

Early Warnings for Southern Africa HIGHLIGHTS

30 June 2025

Under the WISER programme, led by the Met Office in the UK and funded with UK International Development, the Weather and Climate Information Services for Africa (WISER) Early Warnings for Southern Africa (EWSA) international consortium has been working in this region since mid-2023 to co-produce novel early warning alerts (known as 'nowcasts') for severe weather events, which are accessible and useful to communities at risk and those tasked with disaster risk reduction. Early warnings based on nowcasts and for thunderstorms can help communities prepare in a way that saves lives. EWSA is also a very practical way of contributing to the United Nations' Early Warnings for All (EW4All) initiative led by the World Meteorological Organization (WMO). EW4All aims to ensure that every person on Earth is protected by early warning systems by 2027. To ensure accessibility among all population groups, EWSA has a particular focus on including women and people with disability in the co-production process. <https://www.metoffice.gov.uk/ewsa-news>

Funded partners



Message from the project lead



As the project approaches its conclusion, I want to thank everyone who has made the work both inspiring and enjoyable. When we look back to the start of WISER EWSA, it's clear how far we have now come. In particular, we have delivered the first severe weather forecast testbeds in southern Africa, and we have involved urban community members in those testbeds to a remarkable degree. On the global stage this engagement of communities in testbeds is unusual.

The interactions we have developed might now feel familiar to members of the project, but this way of working is novel, and is being observed worldwide. International organisations are talking about the need for similar user-focused testbeds, and the priority of nowcasting for Africa, in their support for capacity building in early warnings.

Some people in the project are moving on to new things. Others are continuing the work as part of their daily responsibilities, for instance as forecasters and researchers, and in communities and committees. It's inspiring to learn of the changes within each country, in the ways people are represented in planning, and how people are being listened to in the design and delivery of services. The accuracy and quality of those services is under continual development and is not stopping at the conclusion of this project. Indeed, over the coming months there will be an international intercomparison of AI-based nowcasting methods making use of the data and case studies collected in our king-size testbed.

It has been a pleasure and privilege to work with this group of people and I look forward to our interactions and partnerships continuing in future.

Doug Parker
University of Leeds

At a glance

During the king-size testbed, between 1 October 2024 and 30 April 2025, nowcasts were successfully issued throughout the duration of the rainy season by the respective weather services through their existing communication channels.



ZMD sends nowcasts covering the whole country to Kanyama. Other improvements in Zambia include adding observational data in the regular agro-meteorological bulletins, and issuing voice notes in Nyanja during the testbeds.

INAM sends nowcasts to Boane and other groups, but covering the whole country. During the testbeds, INAM also issued voice notes in Changana.

SAWS sends nowcasts to Katlehong, covering Katlehong.

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In addition, the project has successfully raised awareness of, and demand for, weather information (forecasts, advisories and nowcasts) through intensive and sustained training sessions, including using dedicated community mobilisers to act as champions in Boane, Kanyama and Katlehong.

Notable outcomes to date include close partnerships with INGD in Mozambique (who are partnering in many of the workshops) and increasingly with DMMU at provincial level and the local government structures in Zambia.

- 435** Additional people have been involved in the co-production process over the last year.
- 757** Community members (388 men, 369 women) indicated they were better able to use weather information owing to participating in workshops during the year.
- 40** Women- and disability-focused organisations, including media, across all three countries, added in year two to the existing 28 organisations to participate in one or more co-production and testbed co-design workshops and sign up for forecasts and/or nowcasts from the respective met services.
- 28** Additional forecasters who participated in the 2024/25 training programme.
- 193** WhatsApp group members in Kanyama, Zambia.
- 89** WhatsApp group members in Boane, Mozambique, (including representatives from Matatuine and Namaacha).
- 75** WhatsApp group members in Katlehong, South Africa.

The EWSA project has made significant progress in enhancing early warning information through training of forecasters on nowcasting and forecasting tools, training and engagement of community members, co-production of forecasting services between these groups, and regional collaborations.

Training sessions include workshops on the Common Alerting Protocol training (CAP), pre-testbed training, and improving forecaster skills and community engagement. Advocacy/engagement events in all three countries provided awareness and high-level stakeholder support, media attention, and commitment to early warning information.

Key impacts include increased knowledge, accessibility and trust in weather forecasts, particularly among marginalised groups with particular focus on persons with disabilities, women and children.

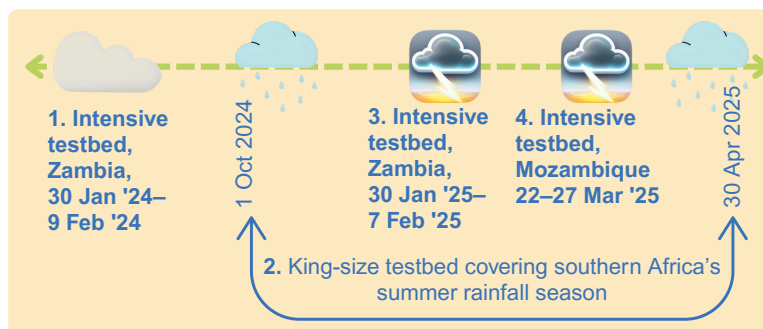
The implementation of voice notes in local languages and user-friendly forecast formats directly addressing community needs and strengthening engagement with early warning information, is one example of innovation arising from co-production.

The introduction of impact-based forecasting and tailored nowcasting products has enhanced decision-making at both institutional and community levels. The use of the appropriate, accessible language and easy-to-understand imagery has further contributed to enhanced understanding.

A triumph of testbeds

The WISER EWSA team gathered in Lusaka, Zambia, from 30 January to 7 February 2025 for a 'testbed' during which they sought to improve forecasting efforts in southern Africa while disseminating relevant and life-saving weather forecasts and severe weather warnings to vulnerable communities.

Six weeks after the intensive testbed in Zambia (with centres in Mozambique and South Africa), the team gathered in Maputo, Mozambique, for WISER EWSA's fourth (see image below) and final testbed with centres also in South Africa and Zambia. Both these intensive testbeds occurred within the timeframe of the king-size testbed. Dubbed T2-Z and T2-M, these events would have run as one continuous intensive testbed were it not for the continuing political instability in Mozambique in January.



Dr Itzel San Roman Pineda, testbed co-lead at the UK National Centre for Atmospheric Science at the University of Leeds, said, "We have seen the meteorological services in the three countries – INAM (Mozambique), SAWS (South Africa), and ZMD (Zambia) – increasingly taking ownership of nowcasting processes, issuing nowcasts independently and expanding their reach beyond the initial project scope. This highlights the growing confidence and capability of forecasters in interpreting models and operationalising nowcasting."

Another lesson concerns the significant challenge of effectively disseminating nowcasting messages. With severe storms developing rapidly, or changing their path without warning over the space of a couple of hours, it's vital that messages and updates are sent quickly. This includes ensuring nowcasts are issued with enough lead time and clarity for users to take appropriate action.

Diversifying communication channels (e.g. by combining digital platforms with traditional media such as radio) helps ensure broader coverage and accessibility. INAM in Mozambique, for example, has successfully expanded the reach of nowcasts nationally by disseminating them via WhatsApp, radio, TV, and SMS. Additionally, it has tailored communication to diverse audiences by translating messages into local languages.

A significant observation includes that sustaining nowcasting processes during prolonged or recurring weather events is resource-intensive. Issues such as a lack of stable internet, power, and access to data hinder the efficiency of forecasters, whereas further down the value chain, low-cost access to a variety of communication channels for both suppliers and users of warnings merits improvement.

Developing business models and resource strategies, including human resources, that ensure long-term sustainability for nowcasting is critical.

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To this end, the intensive testbed programme featured a workshop discussing the preliminary estimates of the socioeconomic benefit potential associated with regular supply of EWSA-based warning services, and the costs of delivering a service which can realise those benefits.

Delivery of short-range forecasts and nowcasts needs (but currently lacks) sustainable business models in Africa and creating these will be a landmark for the continent.

Project partner, Dr Adriaan Perrels of Tyrsky Consulting in Finland, explained, "The WISER EWSA project are producing estimates of socioeconomic benefits of these warning services in the participating countries. In conjunction with the socioeconomic benefit estimation, the project also assesses options for resourcing of the (extra) cost of the concerned services throughout the entire value chain of forecasting, warning, preparing, and responding. We are investigating several – possibly complementary – options for resourcing the service provision in Zambia after the EWSA project ends." (Read more about this work on page 4.)



Observations, weather product exploration, synopsis, nowcasting, evaluation, and sharing lessons learnt – all this happened here where the technical team of meteorologists and forecasters from the UK, Mozambique, South Africa, Zambia, and Malawi gathered.

WISER EWSA project extended testbed in southern Africa

Taken from a [blog](#), posted by Leeds University student Kasia Nowakowska



From left: Kasia Nowakowska and fellow students Greg Dritschel and Alexander Lewis.

Following the success of the first intensive testbed, which ran for two weeks at the end of January 2024, an extended testbed was launched to cover the entirety of the rainy season in southern Africa, from October 2024 to April 2025.

During this period, experienced forecasters monitored extreme weather and potential impacts to decide whether an intensive nowcasting event (INE) will be declared.

Each day began with a briefing meeting where forecasters from each country reviewed the synoptic forecast and discussed the likelihood of an INE in the upcoming days. Nowcasting all weather at all times isn't feasible, so this meeting allowed forecasters to focus their energy and resources on high-impact events.

When an INE was declared, a dedicated forecaster began nowcasting using tools such as NWCSAF's convective rainfall rate and rapidly developing thunderstorms products.

The forecaster sent six-hour outlooks and two-hour warnings through various channels including text messages, radio alerts and the FASTA app. This continued until the event subsided so users were kept aware of the intensity of the event and the impacts as it developed.

Feedback was collected from users in three community hubs: Boane in Mozambique, Katlehong in South Africa and Kanyama in Zambia. This feedback included the severity and the impacts of the weather event which were discussed in a post-INE review meeting alongside evaluations using rain gauge data and various nowcasting tools.

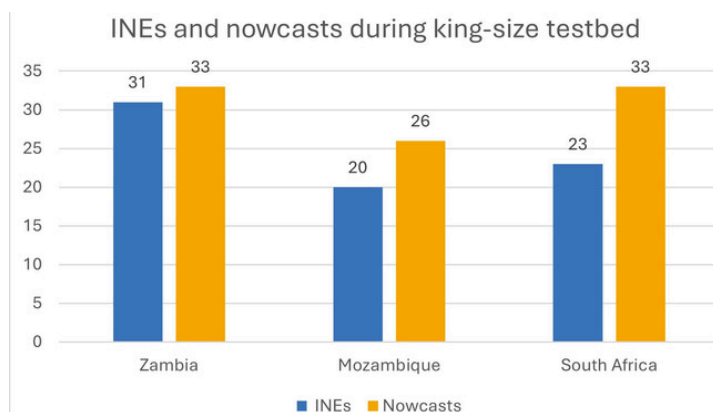
The extended testbed has provided a valuable opportunity to integrate nowcasting into daily operations. The daily commitment made by forecasters ensures nowcasting resources are focused on high-impact weather events, delivering timely, action-based forecasts to those who need them.

A group of University of Leeds PhD researchers joined the intensive testbed in Zambia during January/February. Read about their experience [here](#).

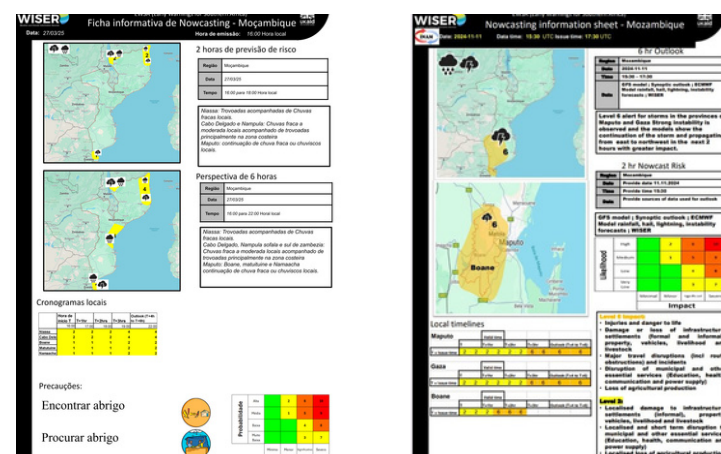
Nowcasts issued during king-size testbed

74 INEs were held during the king-size testbed.

92 Nowcasts were issued during the same period.



Below: Examples of nowcasts issued by INAM in Mozambique using the nowcast template developed during the project.



Below: An example of a Mozambican nowcast shared as text

11/11/2024 Previsão válida para 2 horas O INAM prevê a ocorrência de chuva moderada localmente forte acompanhada com trovoadas em Boane. Impactos: inundações urbanas, estradas escorregadias. Recomendações: ficar em locais seguros face as chovas e trovoadas.

Literature review on early warning services and their value in southern Africa

This literature review aimed to gather comprehensive information on the evaluation of the effectiveness of existing and proposed weather and climate services, with special attention to the realised and potential socioeconomic benefits and associated supply and use costs. The overall picture is that extensions of and improvements to weather services in sub-Saharan Africa produce very significant benefits. **These may be expected to surpass the costs of provision many times.** Since this prospect seems to apply by and large globally, one may even wonder to what extent ex-ante economic assessments of new or improved services are actually useful. Instead, the analytical underpinning of the investment could be reoriented towards ensuring good quality of the services throughout the value chain. In turn, this suggests that value-chain-based ex-post evaluations could be more useful alongside occasional focused ex-ante evaluations. The Literature Review will be available on <https://www.metoffice.gov.uk/ewsa-news> in due course, or email kaisa.juhanko@fmi.fi.

Benefits of EWSA-based services in southern Africa exceed over ten times their costs

By Adriaan Perrels, Tyrsky Consulting

Preventing casualties and misery typically belongs to the core responsibilities of a government. In that respect the benefits of nowcasting and early warning deserve in the first place to be judged in terms of how the human condition gets improved through less fatalities, less injuries, less misery, less fear, and more trust in the future, without worrying directly about the resource use of such services.

The economic significance of the benefits of nowcasting and early warning services merits nonetheless attention. By getting an understanding of the relation between the level of service provision and the corresponding level of expected benefits, decision-makers are better informed to allocate the right amount of resources to the involved tasks. In many developing countries that still tends to be too little rather than too much. Yet, at the same time, one has to realise that many public services in developing countries, such as healthcare, education, and transport networks, are under-resourced, since the competition for scarce resources is fierce. Even if foreign aid for investments is added to the domestic financing base, there is a tentative maximum rate at which resourcing can be added to public service provision, due to extra staffing and maintenance cost. Therefore, we like the estimated benefits of a new public service to exceed many times the estimated costs.

For Zambia and Mozambique more precise estimates of expected benefits could be generated. For South Africa, the results are based on a rescaling of the benefits of the other countries, accounting for differences in population size and wealth level, and exposure.

Figures 1 and 2 show results for the final (third) implementation stage, which may be achieved after six to seven years. The two left-hand bars show the situation where responsiveness to the warnings would not increase compared to the baseline observed in the pilot phase. The two right bars show the expected situation when awareness raising and good access to the service is fulfilled nationwide, and thereby responsiveness has risen from 24% to 37%. Figure 1 concerns benefits for rural users in Mozambique and figure 2 shows benefits for urban users in Zambia. The aggregate annual benefit for Mozambique and Zambia together is estimated at 2.8 million US\$. The contribution for Mozambique is probably most underestimated.

For both figures, to convert to global currency, the coarse average of the last two years could be used: 1 US\$ = 25 Kwacha; 1 US\$ = 63 Metical; and 1 US\$ = 17.5 Rand.

For South Africa, higher figures result (around 30 million US\$) due to the larger population and much higher wealth level. Yet, that estimate is appreciably cruder than for Mozambique and Zambia, and might be somewhat overestimated.

The benefit-cost ratios for Zambia and Mozambique are practically always above 10. This supports the advice that it makes economic sense for these countries to adequately resource the introduction of these services, albeit in cooperation with foreign financiers for some of the heavier investments.

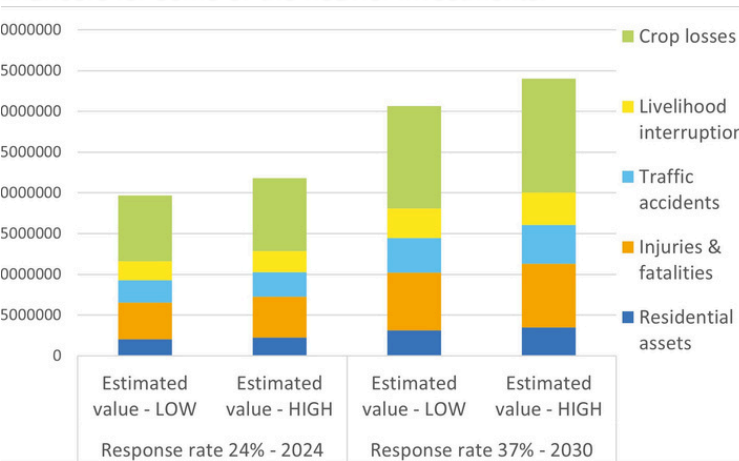


Figure 1. Estimated benefits of EWSA-based nowcasting and early warning for rural areas in Mozambique at current (left) and future response rates for the matured implementation phase (in local currency).

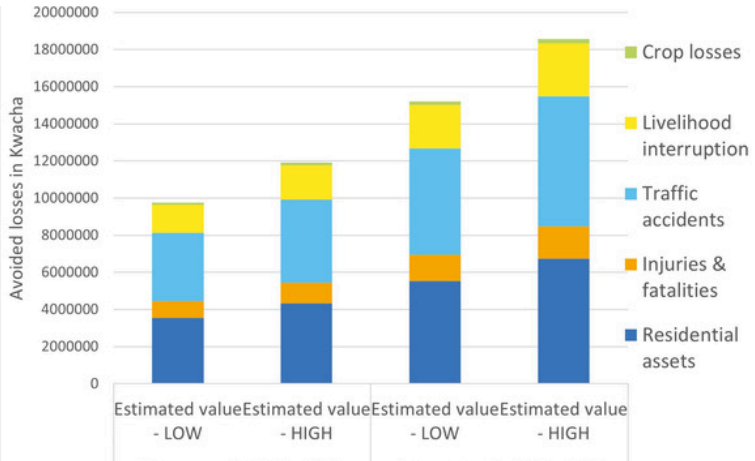
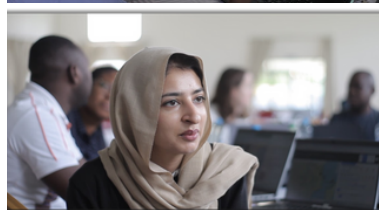


Figure 2. Estimated benefits of EWSA-based nowcasting and early warning for urban areas in Zambia at current (left) and future response rates for the matured implementation phase (in local currency).

Scene around Lusaka and Boane



From the top: Konga Ray Makayi, ZMD Forecaster, explains what is happening at the synoptic table during the testbed. Jawairia Ahmad, Research Associate with the UK Centre for Ecology and Hydrology, shares how the nowcasting table works – using data gleaned by her team and information from the synoptic table. James Bassford, Post-graduate Researcher at the University of Leeds, concludes with an overview of the evaluation table where an earlier nowcast is compared to the best available observations for the area to assess the success of the nowcast.



Satellite Disaster Management Committee (SDMC) members shared their ideal nowcast formats with the technical team, considering visuals and language used.



Adriaan Perrels of Tyrsky Consulting in Finland leads a workshop on the potential socioeconomic benefits of nowcasting services.



Community observers and mobilisers share their inputs during an exercise of critiquing different examples of nowcasts sent out by the three countries.



INAM forecasters hard at work exploring the different products to give the best observations for spot-on nowcasts.



A stakeholder day held during the testbed in Maputo including the media and intermediary organisations.



Community mobilisers meeting in Umpala.

Story of change: Collaboration to reduce flood risk

By Katharine Vincent, User Engagement Lead



From left: Marita Monjane Saraiva, Katharine Vincent, and Gilda Monjane strategise during their focus group meetings in Boane.

The win

Connections brokered between the ARA-Sul dam managers at Pequenos Libombos dam and community mobilisers in Boane, enabled the sharing of daily information on dam levels on the Whatsapp weather group.

This means of communication can also be used to provide early warning of rapid dam discharges for community mobilisers to circulate the message within their communities to enable people to take risk reduction measures.

Getting there

Local disaster management committees and community members, with a focus on people with disabilities, have been trained to be community mobilisers in Boane. Access to weather information from INAM over the last two years has been widely appreciated.

However, as well as rainfall and other immediate atmospheric conditions, Boane communities experience flood risk as a result of proximity to the Pequenos Libombos dam, which is fed from rivers in South Africa and eSwatini and used to supply water to Maputo.

Although notice of dam discharges is made in daily media, there are often circumstances that require decisions to open sluice gates at short notice, yet there was no way of providing early warning of this to downstream communities such as Boane.

Knowing that flood risk from dam overflow is a hazard to communities, in April 2025 the WISER EWSA team approached the dam management and shared background on the community mobilisers and how they use their local networks to share early warning information.

The dam director from the regional water authority (ARA-Sul) identified the community mobiliser channel as a promising way to provide early warning of rapid dam discharges to reduce risk.

After an introductory meeting of the community mobilisers and dam staff in May 2025, dam staff were added to the WhatsApp group and, as of 26 May 2025, are sharing daily water level information. They will use the same channel to share early warning of rapid dam discharges as these arise.

This action stands to enable community members in Boane to reduce flood risk. Flood risk is significant in Boane, reported in the baseline user needs survey by nearly 100% of men and women as occurring often (more than once per year), and the dam discharge-related flooding is often highly impactful as it comes without warning and involves large volumes of water. Receipt of early warning information will enable lives to be saved when the dam is discharged.

Towards sustainability: Integrating community members into disaster risk committees

In South Africa, the local non-profit organisation (NPO), Wings of Change, which supports the elderly, has been integrated into the project. The NPO has adopted the EWSA community observers and established a sub-group focused on weather, climate, and environmental issues in Ekurhuleni. Two of the volunteers from this group will lead these initiatives moving forward, ensuring that the work continues after the project's completion. Additionally, the Ekurhuleni Disaster Management team, which conducts outreach activities twice a week, has begun integrating EWSA promotional materials such as posters and pamphlets into their initiatives, helping to ensure ongoing awareness and engagement. These efforts foster a sense of ownership and continuity, ensuring that the knowledge shared during the project will continue to benefit communities long after its conclusion.



The Katilehong team and the Ama Gangsters (a group of elderly people who formed and lead an NGO, Wings of Change, focusing on support for the elderly) with the educational material handed out.

In Mozambique, the integration of community members into INGD (Instituto Nacional de Gestão e Redução do Risco de Desastres) was a highlight as this ensures that local knowledge and community participation are embedded within national disaster risk reduction strategies, creating a long-term framework for early warning dissemination and disaster preparedness. By formally involving community observers and mobilisers in the INGD's structure, the project is institutionalising its impact and ensuring that early warnings remain accessible, relevant, and community-driven beyond the project's lifespan.

Additionally, the project is leveraging the formation of Mozambique's new government to successfully integrate EWSA's ideas into national policies. The Director of Environmental and Social Safeguards at the Ministry of Agriculture, Environmental, and Fisheries has shown a strong commitment to incorporating early warning systems into national disaster management strategies.



People being evacuated from a vulnerable area in Boane. In coordination with INAM, the INGD issues early warnings, using the information produced by INAM, to share at district level and with communities and all relevant institutions.

In Zambia, the involvement of SDMCs in testbed activities and community initiatives has strengthened their capacity to support early warning dissemination and disaster response. They now have a deeper understanding of their communities, enabling them to tailor interventions more effectively and ensure that no vulnerable groups are left behind.

Their continued engagement in testbed preparation and implementation makes them key stakeholders in sustaining EWSA's impact at the community level.



A SDMC-only meeting where the team had the opportunity to learn from their counterparts in Katilehong and Boane about the various strategies employed to reach more community members.

Services to continue

The National Meteorological and Hydrological Services (NMHSs) are mandated to provide forecasting services to their country's people. These forecasting services include early warnings against adverse weather to save lives and property. Discontinuation of the work and progress gained through the WISER EWSA project will result in a loss of credibility of the NMHS and it will be difficult to resurrect the same participation levels from stakeholders in future. Furthermore, a loss of trust, built up in weather information from community members who now expect to receive forecasts and nowcasts, will follow.

However, WISER EWSA does expect the services to stop at the culmination of the project. Each national weather service has shown evidence of change in the capabilities of its staff, its operational procedures, and its ambition to maintain and expand the nowcasting services developed.

The integration of nowcasting procedures at NMHSs operationally, requires an investment in resources (human as well as infrastructure), but for the most basic enhanced nowcasting services these resources can be met from existing commitments. All three weather services in the project are planning to continue the short-range forecasting and nowcasting services after the end of the project, focussing on the urban communities who have taken part in the project, and all three intend to make efforts to expand the services to other geographic areas and other sectors.

Enabling the sustainability of early warning benefits, the NMHSs have been working on changes in their respective workflows and the structures of forecasting operations to accommodate nowcasting and early warnings. They have also been developing Standard Operating Procedures (SOPs) and instructions for early warning using nowcasting throughout the project and will continue to enhance these SOPs to suit each respective weather office's circumstances.

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The teams are working to increase CAP messages on global monitoring platforms, and work proceeds to ensure the continuation of services by, for example, amending shift schedules. CAP training was provided and tested during the testbeds and must be operationalised by the local forecasters when they issue impact-based forecasts/nowcasts. Twenty-four forecasters wrote an online assessment test before the intensive testbed in Mozambique with another opportunity offered in June for those who need to repeat the test. Six groups prepared case studies and presented their work to a panel comprising representatives from the University of Leeds, the WMO, EUMETSAT, and SAWS. The presentations were formally assessed. Participants who pass both the online theory test and the case study component will receive a certificate of attainment.

Giving voice to value

The recent intensive testbeds have elicited repeated requests from community observers and intermediary organisations for the work to continue post-project. The desire is for more communities to be targeted. Members from the community (not observers) also expressed a desire for more training and more information to be made available.

What also stood out is the mutually beneficial engagement between the forecasters and the community observers. Both benefited tremendously from the co-production interaction. Community observers gained a better understanding of the technical aspect of the work and the technical colleagues gained better insight into the real-world challenges of vulnerable communities. We share a snapshot of what some had to say.

"My mentality changed after I got involved in the WISER Project. At the beginning, I didn't understand anything about weather and no interest. But from the time I joined and I got involved in weather forecasting, teaching me how to explain the weather, I got more interested." Female, Kanyama community observer and now SDMC member.

A female community member, Katlehong, joined the community observer team in August 2024 – first because there was food. Having attended several meetings, she has **developed an interest in learning about the weather and making a difference where she stays**. She now assists with disseminating posters, and making appointments at schools for awareness raising. She offered her house to place one of the early warning flags with her being responsible for raising and lowering the flag.

The achievement is a great achievement, ... I can say **people in Kanyama have started embracing weather information**. ...two years ago, when the project was not introduced in Kanyama, people were not embracing the weather information. But this time, we see a lot of people ... saying, we need this weather information because we suffer a lot, so this is a high time that we make sure that we embrace weather information and help others. So that's a great achievement to us." (Male SDMC, Kanyama)

Information has improved my life, because I need to know the weather information for the entire week so that **I may make each and every programme nicely**. Before I joined this, I had no idea, because I was just planning without any weather information. So I find that ... where you find rain or you find that it's a disaster, but current right now, **it cannot become a disaster, because I'm having weather information that comes from Zambia and meteorological department, and I'm using the FASTA application**. So it helps me a lot." (male SDMC, Kanyama)

Katlehong community observers shared: "There is more to gain as we learn about our local weather. **People now want regular updates**, and we have become ... local weather champs. We would like to help support the project to not just end in Katlehong but [go] to other parts of our municipality and Johannesburg. We have helped people understand why weather information may not always be accurate." (Captured by community engagement lead, Miriam Murambadoro.)

"It has really helped me a lot and given me some knowledge. I have learnt more and **I am able to give that information to vulnerable people** who cannot afford to have that information. It has even changed the lives of some people, they are able to prepare themselves before the rain starts, they're able to protect themselves, ... and they are able to maintain their houses." Female, Kanyama, community observer and now member of the SDMC.

"Before WISER, people were not really following the weather, maybe a few farmers did. Even myself, I was not following it. **Now, after the project, I've seen the changes from ZMD. I recommend now that the project should teach more** ... so that we could see a lot of change. We used to face a lot of disasters, they [ZMD] would say it [the weather] will be so and then it wasn't, but now, after the project, I check every day and what they are posting is true." Male, Kanyama community observer and now member of the SDMC.

"I have a **neighbour who had a stroke, so when I receive a weather update, I'll go first to tell her. Now she likes to ask me a lot how the weather is going to be**, and to receive information on what will happen. She asks what will happen at certain times when she is planning to go somewhere, to know if it is likely to rain or not" (female, Kanyama)

"My mother is a business lady who sells maize. **I look at the forecast and I sometimes tell her 'don't go to the market today**, don't go for business because it's going to rain' and then it rains and she says, 'thank you for letting me know'." (female, Kanyama)

"The other experience...is being member of the part of the project. It has really **helped me to be more confident**, because sometimes...you go maybe in a big church, you stand in front you explain but, confidence, he was not much. But as we were moving around, trying to explain to people, I was really happy. Oh, great. In fact, I'm really happy, because it's it helped me a lot. Oh, great." (male SDMC, Kanyama)

"Over the past years the weather thing wasn't so accurate and people lost interest. **Over time, thanks to WISER EWSA, people are now interested**, the women are very much interested" (female, Kanyama)

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"I'm here to learn about weather and represent my fellow youths with disabilities to understand weather so they can protect themselves during disaster. The challenge ... is a lack of information, to access information in Braille and in the right format. Most of the information in weather is not accessible for them to read and understand. If I have an opportunity to be an advisor in terms of weather planning, it would be to have weather programmes in inaccessible format... and in our local language for those who have not been to school." Male, end-user organisation (Youth in Action for Disability Inclusion)

From some forecasters and project partners

"The WISER project is contributing greatly to my work. Initially, we used to produce forecasts that covered a full day whenever there was adverse weather coming through, we wouldn't say anything until the next day, but this time, because we have the WISER in place, it taught us how to do the nowcasts first and gave us a lot of products to use for us to see how the weather is changing, even in a short time. With that we are able to also communicate with the communities who are now trained. We have trained community observers. So when I send meteorological information, I know somebody will be able to interpret it correctly to the communities." Peggy Thole, Senior Meteorologist and Forecaster at Zambia Meteorological Department.

Nico Kroese (SAWS) acknowledged the efforts of the trainers who supported forecaster capacity-building during the king-size testbed and throughout the project. He highlighted how the extended format of the king-size testbed enabled the meteorological services to gain hands-on experience with nowcasting, even though they operate with different levels of capabilities and resources. This experience can be leveraged to support the expansion of nowcasting in the region.

"WISER is very important. WISER brings the outputs to forecasters, they train us in South Africa and Maputo and the third training in Zambia. We get the knowledge about the CAP, about the nowcasting; it is very important, it is increasing our capacity. We continue to make nowcasting in Mozambique and we want to extend into other provinces." Pedro Joao Mutumane, Forecaster at the Mozambican Institution for Meteorology (INAM).

One of the things WISER's doing is strengthen the capacities of the staff in the MET services. Our forecasters have been trained, have been introduced to new techniques of generating early warnings. They've been introduced to data sets that are useful to generating this early warning information at different time scales so that we can warn the communities. A critical aspect that has been done is strengthening the interface with partners and the EWSA community. So, co-producing this information, sitting down with the EWSA community to receive feedback in terms of how they want this information to be, how it should be packaged, how it should be disseminated to them, and what language it should be packaged in is very, very critical." (Mr Edson Nkonde, ZMD Director)

There are few socioeconomic benefit (SEB) studies from an African context. Evidence from other WISER projects clearly indicate that the benefits are larger than the costs for providing early warnings. It is hoped that more SEB research will come from Africa. Kaisa Juhanko, Finnish Meteorological Institute

Making (meteorological) music



Mr Rafael Bata performs 'Previsão do tempo para todos' for the WISER EWSA team. Ms Kátia Cumaio was the sign language interpreter.

Mr Rafael Bata is a well-known singer in Mozambique and an avid supporter of WISER EWSA.

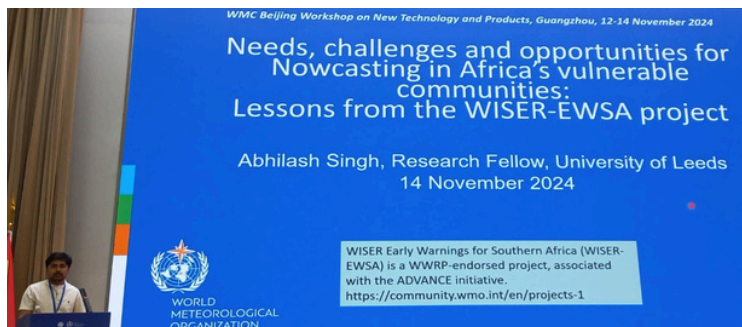
He has participated in the project and, as a person with a sight disability, has given valuable input regarding the inclusion of and engagement with people with disabilities.

In a project-first, Mr Bata has composed a song in honour of early severe weather warnings.

The song, *Previsão do tempo para todos* (Early warning for all), warns a friend, Fabião, to get out of a risky place, because it is going to rain. This friend, the lyrics caution, will cry and lose his belongings. Fabião is exhorted to get to a safe place with his family. "Early warning for all" is a refrain throughout the song as Fabião and his family are urged to run to a high area because heavy rain is coming. And as he runs, the lyrics say, he must remember the disabled, the elderly, and children.

Awareness raising and other adventures

Spreading the word



Abhilash Singh presenting on WISER EWSA at the World Meteorological Centre Beijing Workshop on New Technology and Products in Guangzhou, China.

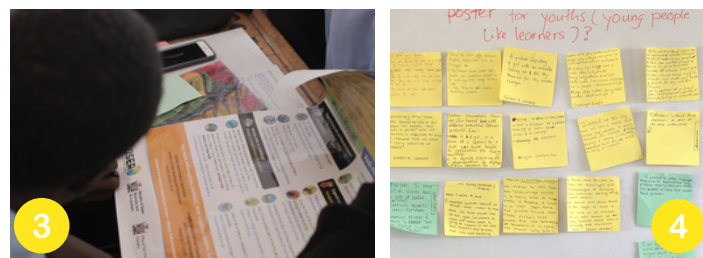


In Kanyama, the SDMC members (community observers before incorporation into the SDMC structure) visit churches to talk about the project and the importance of weather information. The team visited St Mary's Anglican Kanyama Parish on 4 May 2025.

Mr Elias Chihinga from the church shared [unedited], "... On behalf of Anglican Church I say thank u for coming and pls don't stop but educate others as well."

Continued on page 9...



Learner involvement



(3) Perusing the posters developed for awareness raising in the community, they also gave input into a classroom poster under development at the time, suggesting content that learners should have.

5 Are you ready for the weather?

Difference between weather and climate:

Weather refers to the atmospheric conditions of a specific place over a short time, typically a few hours. *The weather determines what you wear each day.*




Climate refers to the average atmospheric conditions over relatively long periods, usually 30 years. *Climate determines what clothes you have in your cupboard.*

Did you know:

Climate change causes changing weather patterns and extreme weather events which can affect people and their lives. People with disabilities and the elderly are often at the most risk.

If we know what weather to expect, we can prepare for it and save lives and property!

Where do we find out about the weather?

Apart from television, radio, and mobile phone apps, the South African Weather Service is a reliable source of weather information, including weather forecasts, impact-based forecasts, and nowcasts.

Nowcasting provides early warnings of possible severe weather from 0 to 6 hours.

South African Weather Service (SAWS): Phone: (012) 367 0041 / US\$D 1207297#
 @SAWeatherService
<https://web.facebook.com/WeatherService>

SAWS works closely with disaster risk management organisations such as Ekurhuleni Disaster Management:

Phone: 012 or 011 458 0911
 Ekurhuleni Call Centre: 0860 54 3000
 @EMInfo or @EEMM_Call_Centre
www.facebook.com/CityOfEkurhuleni

The atmosphere


Hot water vapour
Cool air
Condensation
Precipitation
Evaporation
Transpiration
Runoff

The water cycle


Water vapor is the most abundant greenhouse gas. It is the only gas that can be directly measured in the atmosphere. It is also the only gas that can be directly measured in the atmosphere. It is the only gas that can be directly measured in the atmosphere.

Top tips to prepare for the weather:


Thunderstorms







Flooding








Heatwaves




Remember to help others!



WISER
Weather and Climate Information Services

For more information on the WISER Early Warnings for Southern Africa project, visit <https://www.metoffice.gov.uk/ews-africa>



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(4) Their contributions travelled back to South Africa where the classroom posters (5), translated in the main local languages – Nyanja (Kanyama), Portuguese (Boane), isiZulu (Katlehong) – were finalised and distributed in the three target countries.