

Mtafiti Monthly

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KMFRI releases 2025 tide predictions for Mombasa and Lamu regions

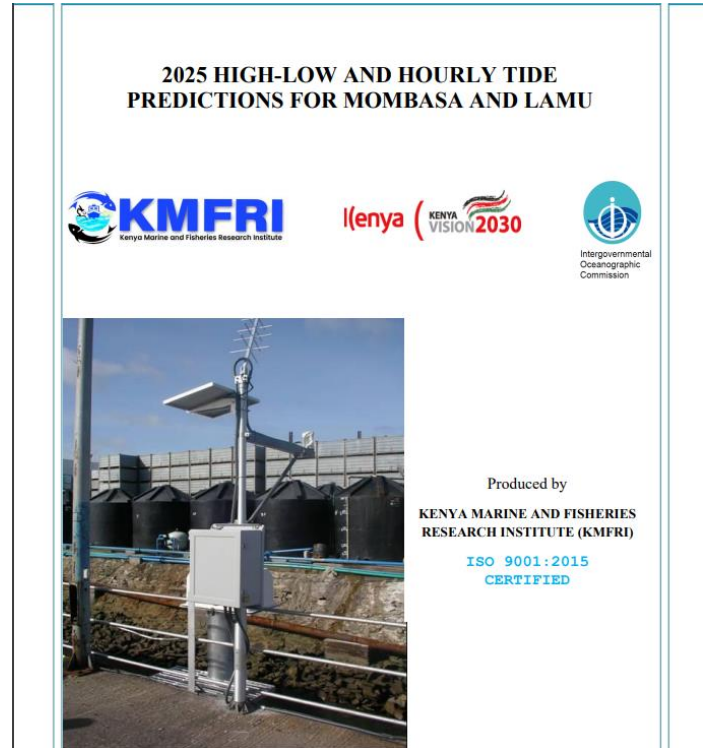
Time and tide wait for no man – not even for recreational beachgoers and surfers! It is for this very reason that Kenya Marine and Fisheries Research Institute (KMFRI) has disseminated the 2025 tide tables for the Mombasa and Lamu regions to get the most out of the ocean, with the predictions being in form of high-low listings and hourly values.

Time series of sea level observations from the Mombasa and Lamu tide gauge stations were used as input data to make the predictions. The two gauges that are being managed by KMFRI are installed at Liwatoni jetty in Kilindini harbour, Mombasa and Lamu jetty respectively.

“These predictions are generated using a special software (T_TIDE) developed by University of Hawaii Sea Level Centre (UHSLC). The software runs on MATLAB platform,” says KMFRI senior research scientist Dr Charles Magori.

Researchers Athman Salim and Damaris Mutia domiciled in the Oceanography and Hydrography department played a key role in packaging the data.

Both Mombasa and Lamu are principal stations on the Global Sea Level Observing System (GLOSS), a global network of tide gauges for monitoring climate change induced sea level rise. They are also dedicated components of the Indian Ocean Tsunami Warning System (IOTWS).



Available at www.kmfri.go.ke

Hourly data generated by the two stations can be used to either confirm or cancel a tsunami warning throughout the region.

The Intergovernmental Oceanographic Commission (IOC) of UNESCO developed a Global Sea Level Observing System (GLOSS) program in 1985 to address the growing concern about the rise in mean sea level around the globe.

The objective of GLOSS was to provide high quality standardized data from which valuable sea level products can be produced for international oceanographic programmes such as World Oceans Circulation Experiment (WOCE), and regional research programmes, as well as for practical application on a national level.

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Kenya is one of the countries participating in GLOSS and has already received support and assistance in terms of training her specialists, and provision of equipment through IOC.

What is a tide and why do we need tide tables?

Tides are simply changing water levels in the sea, and can also be defined as the alternate rising and falling of water levels classified as either high or low.

High tides occur when waters rise and move out of the sea and form what appears like 'crests of water in the sea' and low when waters fall and move back to the ocean. The coast experiences a high tide when the waves or crests reach the highest point. Waters are shallow during the low tide and deep during the high tide.



Tidal information is important for scientists on research mission

Governments across the world measure tides daily, and packaging of this data results in the production of tide tables for use by ocean stakeholders.

Tides rarely affect activities in the open ocean and in lakes, so tables are designed for coastal areas, inlets, estuaries and bays.

According to NOAA, boats heavily rely on tidal information. This information is important because travelling on shallow waters, and narrow intercoastal waterways or under bridges is a risky venture for boat users.

Sea captains steering their ship under a low bridge, underestimating the range can be devastating.

On the other hand, tide information helps fishermen map their fishing zones to increase catches because some species congregate when water is either high or low. Accurate predictions can therefore cause fishermen to reap big in their fishing venture.



KMFRI team collect trash along the beach during low tide

The tables are also vital in planning infrastructural projects in the coast region, coastal rehabilitation, beach cleanups and in disaster management. Many tourists use the tables for recreational pursuits.