



HIGHWAY: Co-produced Impact-based Early Warnings and Forecasts to Support Fishing Communities on Lake Victoria



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Aim of the project

The **High Impact Weather Lake System** (HIGHWAY) is a project under the WISER programme that addresses the need for improved, accurate, early warning systems to prevent deaths and damage due to storms and strong winds in the Lake Victoria Basin. The project provides regular weather forecasts and severe weather warnings for fishing boats and small transport vessels on Lake Victoria, and disseminates these bulletins through local radio and/or mobile phones. These bulletins provide clear, practical advice about how affected persons can protect themselves from, or mitigate the impact of, imminent threat. The key activities of HIGHWAY revolve around user engagement to understand and meet specific services needed through a co-production process.

Regional, impact-based, early warning system event in Nairobi, Kenya (Source: Tim Donovan, November 2019)

Aim of co-production:

The aims of the co-production were to better understand the impacts of weather – particularly severe weather events – on lake users. This understanding informed the development of relevant and actionable information and advice by the National Meteorological and Hydrological Services (NMHSs) around the lake (Kenya Meteorological Department, Uganda National Meteorological Authority, Tanzania Meteorological Authority and Rwanda Meteorological Agency).

In order to understand the most appropriate methods for reaching potential users of the service, local media and community organisations were canvassed on the timing of bulletins, dissemination methods and the language used and understood by users, taking into account appropriate lexicon, dialect and local languages.

Context:

Whilst the NMHSs in the region did provide forecasts to the target communities, the forecasts were designed to provide basic information. Users on Lake Victoria require additional information, such as wave height, and clear messages on the impacts of weather and what action should be taken to avoid risks. Many of the communities are also remote, like island communities, for example, and are not well served by the traditional methods of communicating forecasts. This led to a low uptake of existing services in many areas.

Who was involved and what were their roles?

The project brought together, in workshops, a range of participants with specialist knowledge and skill sets to share information and co-develop the service, facilitated by the Met Office and the NMHSs. Each country held a national workshop, and two regional workshops were held. The following role players took part:

- Senior operational forecasters from the NMHSs provided information to the group on the current and potential forecasting capability and developed new products based on the co-production process.
- Representatives from the fishing communities, such as the Beach Management Units (BMUs) and fishing cooperatives, shared information on weather impacts and the needs of their communities.
- Local government, such as Disaster Risk, Fisheries and Marine, provided context for local decision-making, and the processes that led to action being taken.
- Media – primarily local radio station operators – supported improvements to dissemination and translated forecasts, warnings and advice.
- International Development Managers and International Meteorologists from the Met Office, alongside specialist communications and marketing staff and consultants, provided training to the participants on planning communications, developing services and methodologies for co-production, and overall coordination of the co-production activities.

Dates

2017–2021



Countries

Kenya, Uganda, Tanzania
and Rwanda



What was co-produced?

- **Twice daily forecast:** The participants co-developed a forecast that met the specific needs of the user group. The forecast, issued twice a day at the times when day- or night-fishers are making decisions about their activities, contained clear information for different sections of the lake. It used colour-coded warnings, and a set of easily understood icons that provided relevant information on wave height, winds, rainfall, visibility and the risk of storms. Where risks were identified, information was provided on the possible impact of these risks, and advice was provided on how to mitigate these impacts.





Benefits of the co-production approach

It was clear at the start of the project that, from the point of view of the NMHS and the user communities, there was a significant gap in perception of the current services provided. NMHSs were routinely providing high-quality forecasts through their websites and TV broadcasts and considered these to be meeting the needs of the majority of stakeholders. The user groups did not find the forecasts were meeting their needs as the forecasts did not explain the impacts of weather. Instead, they were providing weather variable information such as wind speeds, temperatures and rainfall amounts. Also, users did not have access to the internet, and the TV broadcasts were broadcast at times when decisions had been made and fishermen were already on the lake. The co-production approach allowed users and NMHSs to identify and address this gap in a meaningful and collaborative manner, leading to the current situation, where the NMHSs understand better the needs of their users and are providing a useful service.

How was co-production done?

Identify key actors and build partnerships

Each of the NMHSs identified representatives from the user groups (BMU Chairs, leaders of fishing cooperatives), the media and the appropriate local government stakeholders. These representatives were then encouraged to identify any additional missing stakeholder participants, accepting that, at the early stages of the project, the NMHSs may not yet have been able to identify all the necessary participants.

National workshops were held with these representatives to explain the concepts of an impact-based early warning system, to gain understanding of the needs of the users, and to develop local, national and regional networks.

Build common ground and co-explore need

During the workshops, space was given to stakeholder representatives to share their experiences of how severe weather affected their lives and livelihoods and how they made decisions related to their work. NMHS representatives were encouraged to explore with the stakeholders what information was available to meet their needs, and how this could be best presented by providing impact information as well as meteorological variables. Use-cases for the product were developed using real-life examples of the experience of severe weather; impacts were discussed in detail and advice statements were written, suggesting practical mitigation actions.

The discussions and outputs were facilitated using a range of techniques, including traditional classroom-style training, round tables, serious games as well as guided and open plenary sessions. Early in the workshops, principles of participation were agreed, such as: everyone has an equal voice, the approach to disagreements and the mechanisms for those who felt less confident to contribute in open sessions.

These principles were introduced in the opening sessions at each workshop, and refined by the participants, if needed, and were implemented by the workshop facilitators and interlocutors. It was found that simple 'rules' and processes worked best for this, for example: not interrupting speakers, setting aside specific time for comments and questions, providing flipcharts for people to write on during breaks and breaking into smaller groups to examine any difficult choices in more detail.

Co-develop solutions

The key outputs of the sessions were:

- clear user requirements and use cases. Innovative products were co-produced by NMHSs, scientists and users, and validated and implemented to improve early warnings in the region;
- impact tables, describing the risks associated with severe weather, and advice statements, providing recommended mitigation actions;
- communication plans to improve dissemination; and
- standard operating procedures (SOP) for the production of the service, and for response to the warnings.

Following the round of national workshops, two regional workshops were held. At the first, prototype products were shared, and discussions between the user representatives and the NMHSs helped to facilitate further refinement of these products. The second workshop followed the implementation of the forecast, and discussions took place on how to enhance the forecasts' use and increase their impact. These regional workshops were also an opportunity for cross-learning between the countries involved and sharing best practice.

Co-deliver solutions

Following the co-development of the products, the NMHSs began the production of the services, based on the user requirements. These were then disseminated to key stakeholders for ongoing delivery to the end users, using methods that had been established as suitable at the national and regional workshops. Communication methods were determined based on the shared understanding of how communities were best able to receive information, and on how the quality and authoritative voice of the NMHSs could be maintained. Consideration was also given to the resources required to ensure that the communications methods would be sustainable after the project end. WhatsApp messages with the forecast were sent to the BMUs and community leaders, who used these to hold discussions with the fishermen, post notices or raise flags at the landing sites, as appropriate. Local radio stations received messages or emails and translated the forecast and advice into local languages, broadcasting them in news and current affairs programming.

Evaluate

Using the WhatsApp groups, BMUs and community leaders were able to provide immediate feedback on the forecasts to the NMHS. This feedback forms part of the evaluation of the effectiveness of the project, alongside more formal evaluation and monitoring. The users were involved in the need analysis, the way products and services are packaged and distributed and they proffered feedback for improvement.

Lessons to learn from:

- **Co-production needs to be adequately resourced:** This resourcing needs to be both in the form of committed time from the participants, and financing for the costs of those attending meetings and workshops. For example, the user representatives are often giving up days of work to participate, which can result in lost earnings. The presumption is often that participants will be glad to be involved, as the co-production will result in positive outcomes for them and their communities. However, this can conflict with their short-term economic needs. Understanding this, and compensating for it when possible, increases the likelihood of participation.
- **Participants need to be able to participate fully:** Establishing principles for participation ensures that all voices are heard, and that those involved feel able to challenge constructively and effectively. For many participants in co-production – and especially so for users – this may be the first time that they have been engaged in formal processes of this kind. Being clear that all contributions are valued and welcomed, actively challenging established hierarchies and encouraging contribution from all helps to develop the confidence of all to engage.
- **Co-development is a continual process:** Building mechanisms for feedback into the co-development and co-production process that continue beyond delivery ensures ongoing improvement and stakeholder buy-in for the services that are co-developed.