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Monday, 11 March 2024

## **Moderate Tropical Storm “Filipo” currently nearing the coast of southern Mozambique, expected to affect extreme north-east South Africa**

As predicted in the media release issued by the South African Weather Service (SAWS) yesterday, the weak, embryonic tropical low-pressure system located between Madagascar and mainland southern Africa (Mozambique Channel) experienced significant intensification overnight, attaining a “Moderate Tropical Storm” status, which is associated with average winds of 63 to 89 km/h. Consequently, it has now been elevated to a “named” system, namely Moderate Tropical Storm “Filipo”. The storm is expected to affect mostly the southern parts of Mozambique, but some of its effects will also be felt over the extreme north-eastern parts of South Africa.

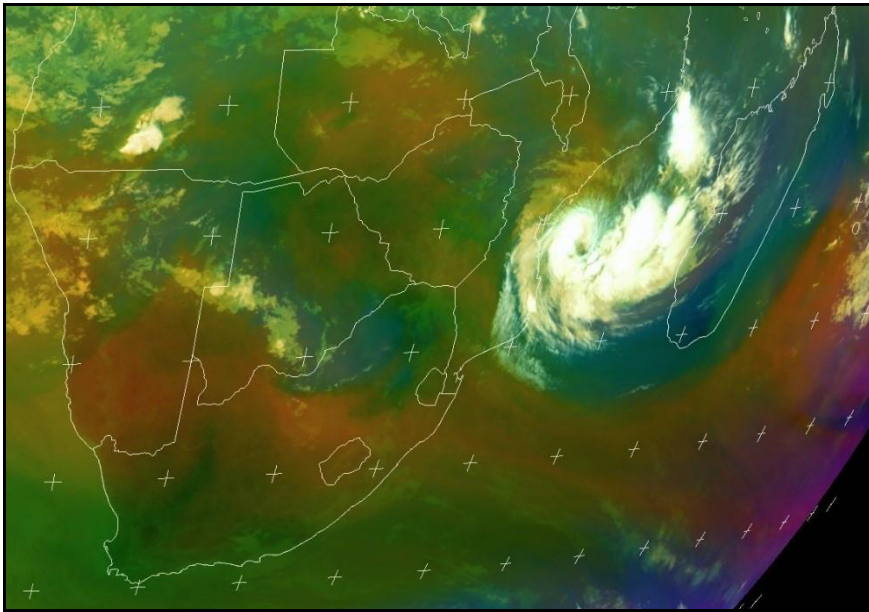
A tropical low-pressure system can be defined as a less dense air mass that is usually wetter and warmer than the surrounding air. Such a system can cause the formation of clouds and storms.

At 08h00 SAST (08h00 South African Standard Time) today, Filipo was positioned just seawards off the southern Mozambican coastline (see Figure 1), moving westwards at a modest rate of 11 km/h. As the system moves closer to the coastline south of Beira, the potentially hazardous phenomenon of storm surge will become more likely. Recent modelling estimates by the Regional Specialised Meteorological Centre (RSMC) in La Reunion suggest that storm surge is likely to elevate local sea level by as much as 50 cm (half a metre), especially along the coastline extending from Beira, southwards to Vilankulos.

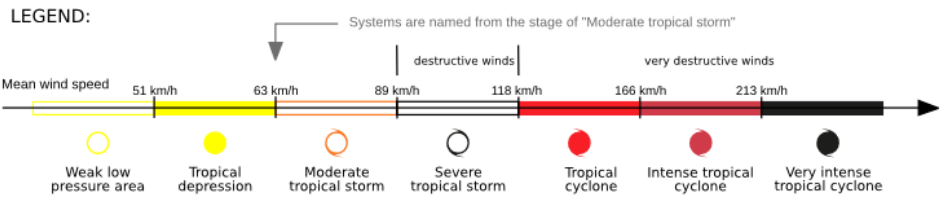
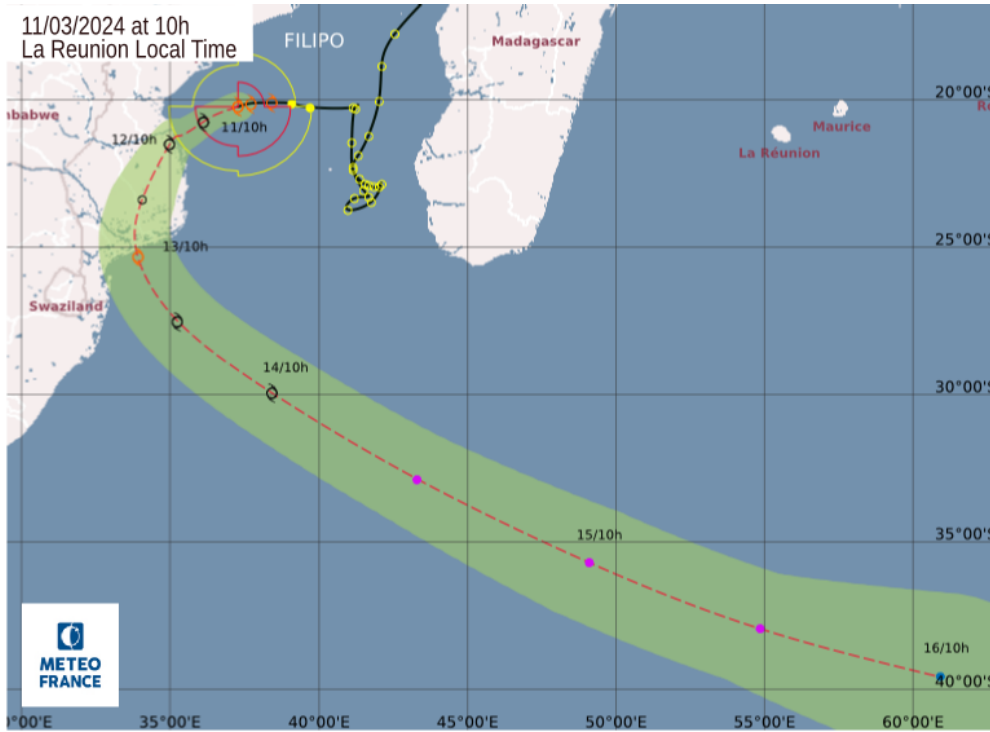
Moreover, it is estimated that Filipo will make landfall this evening on the Mozambican coast at or near Inhassoro, north of Vilankulos, having further intensified to a “Severe Tropical Storm”, associated with average winds between 89 to 118 km/h. Therefore, for much of the southern Mozambican coastline, a high risk exists for weather-related damage from a combination of torrential rain, strong, damaging winds (with wind gusts well more than 100 km/h) as well as storm surge near the coastline.

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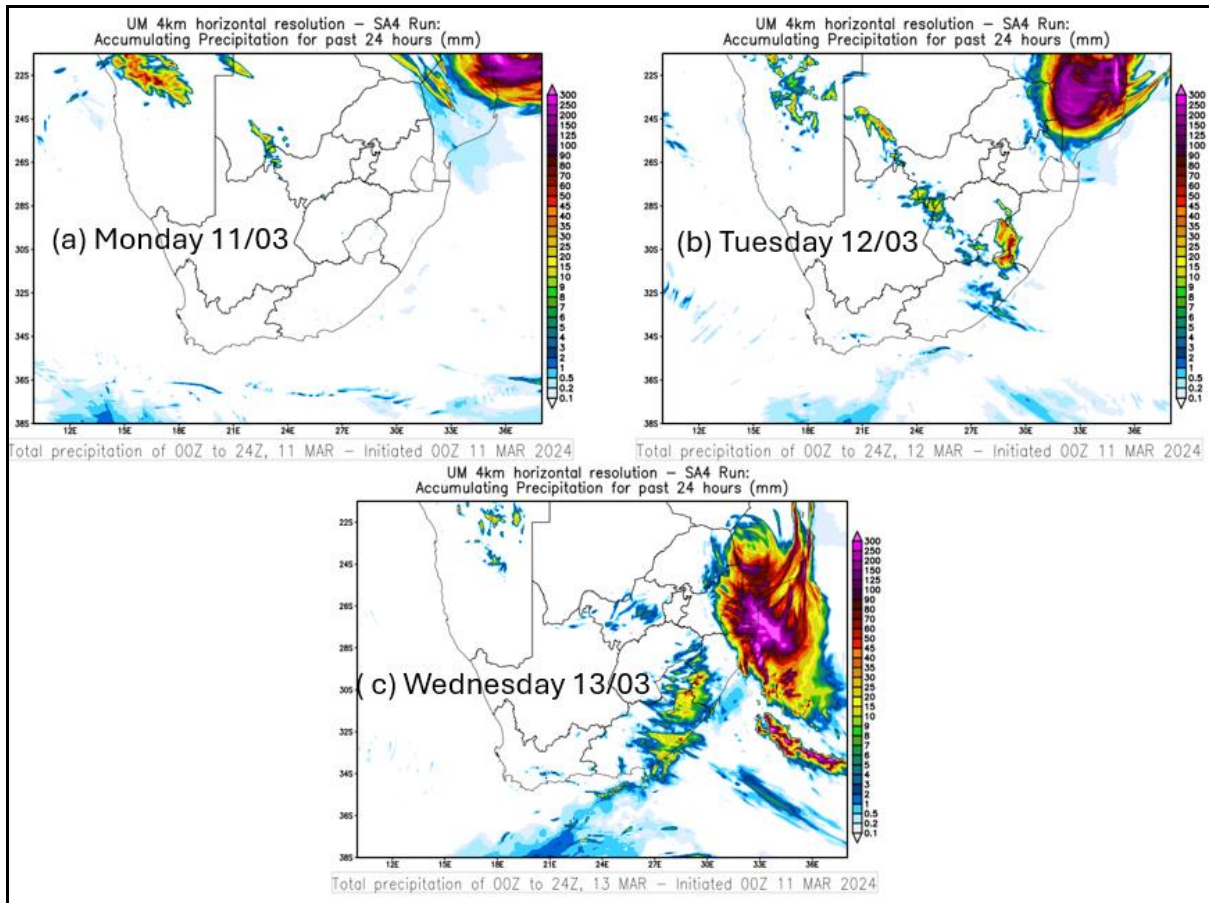
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**Figure 1:** Meteosat “Airmass” RGB composite satellite image at 09h00 SAST Monday, 11 March 2024 indicating the current position of the system, seawards of the central Mozambican coastline. Source: Eumetsat 2024.



**Figure 2:** The latest projected track for “Filipo” issued by RSMC La Reunion. Following landfall this evening, “Filipo” will rapidly follow a curved track, passing inland through southern Mozambique on Tuesday, 12 March 2024, to exit near Xai Xai early in the morning of Wednesday, 13 March 2024. Source: RSMC La Reunion (MeteoFrance). Note: all times are in Reunion time, SAST+2hours.



**Figure 3:** A sequence of 24-hour Numerical Weather Prediction (NWP) modelling, indicating predicted precipitation (mm) for the 3-day period extending from today, Monday, 11 March, through to Wednesday, 13 March 2024, when the system will be exiting southern Mozambique. NWP output is based on the Unified Model (UM) at a 4 km resolution, run in-house at the South African Weather Service (SAWS). Heavy to torrential rainfall, varying between 100 to 300 mm per day (indicated by various shades of purple) are expected over southern Mozambique on Monday and Tuesday. Heavy rainfall is also likely over the southern lowveld of Mpumalanga, Eswatini and north-eastern parts of KwaZulu-Natal on Wednesday, as the system departs from southern Africa, back into the Indian Ocean.

As can be seen in the predicted rainfall of the Unified Model (UM) numerical weather prediction (NWP) output fields in Figure 3, there is a high risk for heavy to torrential rain, of the order of 100 to 300 mm per day (potentially an accumulation of 600 mm or more over two days) to occur over southern Mozambique on Monday, recurring on Tuesday as well as Wednesday, as the system moves briskly southward.

For South Africa in particular, various sources of deterministic NWP modelling have provided high confidence guidance to suggest that the bulk of the heavy rain, as least for today and tomorrow, will remain constrained to southern Mozambique.

Notwithstanding this, there is a moderate to high risk of heavy rainfall occurring over the lowveld regions of Limpopo on Tuesday and over the lowveld of Mpumalanga on Wednesday. For Mpumalanga especially, there is a risk of orographically-enhanced rainfall occurring along the eastern Escarpment region on Wednesday, when heavy rain and localised flooding may occur over the southern Lowveld (including the Kruger National Park), the neighbouring Kingdom of Eswatini as well as extreme north-eastern KwaZulu-Natal (KZN). Major rivers of the central and southern half of the Kruger National Park (KNP), such as, but

not limited to, the Olifants, Letaba, Sabie and Sand rivers as well as the Crocodile river in the extreme south of KNP are likely to be flowing very strongly, possibly in flood, from midweek onwards.

Similarly, the north-eastern extremity of KZN, especially the coast and adjacent interior northwards of Richards Bay can expect a spell of sustained, extremely heavy rainfall on Wednesday. The heavy rain will cease abruptly by Thursday, as the system leaves southern Africa and moves off into the southern Indian Ocean, east of South Africa.

The SAWS will continue to monitor any further developments relating to this weather system and will issue subsequent updates as required. Furthermore, the public are urged and encouraged to regularly follow weather forecasts on television and radio. Updated information in this regard will regularly be available at [www.weathersa.co.za](http://www.weathersa.co.za) as well as via the SAWS X account. @SAWeatherServic

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