived and implemented by the CHWG were always targeted to specific national and sub-national health or development issues, involved both research and implementation partners, focused on locally identified priorities, engaged in trust-building exercises between the meteorological service and sector communities, and were designed to build a shared language that all parties could understand.

### Co-explore need

An important part of the design of the workshops was to always invite important leaders from the Ministry of Health to open the workshop and present the broad policy landscape relevant to the particular discussion to the participants prior to the workshops start. This way the workshop co-production processes explored solutions that could respond to issues raised by policy-makers.

## What was co-produced?



- **Datasets:** Quality assured historical and monitoring (recent and current) rainfall and temperature products at 4km grid resolution and daily time resolution were created by NMA which can be used to develop climate products tailored to user needs.
- **Online 'maprooms':** Maprooms were installed on the NMA website and used to communicate the output images of the data and derived products via the NMA's website (access via [iri.columbia.edu/ENACTS](http://iri.columbia.edu/ENACTS)). Products were co-designed and/or revised with user communities to support specific health, agriculture and water decision-making processes. Co-developed Maprooms include:
  - A multi-purpose El Niño-Southern Oscillation (ENSO) Rainfall and Temperature Maproom.
  - A health specific Malaria Elimination Climate Surveillance Suite (MECSS).
  - Other maprooms developed for agriculture and water are not discussed further here.



## Benefits of the co-production approach

- By integrating data availability, access and use into one conceptual framework, the co-production processes around ENACTS in Ethiopia has helped overcome multiple barriers to climate services development and uptake.
- Co-production processes have enabled sectoral and climate users to help define products and tools that may serve their specific areas of interest. For example, the ENSO Maprooms developed for Zambia were identified by both climate and health users as important to the Ethiopian context and were subsequently replicated and installed in the Ethiopian ENACTS Maproom and used by the health and climate community for their own purposes.
- Co-production processes have allowed the sectoral communities to identify the climate services they need and want as opposed to the meteorological services providing products and services they *think* the users want – e.g. rapidly outdated paper bulletins.
- The development of ENACTS data and services have become institutionalised in NMA with the development of standard operating procedures. ENACTS has also changed the institutional structure of NMA to enable cross-departmental collaborative activities – since ENACTS requires input from a number of different departments and can also serve the needs of multiple departments.

## Co-develop solutions

Workshop reports highlighted contributions made by each individual and institution, and the recommendations that emerged from the process were agreed collectively and publicly at the end of the workshop. Over time, the workshops increasingly incorporated targeted training materials to help participants familiarise themselves with climate concepts and ENACTS data and products. Climate service products developed as a result of workshop recommendations were then incorporated into training materials and used during subsequent training and further iterated upon. Development of new maprooms were based on:

1. Co-produced workshop recommendations for specific climate services for example, the Malaria Elimination Climate Surveillance Suite (MECSS)
2. Maprooms developed in other countries that, after presentation to CHWG were recommended for development in Ethiopia, for example, the ENSO Maprooms which were first developed in Zambia.
3. Maprooms developed for one sector (e.g. health) found to be relevant to others. Simple changes in the presentation of the Maprooms were made by NMA to enable a new user community to participate in the process (e.g the development of a Water Maproom by recreating the General Climate Maprooms using Water Basin boundary files as opposed to administrative boundaries). This maproom has recently been prioritised by NMA in relation to the hydropower crisis associated with the 2019 drought.

Co-production processes provided opportunities for the NMA and sectors to develop personal relationships and discuss difficult issues – such as data sharing policies – in a constructive environment. Cost recovery of meteorological data in Ethiopia is mandated by law and so NMA is constrained in sharing data publicly at no charge. NMA will however provide the data free of charge on demand from government and academic institutions. Even where meteorological data is free (or at low cost) the process of accessing the data is cumbersome and this acts as a barrier to uptake. Co-designed solutions include an online 'Authorisation' tool which would allow designated individuals to access the ENACTS data directly. However, this is yet to be implemented.

## Co-deliver solutions

The development of co-delivered solutions means that both producers and users of climate information are able to promote the uptake and use of the services developed. In the Ethiopian context, this means a formal relationship between institutions and the sharing of data, tools and knowledge. The Ethiopian Institute of Agriculture Research (EIAR) and the Ministry of Agriculture have accessed the entire ENACTS daily dataset to enable EIAR to co-develop crop forecasts and other decision-support systems for farmer advisories. The EPHI is currently exploring a similar opportunity.

## Evaluate

We are not aware that the ENACTS initiative in Ethiopia has been formally evaluated by an independent organisation. However, evidence of its value to sectoral partners is increasing. At a technical level, ENACTS is routinely promoted by partner organisations in Ethiopia. Requests for training in maproom use by

different agencies e.g. CARE, EPHI, International Federation of the Red Cross, Christian Aid, MoA etc is exceeding current capacity at NMA. Demand for the recent developments in the Water Maproom comes directly from the Minister of Water, Energy and Irrigation in response to the 2019 drought.

## Lessons to learn from:

- **Collaboration:** The conceptual framework for ENACTS emerged out of a collaboration between climate and non-climate experts at IRI and partners in Ethiopia – and is itself a co-produced initiative.
- **Equitable participation:** In order for co-production to take place, there needs to be a level playing field for all actors to participate equally. For this to happen, the user communities need to have sufficient capacity to review and discuss the climate information services currently available or being proposed. Users also need capacity to imagine, within plausible limits, what might be available to them in the future so that they can instigate effective demand for new products and services.
- **Institutional awareness needed:** Because government and non-government agencies often have high staff turnover it is essential that there is broad incorporation of climate knowledge into professional training across sectors.
- **Trust building takes time but is vital:** The climate community needs to honestly share their learning in data and services development and to work proactively to fill the climate services gap that they and users identify. When this happens the user community are also more likely to share their data and information challenges and look for solutions. This only comes from building trust between disparate communities, which takes political will, time and resources.
- **Ingredients for success:** After a decade of engagement with the development of climate services in Ethiopia, proactive problem solving, patience and persistence are key elements that underpin the success of the programme.
- **Purposeful development:** Climate service development must be understood as a journey where knowledge from different actors is both shared and built. However, in the end, climate services must deliver some new opportunity to decision-makers to make better decisions. It is not a journey without a destination!

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