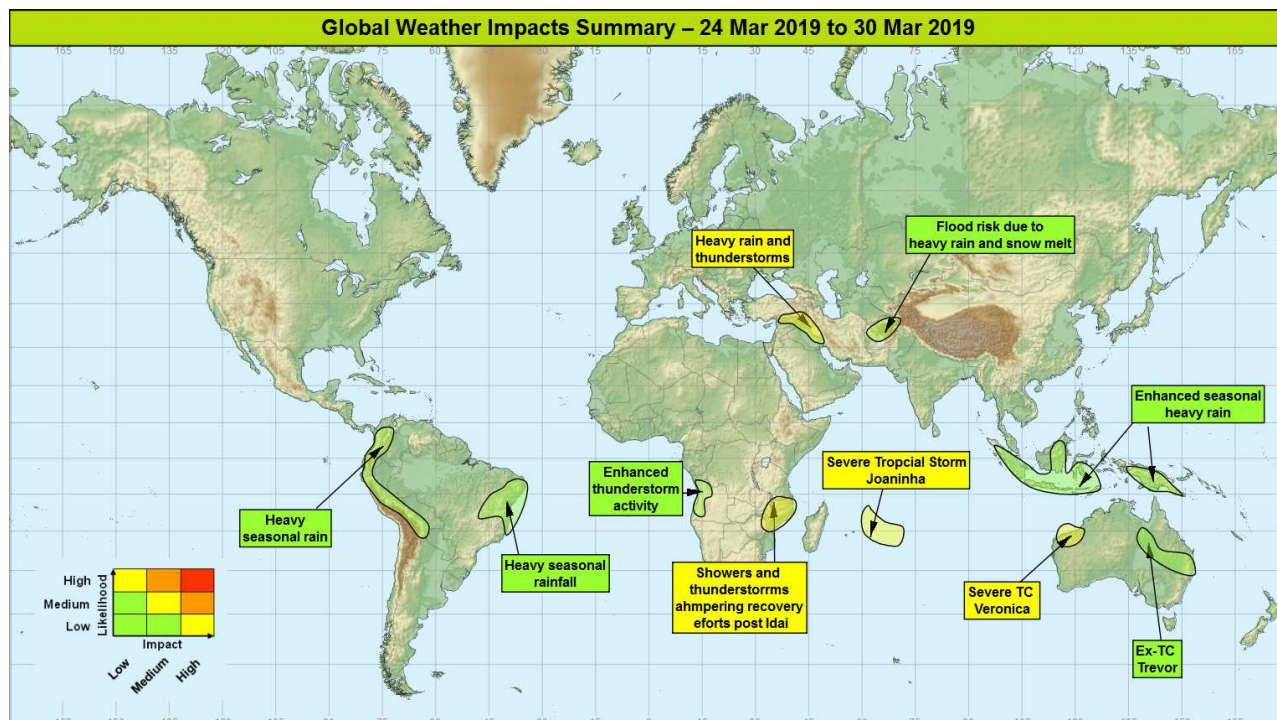


## Global Weather Impacts – Sunday 24<sup>th</sup> to Saturday 30<sup>th</sup> March 2019

Issued on Sunday 24<sup>th</sup> March 2019

### HEADLINES

- Shower and thunderstorm activity across areas affected by Cyclone Idai continues to ease.
- Severe Tropical Cyclone Veronica affecting the north-western coast of Australia.
- Tropical Cyclone Joaninha is forecast to intensify and track close to Rodrigues.



### DISCUSSION

#### Tropical Cyclones

##### **Severe Tropical Cyclone Veronica (north-western Australia)**

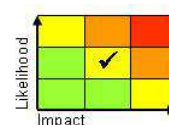
##### **Weather**

Veronica lies close to the coast of north-western Australia west of Port Headland. Although interaction with the Australian mainland is weakening the system, Veronica remains a potent cyclone, with sustained winds of over 90 mph. Veronica is slow moving, and so its effects are likely to impact the Pilbara coast for an extended period. There include very destructive winds, a very dangerous storm surge and torrential rainfall. Veronica has already produced 320 mm of rain in the past 24 hours at Port Headland, which is equivalent to a years worth of rain in this region. Up to another 500 mm of rain could accumulate during the next 24 hours. The cyclone is likely to weaken, and then turn west along the north coast of Western Australia as we head into the new week.

##### **Discussion**

An Equatorial Rossby Wave has assisted in the development of Veronica, with all models showing a similar track into the coast through the next 24 hours. There is now better agreement that Veronica will turn west along the coast as we head into the new week. Interaction with the Australian landmass should continue to weaken the system.

##### **Expected Impacts**



**This forecast may be amended at any time**

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Veronica is likely to bring major flooding due to a combination of torrential rainfall and coastal surge. Very destructive winds are likely close to the core, but the areas affected are very sparsely populated which should limit the impact of this cyclone.

## **Tropical Cyclone Joaninha (Indian Ocean primarily Rodrigues)**

### **Weather**

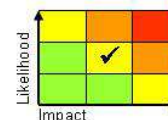
Tropical Cyclone Joaninha has continued to gather strength as it tracks south over the Indian Ocean north of Mauritius. Maximum sustained winds (as of 24/0000 UTC) are estimated to be around 75 mph. Joaninha is forecast to track south and then southeast over the next few days, possibly tracking close to the island of Rodrigues (350 miles east of Mauritius) on Monday or Tuesday. Joaninha is also likely to intensify further, with winds speeds of 90-100 mph possible along with a large storm surge. Torrential rain will be an additional hazard with the potential for as much as 400-500 mm in a 24 hour period.

### **Discussion**

An Equatorial Rossby Wave has helped to organise an area of thunderstorms that is expected to strengthen into a tropical cyclone. All models show the development of a marked tropical cyclone, but with continued model spread for the exact track. Although ECMWF continues to be the model with the most westerly track, there now seems little threat to Mauritius from this system. Instead, most model tracks put the island of Rodrigues at risk, with this evolution also being closer to the official track forecast.

### **Expected Impacts**

If this system affects one of the Mascarene Islands it will produce a threat of flash flooding, coastal flooding, landslides and damaging winds. The island of Rodrigues was impacted by tropical cyclone Gelena last month, which resulted in the loss of electricity to 90% of residents, and so is likely to be more vulnerable to another strong cyclone impact.



## **Europe**

Nil significant.

## **North America**

Nil significant.

## **Central America and Caribbean**

Nil significant.

## **South America**

### **Northern Andes region (Colombia, Ecuador, Peru and Bolivia)**

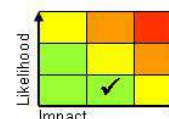
#### **Weather**

Heavy showers and thunderstorms are expected to continue to affect the northern Andes region for the next week. Rainfall accumulations will vary by location due to the showery nature of the rainfall, but locally a further 200-300 mm of rain is possible in places through the week.

#### **Discussion**

Along the Pacific coastline north of NE Peru there are positive SST anomalies, and these indicate a weakening of trade winds and the Humboldt Current in this region. This setup allows sea breezes to draw moist oceanic air to the usually dry western Andes, with an unusually high frequency of heavy showers and thunderstorms occurring here.

#### **Expected Impacts**



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Flash flooding and landslides remain an ongoing threat in the mountainous areas, as well as downstream river flooding. With much of this region preconditioned by previous rainfall, further heavy rain will produce some additional impacts. Over recent weeks there have been reports of significant damage to infrastructure from flooding, with homes, bridges and roads destroyed.

## Northeastern Brazil

### **Weather**

Widespread heavy showers and thunderstorms are expected to affect north-eastern parts of Brazil. These storms could produce up to 100 mm per day, with up to 250 mm of rain accumulating in places through the week. This would represent 2 or 3 times the average March rainfall falling within a week.

### **Discussion**

The South Atlantic Convergence Zone (SACZ) lies further north than usual through the coming days, likely combining with a south shifted ITCZ a little further north, to produce very large rainfall totals across a large region. There continues to be an intermittent signal from some deterministic models runs for a rare sub-tropical or tropical cyclone development close to or just offshore Brazil (between Salvador and Rio de Janeiro) early next week.

### **Expected Impacts**

Flash flooding is the most likely impact, with the potential for landslides. However, this region of Brazil has seen below average rainfall so far through the rainy season, so river flooding and dam breaches are likely to be a lower likelihood.



## Africa

### Northern Mozambique, along with Malawi

### **Weather**

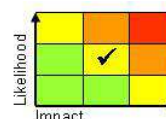
Tropical cyclone Idai affected large parts of Mozambique, bringing locally devastating wind and rain impacts, more particularly to the coastal city of Beira. Conditions across the region are now fairly typical for the time of year. This means that there will be further heavy showers and thunderstorms, focussed mainly across northern Mozambique and Malawi today, these capable of 30-50 mm of rainfall in 6-12 hours. Much of the rest of the country, including Beira, will see much less rainfall although there is the risk of further heavy showers developing across the south of the country during mid-week.

### **Discussion**

This event may well rank as the worst Southern Hemisphere weather disaster on record, with some reports that the death toll has exceeded 1000. There are reports that 90% of the city of Beira has been destroyed. River flooding is likely to continue in central Mozambique for several days. Although weather conditions have now eased, clearly any further rainfall will impact the many thousands displaced by the disaster.

### **Expected Impacts**

Improving weather conditions are expected for the severely impacted areas of eastern Zimbabwe and central Mozambique and southern Malawi. However with many thousands of people displaced by the disaster further showers and thunderstorms will impact these vulnerable people, and may delay rescue workers and aid deliveries to the worst affected areas.

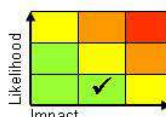


## Angola

### **Weather**

Severe weather has also affected parts of Angola in recent days. Heavy rains and flooding have affected the provinces of Benguela, Luanda, Huila and Zaire, with further enhanced shower and thunderstorm activity likely through the next few days. These could give 30-50 mm of rainfall in a few hours, with locally over 100 mm falling through the week. This represents the amount of rainfall this region normally sees in the whole of March.

### **Discussion**



**This forecast may be amended at any time**

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All models signal thunderstorm activity to remain enhanced this week. Forecast profiles suggest some severe storms are likely, with well over 4000 J/Kg of CAPE available. Reports suggest floods have killed 19 people across Angola, with many more left homeless.

## **Expected Impacts**

Further flash and river flooding, land and mudslides are likely posing a risk to life and property. Damage to infrastructure is possible along with significant travel disruption.

**Rodrigues (SW Indian Ocean)** – See *Tropical Cyclones* section.

## **Middle East**

### **Northern Syria, northern Iraq, far southeast of Turkey and western Iran**

#### **Weather**

Continuing very unsettled into early next week with heavy rain and thunderstorms developing. The heaviest rain and highest rainfall totals will be focused on the Zagros mountains with 50-100 mm falling in places each day and 200-300 mm possible before conditions improve by Wednesday. That would be roughly equivalent to twice as much as the average March rainfall in these areas. More impactful rainfall is likely across northern Iraq and Syria along with southern Turkey. Here storms could produce up to 50 mm in a short period impacting the vulnerable populations in this region.

#### **Discussion**

An extending upper trough from mid latitudes will interact with the sub-tropical jet leading to pronounced areas of forcing aloft to engage a number of low level warm plumes drawn north over the Middle East. This leading to cyclogenesis over Iraq during Sunday with areas of organised thunderstorms also forming. Models are in good agreement with enhanced uplift over southwest facing slopes in the Zagros mountains likely to mean these areas will see the heaviest rain.

#### **Expected Impacts**

Flash flooding is possible along with the potential for landslides in mountainous areas. Strong gusty winds associated with thunderstorms could cause damage to temporary or poorly built structures and are likely to lead to lifted dust in desert regions.



## **Asia**

### **Afghanistan**

#### **Weather**

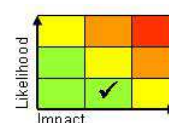
A series of active frontal systems will produce spells of heavy rain across Afghanistan next week, much of this focuses across the north. The rain will be associated with very warm air that will melt the snow pack across the Hindu Kush below 3000-3500 metres.

#### **Discussion**

There is a strong signal for heavier than average rainfall and rising freezing levels next week across Afghanistan. There has been a deeper than average snow pack this past winter across the Hindu Kush.

#### **Expected Impacts**

The combination of heavy rain and snow melt will increase the likelihood of flash flooding, river flooding and landslides across the mountainous northern and eastern Afghanistan, with downstream river flooding possible in southwestern Afghanistan. At higher altitudes there will be an increased likelihood of avalanches with fresh snowfall.



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**Indonesia, Malaysia, Brunei and Papua New Guinea****Weather**

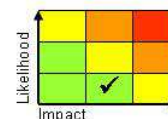
Above average rainfall is expected across many islands in this region through the next week. Whilst the heaviest downpours will be rather localised, they are likely to develop in a similar places each day with 100-150 mm of rain falling in 24 hours and some places likely to receive around 250-300 mm over the next week. In a typical 7-day period at this time of year, this region normally receives around 50-100 mm.

**Discussion**

The MJO, although weak, will continue to help to organise and enhance convection across the region. An additional contribution is expected to be the enhanced ITCZ due an increased flow, and subsequent convergence, from the south associated with tropical cyclone Veronica.

**Expected Impacts**

An increased likelihood of flash flooding and landslides leading to localised damage to infrastructure and property.

**Australasia**

**Northwestern Australia** – See *Tropical Cyclones* section.

**Papua New Guinea** – See *Asia* section.

**Ex-TC Trevor (Northeastern Australia)****Weather**

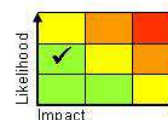
After making landfall as a category 4 severe tropical cyclone near the Queensland and Northern Territory border, Trevor has moved inland over Northern Territory and weakened significantly, now downgraded to a tropical low. The remains of Trevor will continue to track south and then southeast into the interior of Australia, possibly close to Alice Springs, and gradually weaken. The focus will now be on very heavy rainfall. Parts of the Northern Territory are likely to see 300-500 mm of rainfall over the next 2 days. Heavy rainfall is then likely to spread further southeast over parts of Queensland and towards New South Wales during next week. Heavy rainfall and thunderstorms may reach Brisbane or the Gold Coast during the middle of next week.

**Discussion**

Models are in relatively good agreement in the handling of Ex-Trevor over the coming days as it tracks into the interior of Australia and weakens. There is more uncertainty whether the remnants of the system will bring very heavy rainfall to more densely populated areas (e.g. Brisbane) along the east coast during the middle of next week.

**Expected Impacts**

Flash flooding and river flooding likely. Damaging gusts of wind are possible in association with thunderstorms. Impacts likely limited through the next day or two as the system crosses very sparsely populated areas.

**Additional information**

Nil.

**Issued at:** 240720 UTC **Meteorologist:** Mark Sidaway

**Global Guidance Unit**

**This forecast may be amended at any time**

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