

REPORT of the RIFT JET STUDY II TRAINING and LAUNCH at the Kenya Meteorological Department (KMD), Nairobi on 26th-27th February and 1st March 2024

Introduction

The Turkana Jet is an equatorial low-level jet forming in East Africa carrying moisture from the Indian Ocean. Kenya Meteorological Department (KMD) officers working out of Marsabit, North West Kenya, were the first to identify these winds. The winds form in the Turkana Channel, between the Ethiopian Highlands to the northeast and Kenya Highlands to the southwest.

The RIFT Jet research is one of the deliverables of the 'REACH: Improving Water Security for the Poor' Programme, a collaboration between the University of Oxford, United Kingdom and the University of Nairobi, Kenya. In Kenya, the programme has established the Kitui and Turkana Observatories. The REACH Programme has developed a global research and impact strategy, recognising its progress and providing a roadmap for improving water security for 10 million people by 2024. REACH Programme has established science practitioner partnerships with government, private sector and civil society stakeholders in long-term, instrumented, and interdisciplinary observatories to understand and influence the most significant but uncertain risks. The Foreign Commonwealth Development Office (FCDO) funds the REACH programme that brings together a consortium of global water science, policy and practice leaders. Please visit [www.reachwater.org.uk] for additional details.

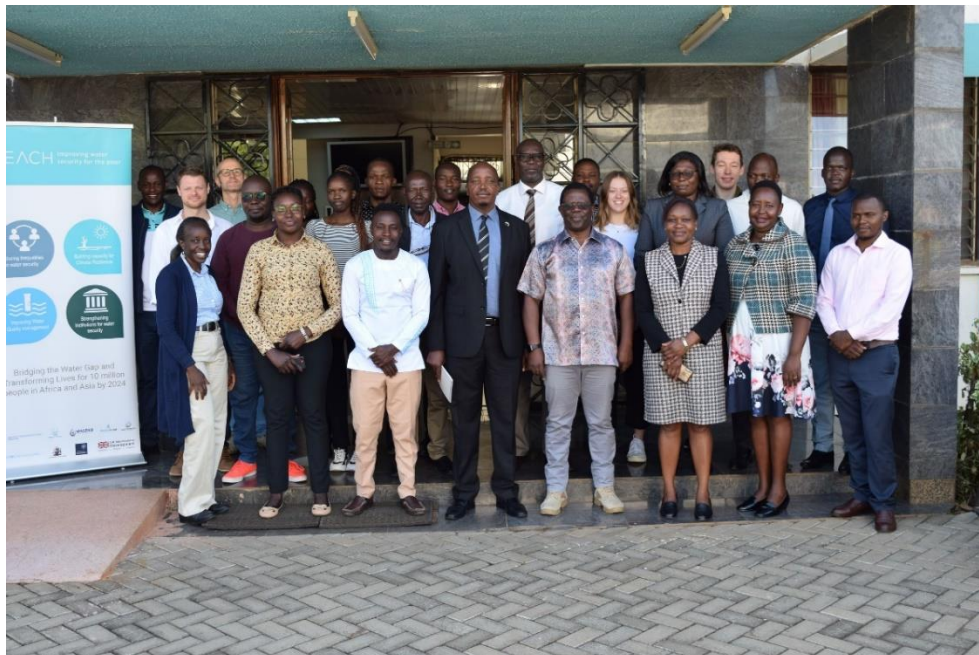


Photo 1: RIFT JET Training Participants at the Institute for Meteorological Training and Research (IMTR) within KMD. Photo by REACH Kenya

Training

Twenty-seven participants of the Radiosonde Investigation For the Turkana Jet (RIFT Jet) research from the Kenya Meteorological Department (KMD), the University of Nairobi and the University of Oxford gathered at the Institute of

Meteorological Training and Research (IMTR) for a one-and-a-half day training in preparation for the field observational campaign. Eight women and 19 men attended the training. The breakdown of participants' numbers by institutional representation follows:

Date	KMD	UON Students	University of Oxford	REACH Kenya
26 th February 2024	12	6	4	5
27 th February 2024	11	6	2	3

The Acting Director of the IMTR, Edward Muriuki presided over the opening event on behalf of the KMD. He celebrated the partnership with the two universities through the REACH programme and the opportunity to conduct research jointly while simultaneously building their staff capacity. The IMTR is a regional meteorological training hub that also conducts research. He expressed the organisation's willingness to continue conducting research in collaboration with the Universities. Senior staff from the IMTR participated in the training.

Prof. Gilbert Ouma presented an overview of the REACH programme and the importance of the RIFT Jet study in improving 'Masika' or long rains forecasting. Dr Callum Munday shared findings from similar studies in Western and Southern Africa, including an earlier study in Marsabit. The radiosondes monitor the vertical profile of the atmosphere, the winds, the temperature, humidity and pressure to improve weather forecasts. Dr. Sebastian Engelstaedter presented the technical practicalities of the exercise. All the participants had a chance to test-run the software and gadgets used in the RIFT Jet study in preparation for the fieldwork.

Weather Balloon Launch Event on 1st March 2024 at KMD headquarters in Nairobi



Photo 2: UON's Prof. Daniel Olago (l) and KMD's Deputy Director Charles Mugah (r) launch the weather balloon. Photo by REACH Kenya

On Friday, 1st March 2024, the RIFT Jet study partners in Kenya officially launched the first weather balloon to start the 'Masika' observational campaign within the KMD's headquarters. The KMD Deputy Director of Aeronautical Meteorological Services, Charles Mugah and the University of Nairobi's Prof. Daniel Olago presided over the event.



Photo 3: Charles Mugah addresses the research partners and media at the RIFT Jet study launch. Photo by REACH Kenya

On behalf of KMD, Mr. Mugah acknowledged the collaboration in undertaking the RIFT Jet study. He looked forward to utilising the data to test and improve their weather and seasonal forecast models. Prof. Olago underlined the importance of the research and the data to farmers, planners, the insurance industry and the water services sector.

Additionally, Prof. Gilbert Ouma emphasised that the study will evaluate whether increasing the frequency of atmospheric air monitoring would significantly improve weather forecasts. The KMD usually conducts ozone air monitoring once a day. The Intensive Observation Period will last 45 days from two sites in Nairobi and another in the field. Untethered balloons weighing 100 grams attached to radiosondes weighing 80 grams will be launched six times daily in Nairobi within 4 hours. Each balloon rises to a height between 17 and 25 kilometres.

Media Coverage

Kenyan media comprehensively covered the RIFT Jet study launch during lunchtime and prime-time news at 7 and 9 pm. The media coverage links follow.

1. Citizen TV – Kenya's TV station has a countrywide and East Africa-wide reach. <https://youtu.be/faTC5PEblmg?si=khsEhws2yDZHdVQW>
2. KBC TV is Kenya's national broadcaster - <https://www.youtube.com/watch?v=tLcLTMv4oIY>. KBC Channel I radio also carried this news piece.
3. Kameme TV – <https://m.youtube.com/watch?v=HsLzs5FgqOI> carried a feature in Kikuyu regional TV widely listened to in the Mt. Kenya region and countrywide by Kikuyus. They are the largest group in the country.

The general description of the feature follows: The Kenya Meteorological Department has launched a weather balloon to improve future weather forecasts. After being on the receiving end from farmers and Kenyans of all walks of life over conflicting weather forecasts, especially the just concluded El Nino rains, the department is collaborating with learning institutions to improve their weather-beaten equipment and embrace technology.

Such collaboration is with the Institute of Climate Change and Adaptation (ICCA) of the University of Nairobi and the School of Geography at the University of Oxford to launch the first weather balloon to start the 'Masika' Radiosonde Investigation. "The problem we have with our forecasts is that they are inaccurate. The data is not a lot because we have very few functional stations," Prof Gilbert Ouma from the Department of Earth and Climate Sciences at the University of Nairobi said.

Prof Ouma pointed out that the March-April-May rainfall season is critical in the country as it is crucial for farmers and the agricultural sector. To improve the forecasts for the period, the Kenya Meteorological Department has launched the weather balloon, part of an Intensive Observation Period that will last 45 days, starting 1st March 2024.

4. Radio Citizen FM is an affiliate of Citizen TV listened to in Nairobi and its environs.



WhatsApp Audio 2024-03-02 at 05.40.27.mp3

5. The Star Newspaper is the third largest national Newspaper - <https://www.the-star.co.ke/news/2024-03-04-more-reliable-forecasts-expected-as-weather-balloon-now-launched/>

6. Blogs

<https://news.scienceafrica.co.ke/precise-weather-prediction-set-to-boost-kenyan-agriculture/>

<https://big3africa.org/2024/03/02/revolutionizing-weather-forecasts-kenyas-meteorological-weather-balloon/>