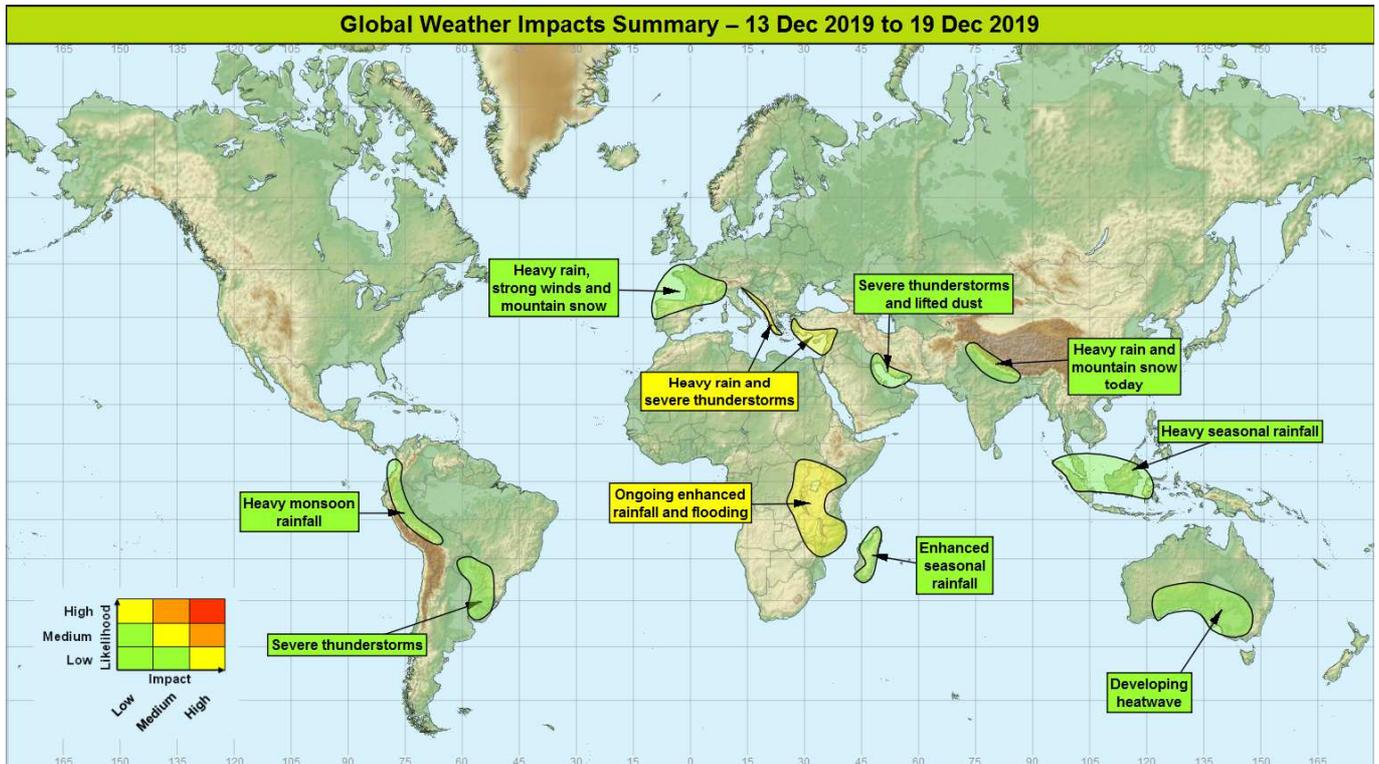


## Global Weather Impacts – Friday 13<sup>th</sup> to Thursday 19<sup>th</sup> December 2019

Issued on Friday 13<sup>th</sup> December 2019

### HEADLINES

- Above average rainfall continuing across parts of eastern Africa.
- Unsettled across Western Europe and parts of the Middle East.
- Developing heatwave across parts of Australia



### DISCUSSION

#### Tropical Cyclones

There are currently no active or potential tropical cyclones expected to pose a threat to land over the next 7 days.

#### Europe

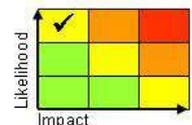
#### Western Balkans, Aegean Sea, southern Turkey, Cyprus, Syria, Lebanon and Israel Weather

Scattered heavy showers and thunderstorms are expected to affect the region through Friday and into the weekend. Rainfall amounts will be highly variable but some locations are likely to receive 50-100 mm over a few hours. Thunderstorms are likely to be locally severe with large hail, frequent lightning, strong winds and isolated tornadoes/waterspouts possible. Strong winds could generate dense dust storms across the Middle East.

#### Discussion

The interaction of the polar front jet and a strong subtropical jet across the eastern Mediterranean is expected to maintain a threat of deep convection as decaying frontal systems move across the region. Moderate instability and vertical shear supports multiple hazards before an upper ridge builds east by the beginning of next week.

#### Expected Impacts



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Flash flooding and increased landslide risk due to heavy rain. Localised impacts to property and infrastructure are also possible from hail, lightning and strong wind. Dense dust plumes could result in some disruption and impacts to vulnerable population groups.

## Western Europe

### **Weather**

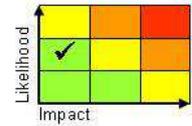
Very unsettled conditions are expected to persist through the next week bringing spells of heavy rain, strong winds and mountain snow followed by brief quieter interludes. Through the remainder of this week, the most significant rainfall (with respect to climatology) is expected to be across southwest France and northern Iberia where 50-75 mm of rainfall is expected quite widely with locally 200 mm possible.

### **Discussion**

A powerful Atlantic jet will drive a succession of active frontal systems into western Europe. The pattern will be inherently developmental as incipient waves rapidly deepen in favourable jet locations (left exit/right entrance regions).

### **Expected Impacts**

The combination of flash flooding and strong winds is likely to cause disruption to travel and property/infrastructure damage. With the snow line varying day-to-day, there will be an increased risk of avalanche where heavy, drifting snow rapidly thaws.



## North America

Nil.

## South America

### Ecuador, western Colombia, Peru and Bolivia

#### **Weather**

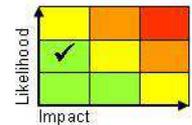
Frequent heavy showers and thunderstorms will affect these regions through the next 7 days, with the showers each day bringing 50-75 mm in just a few hours, with some locations receiving over 200 mm (around the December average rainfall). As is the nature of showers, spatial coverage on any one day will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

#### **Discussion**

With the South American Monsoon extending well south now, 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.



### Parts of Argentina, Paraguay, Uruguay, and southern Brazil

#### **Weather**

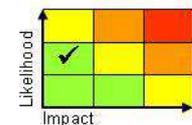
Periods of severe thunderstorms are signalled to develop and move northeast across this region. Frequent lightning is likely, and a risk of localised large hail.

#### **Discussion**

Broad areas of instability are likely to result in further severe thunderstorms, before a shortwave upper trough in the subtropical jet runs northeast east across this region from Sunday. This will engage the high moisture plume associated with the South American Monsoon, resulting in a significant pulse of the South Atlantic Convergence Zone. Within this zone, more concerted areas of heavy rainfall and severe convection are supported.

#### **Expected Impacts**

Localised flash flooding, and low risk of localised damage from large hail, frequent lightning and strong wind gusts.



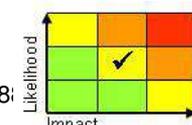
## Africa

### Parts of eastern/central Africa

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## Weather

Further widespread heavy showers and thunderstorms associated with the seasonal rains are expected to continue to be heavier than normal over the next week, with a further 100-200 mm of rain falling in places from frequent heavy, thundery, afternoon downpours. 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.

## 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.

## Expected Impacts

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

## Madagascar

### Weather

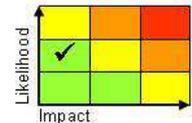
Tropical cyclone Belna dissipated over Madagascar on Wednesday, but the moisture that the remnants contain is expected to promote above normal shower and thunderstorm activity over the next week. 50 mm of rainfall is locally possible in a couple of hours whilst some locations may receive 200-300 mm over the next week; this representing around a month's rainfall during the wet season.

### Discussion

The moisture plume associated with the remnants of Belna will become slow-moving over the country. This source of moisture will act to promote shower and thunderstorm activity, with the passage of subtle troughs in the sub-tropical jet acting to enhance these further. December is a very wet month in Madagascar at the start of the annual rainy season, hence it is thought that these rainfall accumulations although high are unlikely to be overly problematic.

### Expected Impacts

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



## Middle East

**Syria, Lebanon and Israel** – see *Europe* section.

## Kuwait, southern Iran, UAE, Qatar, Bahrain and eastern Saudi Arabia

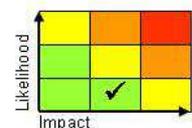
### Weather

Unsettled conditions are expected to continue across the Persian Gulf through to the middle of next week with the most widespread thunderstorm activity expected to affect western Iran (including Bushehr and Bandar Abbas) on Monday and Tuesday. Very localised heavy rainfall of 15-25 mm in a few hours is possible throughout, but 75-100 mm of rain is possible on Monday and/or Tuesday. This is equivalent to around the entire December average rainfall for the eastern Persian Gulf.

### Discussion

Disturbances within the sub-tropical jet cutting across the region will engage the resident baroclinic zone which remains relatively slow-moving over the Arabian Peninsula. Areas of elevated convection are expected to develop over the coming days, but it is a confluent trough crossing the Gulf on Monday into Tuesday which will likely lead to a widespread area of heavy rain and thunderstorm activity to develop.

### Expected Impacts



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Flash flooding likely in urban regions. Transport likely to be disrupted, especially aviation with the region home to several large hub airports. Strong winds and lightning will bring the risk of localised damage, and lifted dust will reduce air quality.

## Asia

### Northern Pakistan, India and Nepal

#### **Weather**

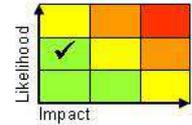
An area of heavy rainfall and mountain snow will move east through today (Friday). In excess 50cm of snow is likely over the Himalayas. Conversely this precipitation will wash out pollutants and likely improve the air quality across the region temporarily.

#### **Discussion**

The same disturbance that brought thunderstorm activity to the Middle East on Wednesday will continue east to bring enhanced precipitation across this region over the next 2 days. Precipitation will be enhanced by orographic uplift, meaning that the Himalayas and their foothills will see the greatest accumulations.

#### **Expected Impacts**

Some minor flash flooding is possible in some urban areas. Snowfall may disrupt travel across mountain passes in the region and increase the risk of avalanche. Conversely precipitation is likely to wash out airborne pollutants leading to much improved air quality across northern Pakistan and northwestern India.



### Malaysia, Borneo, Brunei and Sumatra

#### **Weather**

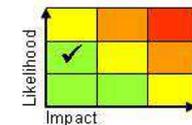
Even though it is the rainy season in this region, heavy rainfall is expected to continue through the next week with some places seeing up to 300mm (equivalent of 50-75% of the average monthly rainfall at this time of year).

#### **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 is likely to contribute to enhanced convection through the next week. These rains have already caused significant impacts in parts of this region, with flooding being reported across parts of Malaysia.

#### **Expected Impacts**

Increased threat of flash flooding and landslides.



## Australasia

Eastern Australia – see *Additional Information* section.

### Parts of central/southern Australia

#### **Weather**

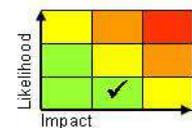
Developing northerly flow is signalled to draw hot desert air south across these parts of Australia by the middle of next week. Maximum temperatures are likely to be some 10-15°C above normal, with values achieving the mid to high 40s°C.

#### **Discussion**

A developing area of high pressure to the S of Australia is likely to drift E, with N'y flow developing on its W'ern flank. This is likely to result in hot desert air being drawn S, leading to some very high temperatures.

#### **Expected Impacts**

Impacts on infrastructure, including road and rail, as well as utilities, can be expected. Impacts on vulnerable populations is also likely.



## Additional Information

### Eastern Australia

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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:** 130815 UTC **Meteorologists:** Jason Kelly/Mark Sidaway

**Global Guidance Unit**

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