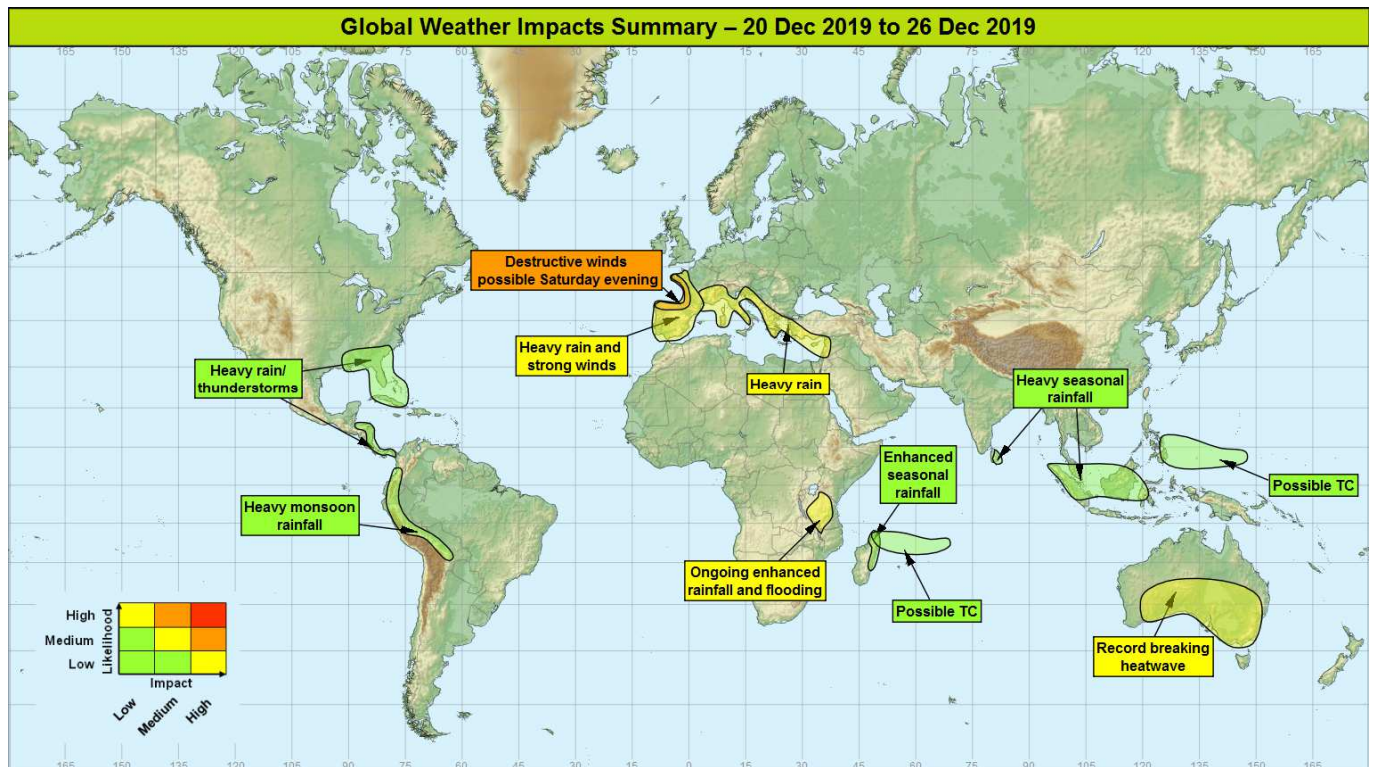


## Global Weather Impacts – Friday 20<sup>th</sup> to Thursday 26<sup>th</sup> December 2019

Issued on Friday 20<sup>th</sup> December 2019

### HEADLINES

- Very unsettled with heavy rain and strong, possibly destructive winds continuing across western/southern Europe.
- Above average rainfall and flooding across parts of eastern Africa.
- Historic heatwave continues for southern and eastern Australia.



### DISCUSSION

#### Tropical Cyclones

There are currently no active tropical cyclones. The following areas are being monitored for potential development.

#### South-West Indian Ocean

##### Weather

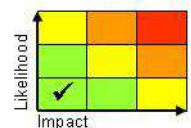
An area of organised convection over the southern Indian Ocean has the potential to develop, perhaps becoming a tropical cyclone over the coming days. Models suggest any development is likely to track west, and may threaten northern Madagascar next week. However any system at this stage looks likely to be fairly weak.

##### Discussion

Although sitting over very warm sea surface temperatures, this area of organised convection is surrounded by a hostile shear environment, so it's dubious as to whether this is able to develop further. The majority of model output suggests a weak system may approach northern Madagascar toward the middle of next week.

##### Expected Impacts

Potential for heavy rainfall, flash flooding and perhaps damaging winds to portions of northern, especially north-eastern Madagascar next week.

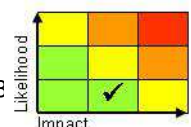


#### North-Western Pacific

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**Weather**

A region of enhanced convection extending east from The Philippines could be the spawning ground for tropical cyclone over the coming days. Models signal a potential system running west toward the central Philippines toward the middle of next week, although at this stage the track and intensity of any development, should it occur, is uncertain.

**Discussion**

A series of Rossby Waves has been identified running west through the western Pacific. It is possible that one of these may be enough to trigger TC development within the broad region of enhanced convection there. Any development looks likely to track west toward the Philippines around the middle of next week.

**Expected Impacts**

Potential for torrential rainfall, flash flooding and damaging winds. Vulnerability in this region may be increased following a magnitude 6.8 earthquake last weekend.

**Europe****Western Europe****Weather**

Further spells of heavy rain are likely across Iberia today and tomorrow, ahead of Storm Fabien which is expected to bring destructive winds to parts of northern Iberia and western France on Saturday evening. The heaviest rainfall is likely across central and southern Spain and Portugal where over 100 mm could fall over the next two days. As well as the heavy rain, very strong, damaging winds are also likely, these peaking later on Saturday. At this time, gusts of 80-90mph are possible along the coast of northern Spain and western France, with gusts 55-65mph inland. Conditions should ease through Sunday and into next week.

**Discussion**

Further frontal waves are likely to be driven across Iberia by the very strong PFJ. The PFJ is then likely to buckle later today and into Saturday, picking up on a surface low which is likely to run quickly ENE into NW France through Saturday. To the S of the low centre, very tight gradients are expected to bring damaging winds to parts of northern Spain and western France in particular.

**Expected Impacts**

Flash flooding is possible, especially across parts of Iberia. Strong winds are likely to cause disruption to travel and some property/infrastructure damage – destructive winds are possible, particularly for N Spain and W France, later Saturday. Large waves bring the potential for dangerous conditions for Atlantic coasts.

**Parts of southern France, including Corsica, Italy, including Sardinia, as well as parts of the Balkans, Greece and western Turkey, Cyprus and western Levant.****Weather**

The disturbed weather across western parts of Europe is likely to occasionally spread to southern and south-eastern Europe at times, perhaps as far as the eastern Mediterranean and western Levant toward the middle of next week. By the end of the period some 50-150 mm of rain is likely to have fallen widely across this area, with western upslopes of Albania and northern Greece seeing as much as 200 mm – this is just over the average total for all of December in these areas.

**Discussion**

The strong jet and intense push of warm air is likely to allow active frontal systems to get across much of the Mediterranean, with a strong orographic component to rainfall. With warm, tropical air entrained into these systems, ppn efficiency will be high. WBFLs are also high meaning rainfall will not be locked up as snow over mountains, exacerbating likely impacts.

**Expected Impacts**

Flash-flooding, landslides and impacts to some transport and utilities is possible.

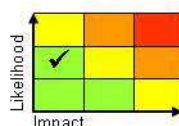
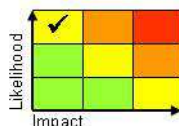
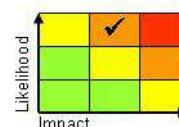
**North America****Southeast United States, Bahamas and Cuba**

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## Weather

Heavy rain and thunderstorms are expected to affect the area through the weekend, bringing 40-80mm of rainfall fairly widely, and perhaps as much as 150mm for parts of Louisiana, Alabama and into Florida. The storms will also affect the Bahamas and perhaps Cuba. As much of the rainfall will be in the form of heavy showers and thunderstorm, large amounts of precipitation are likely to fall in a short duration.

## Discussion

Ongoing heavy showers and thunderstorms will become more active into the weekend as a mid-latitude trough is signalled to disrupt to the NE of the area through the weekend, leading to the development of a surface tropical low.

## Expected Impacts

Flash flooding is likely, especially in urban areas. Some disruption to utilities and infrastructure is possible and an increased risk of landslides in areas of steep terrain in Cuba.

## Central America

### Southern parts of Central America

#### Weather

Heavy rain and thunderstorms are likely to affect the area over the next several days, bringing widely 50-100mm of rain by the end of the period. Some areas could see 150-300mm of rain during the next few days, with much of this falling in a relatively short space of time. This is approaching the total rainfall for December in this area.

#### Discussion

The remnants of a mid-latitude cold front, as well as above normal SSTs are likely to generate some active thunderstorms over the next few days.

#### Expected Impacts

Flash and river-flooding. Disruption to utilities and infrastructure.



## South America

### Ecuador, western Colombia, Peru and Bolivia

#### Weather

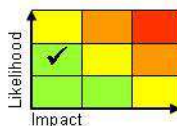
Frequent heavy showers and thunderstorms will affect these regions through the next 7 days, with the showers each day bringing 50-75 mm in just a few hours, with some locations receiving over 200 mm (around the December average rainfall). As is the nature of showers, spatial coverage on any one day will be highly variable.

#### Discussion

With the South American Monsoon now extending well southward, daily rounds of showers and thunderstorms are expected to form to the west of the Andes of Colombia and Ecuador, and to the east of the Andes further south. The region highlighted has seen above average rainfall during the past weeks, and is also forecast to receive the highest rainfall totals.

#### Expected Impacts

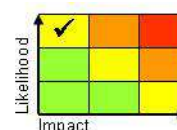
Flash flooding likely, with increased likelihood of landslides.



## Africa

### Parts of eastern/central Africa

#### Weather



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Continued heavy showers and thunderstorms associated with the seasonal rains are expected to be heavier than normal over the next week, with a further 100-150 mm of rain falling in places. This is close to the average rainfall in this region for the whole of December, with this area having already seen 200-400% of the usual rainfall over the past few weeks. Whilst the area affected and severity of showers and thunderstorms is beginning to ease, further heavy showers and antecedent conditions mean further impacts are likely.

## Discussion

Enhanced seasonal rainfall in association with the strong positive Indian Ocean Dipole event which, although declining, is still influencing the large scale shower distribution. Large tracts of eastern Africa have seen well above average rainfall over the past few months. The combination of all these factors dramatically increases the likelihood of further flash and river flooding along with further deadly landslides. There are signs that the area of enhanced rainfall is slowly waning, with totals offered by extended models also slowly reducing.

## Expected Impacts

Increased threat of flash flooding and landslides in the region, with further river flooding likely.

## Madagascar

### Weather

Across the far north and east of the island daily shower and thunderstorm activity will continue at above average frequency. Over a couple of hours 25-50 mm of rainfall is possible, whilst some locations may receive 100-200 mm in total overall; this representing around a month's rainfall during the wet season, following an already wet spell across this region. It is possible that this rainfall may be further enhanced by a tropical cyclone toward the middle of next week. (see *Tropical Storms* section above.)

### Discussion

Enhanced low-level moisture will act to promote shower and thunderstorm activity, albeit of gradually reducing intensity. December is a very wet month in Madagascar, at the start of the annual rainy season. With that in mind, these rainfall accumulations although high, are unlikely to be overly problematic.

### Expected Impacts

Localised flash flooding possible. An elevated risk of landslides in areas where terrain is steep.



## Middle East

### Western Levant

See *Europe* section.

## Asia

### Malaysia, Indonesia and Brunei

#### Weather

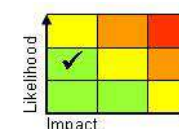
Heavy rainfall is expected to continue through the next week with some places seeing up to 300mm (equivalent of 50-75% of the average monthly rainfall at this time of year) event totals. There has already been extensive flooding parts of Malaysia (Johor in particular), and whilst rainfall should ease as compared to recent days, further disruption is likely at times.

#### Discussion

Above average SSTs in the Java Sea and surrounding waters, combined with increased convergence as a result of a stronger northeasterly flow through the South China Sea and passage of several tropical Equatorial Rossby Waves (ERW) are likely to contribute to enhance convection through the next week. These rains have already caused significant impacts in parts of this region, with further impacts likely

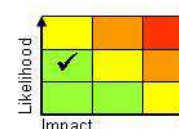
#### Expected Impacts

Increased threat of flash flooding and landslides.



## Sri Lanka

### Weather



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Periods of heavy rain are likely to affect parts of the Island through the next 5-7 days, with event totals approaching 150-200mm. This is well above the average total rainfall for December for this part of Sri Lanka.

## Discussion

An active train of Equatorial Rossby Waves are expected to bring periods of heavy rain and thunderstorms primarily to the west of Sri Lanka. Above normal SSTs and a series of ERW are likely to lead to periods of heavy rain.

## Expected Impacts

Flash-flooding, disruption to transport and utilities are all possible.

## Australasia

### Parts of central/southern Australia

#### Weather

Temperatures across many central parts of Australia are well above normal, with records having already been broken. Australia experienced its hottest day on record on Wednesday (following Tuesday record temperatures) with the national average temperature reaching a high of 41.9°C). On Thursday Nullarbor, South Australia reported a maximum temperature of 50.0 C, the all time Australian record is 50.7C. Maximum temperatures are likely to remain some 10-15°C above normal for the rest of this week and for some places, into the weekend. Values into the mid to high 40s°C remain likely thereafter.

#### Discussion

An area of high pressure to the S of Australia is drifting east, with N'ly flow on its western flank. This continues to tap into hot desert air, leading to some exceptional temperatures.

#### Expected Impacts

A state of emergency has been declared in New South Wales, Australia, fearing that the record-breaking heatwave will exacerbate the state's bushfire crisis. Impacts on infrastructure, including road and rail, as well as utilities, can be expected. Impacts on vulnerable populations (without access to air-con) are also likely. This event is expected to be fairly long in duration, exacerbating the impacts further.



## Additional Information

### Eastern Australia

Numerous bush fires continue across parts of eastern New South Wales, Queensland and Australian Capital Territory with widely dry conditions persisting across all but coastal Queensland over the next week. Whilst fire weather conditions have improved relative to recent days, the sheer size of many ongoing fires will continue to produce large amounts of small particulates that will contribute to very poor air quality for several weeks to come.

**Issued at:** 200830 UTC    **Meteorologists:** Jason Kelly/Mark Sidaway

**Global Guidance Unit**

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