

## Flooding in Zambezi

On 22<sup>nd</sup> January tropical storm Desmond made landfall in the province of Zambézia, Mozambique, causing heavy flooding most notably around Beira (Mozambique's 4th largest city) where Mozambique's Institute of Natural Disaster Management (INGC) opened five emergency housing centres to shelter an estimated 18,000 people affected by the flood situation. The unusual situation caused by the storm was also captured in satellite imagery acquired over the lower Zambezi delta on the 25<sup>th</sup> of January, and showing extended flooding in the Marromeu Wetland Complex, and to a lesser extent near the city of Chinde at the mouth of the Zambezi river (cf. Figure 1).

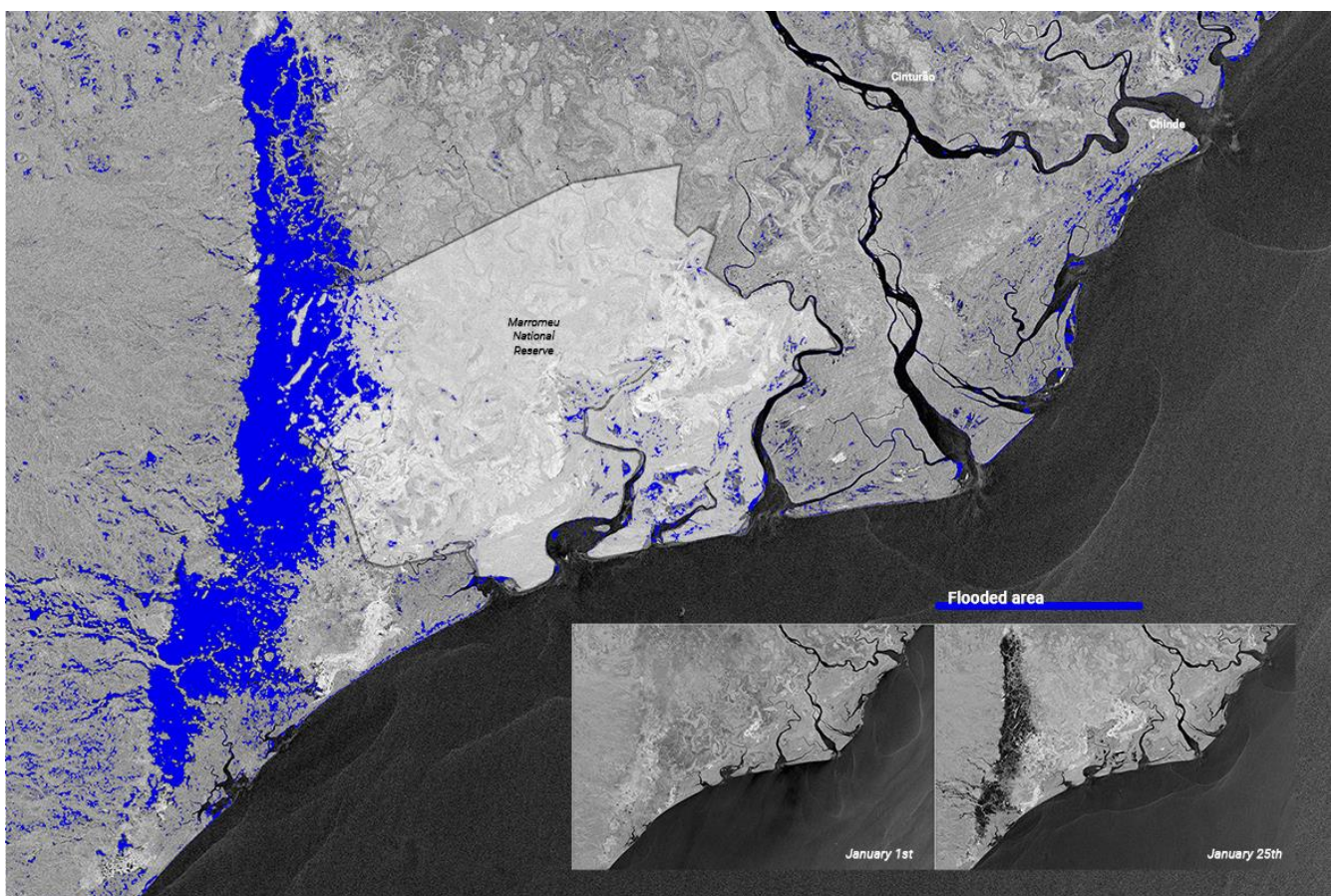


Figure 1. Flooding in the Marromeu Wetland Complex mapped from Copernicus Sentinel-1 imagery acquired on 01-01-2019 (pre-flood) and 25-01-2019 (post-flood) respectively (©Copernicus Sentinel data/DHI GRAS).

Although Tropical Cyclone Desmond did not reach Malawi its effects resulted in continuous rainfall in the southern part of the country. Water levels were therefore already high when a new tropical disturbance formed over the Mozambique Channel in early March 2019 and bringing in more torrential rains and flooding.



According to the Government as many as 750.000 people have been impacted in 14 districts and including records of 45 deaths and 577 injuries. In response, the President of Malawi, His Excellency Arthur Peter Mutharika, declared a State of Disaster in areas hit by the heavy rains and floods in the country. The Images below acquired by the Sentinel-1 satellite of the European Copernicus program show the extent and severity of the flooding along Shire river in Southern Malawi (Figure 2).

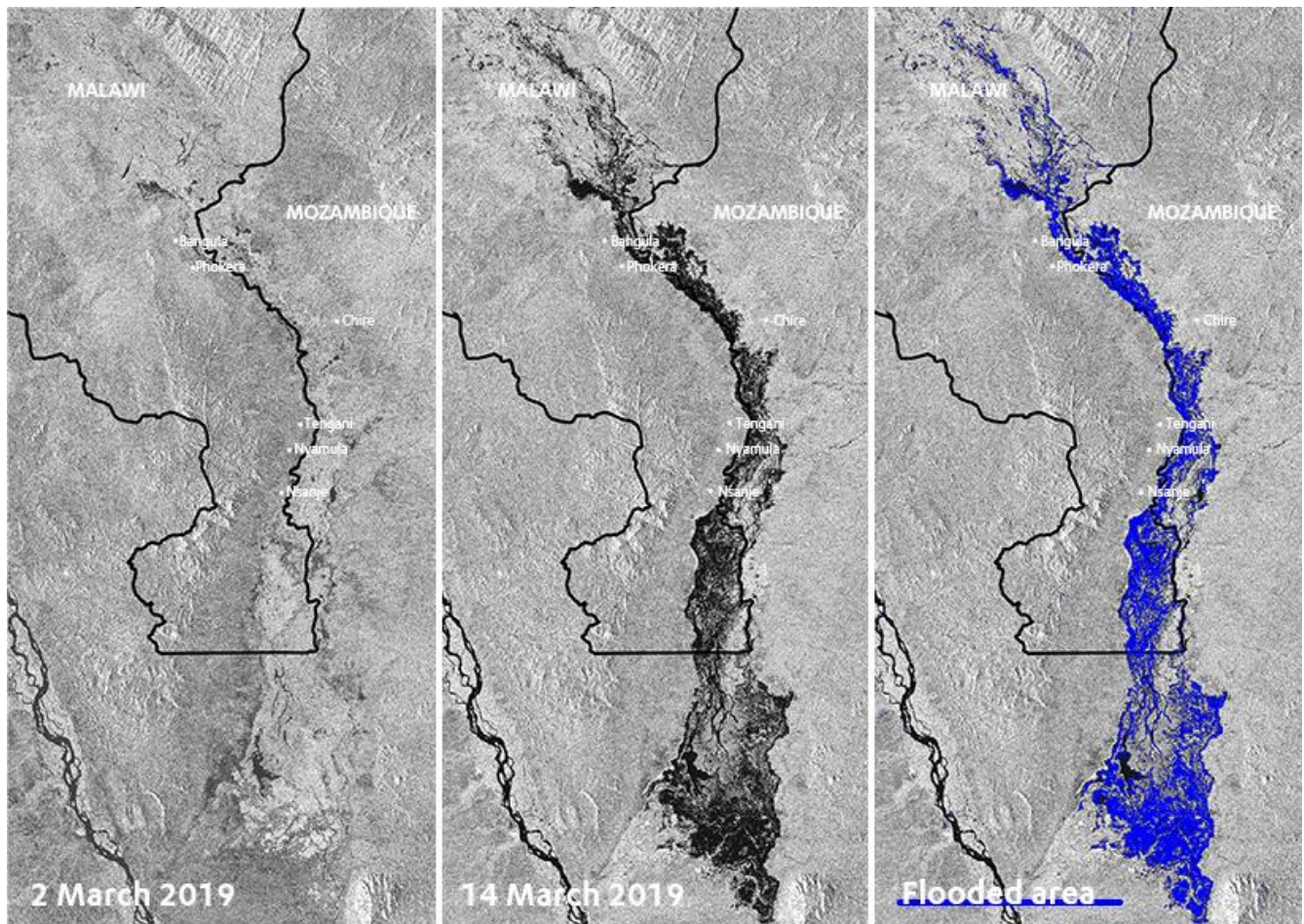


Figure 2. Flooding in the Southern Malawi mapped from Copernicus Sentinel-1 imagery acquired on 02-March-2019 (pre-flood) and 14-Mar-2019 (post-flood) respectively ((©Copernicus Sentinel data/DHI GRAS).