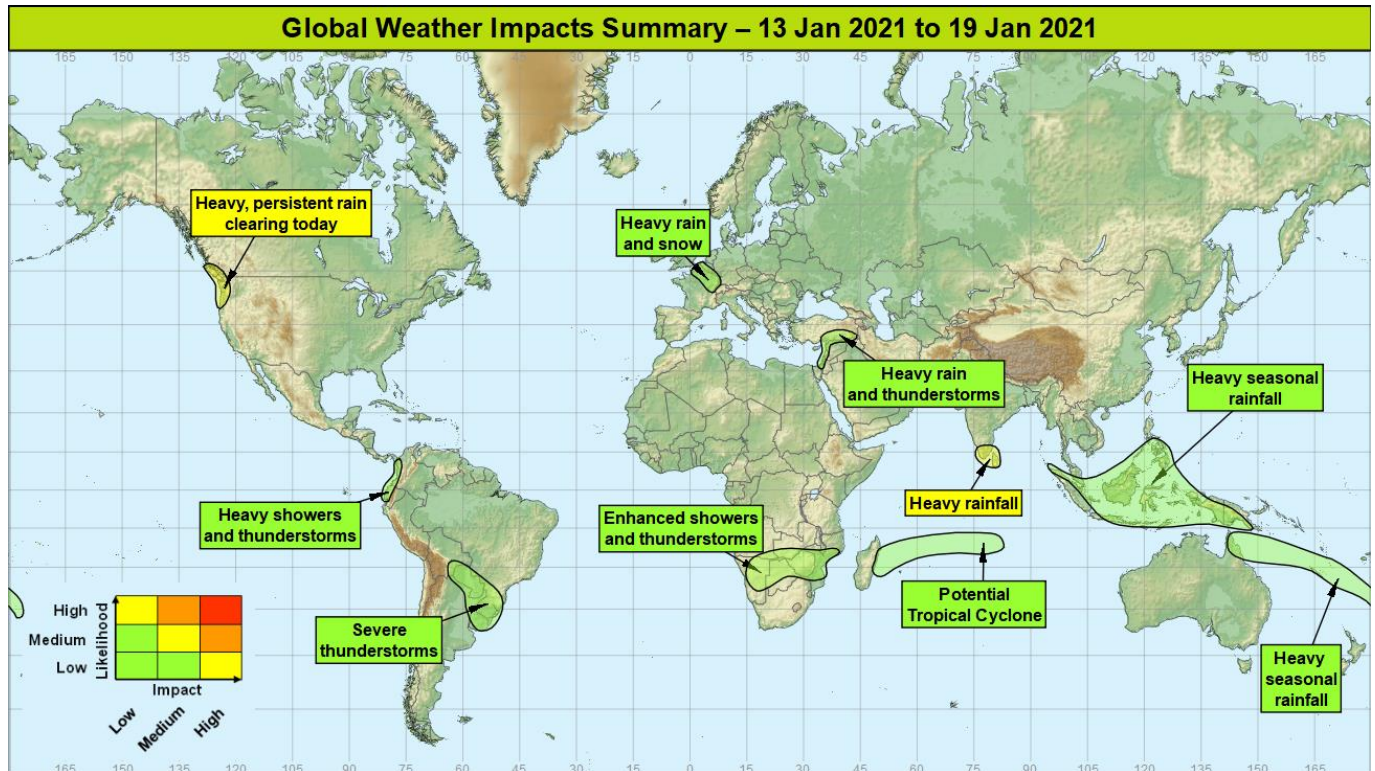


## Global Weather Impacts - Wednesday 13 January 2021 to Tuesday 19 January 2021

Issued on Wednesday 13 January 2021

### HEADLINES

- Heavy rainfall and continued flooding affecting Sri Lanka, and the far south of India.
- Heavy rain easing across northwest USA and southwest Canada.



### DISCUSSION

#### Tropical Cyclones

There are no named tropical cyclones at present.

*The following areas are being monitored for potential:*

#### **Southern Indian Ocean - Madagascar**

##### **Weather**

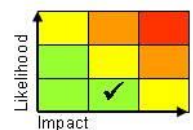
There is a signal for tropical cyclone development over the next few days over the Central South Indian Ocean – should a system develop it looks most likely to track north of the Mascarene Islands towards the east coast of Madagascar towards the end of this period. It is too early to give a useful indication of most likely strength; a significant tropical cyclone cannot be ruled out.

##### **Discussion**

An area of increasingly organised convection, associated with an Equatorial Rossby Wave, is signalled by a number of models, and multi-model ensemble output, to develop into a tropical cyclone over the next few days as it heads westwards. Despite significant variation in strength/development of this system, models are remarkably consistent in their tracks with lower than normal ensemble spread, resulting from the large scale and simple nature of the steering flow.

##### **Expected Impacts**

Low likelihood of flash flooding and landslides, and very low likelihood of damaging winds.



This forecast may be amended at any time

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## Europe

### France, Switzerland, Belgium, far south-west of Germany

#### **Weather**

A slow moving area of rain will essentially come to a halt across this region, and turn increasingly to snow on its eastern edge. 50-75 mm, locally 100 mm of rain will fall through today (Wednesday) and tomorrow (Thursday), with 15-20, locally 30cm of snow possible too, mainly on Thursday.

#### **Discussion**

A slow moving frontal zone will come up against the cold block over Europe, leading to a slow moving area of rain, minor waves running SE pepping up the rainfall at times. The system is expected to occlude out and increasingly engage the cold air to the east, with precipitation increasingly falling as snow during Thursday. The forcing will tend to weaken through Friday, with rain/snowfall easing off as a result.

#### **Expected Impacts**

Disruption to transport and isolated health impacts in the general population is likely where significant snow falls, whilst localised flooding of homes and businesses could occur further west where rainfall will be more prevalent.



## North America

### Far north-west of USA, far south-west of Canada

#### **Weather**

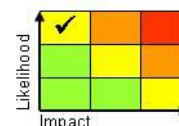
Heavy and persistent rain will continue through the first part of today (Wednesday), before clearing south-eastwards later. An additional 75-100mm of rain could fall, on top of the 100mm of rain that has already fallen in some parts in the past 24-36 hours.

#### **Discussion**

A slow moving frontal zone "atmospheric river" is currently affecting the area, but will be driven southwards later today as a trough forcing a wave along the frontal boundary passes and the upstream pattern amplifies. The US NWS has flood warnings and watches in place for this event, although it is not especially unusual for this area.

#### **Expected Impacts**

Some river flooding is expected, and localised urbanised flash flooding is also possible. There is a risk of landslides in areas of steeper terrain, given saturated soils.



## Central America and Caribbean

Nil.

## South America

### Colombia, Ecuador, Costa Rica and Panama

#### **Weather**

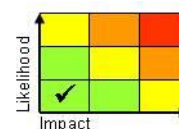
Frequent heavy showers and thunderstorms will affect this region over the coming days. The heaviest rainfall is expected across the western foothills, where daily totals of 75-150mm are possible. Overall totals this week may exceed 300mm, well in excess of the average rainfall for the month of January.

#### **Discussion**

Although the typical La Niña response has been observed through the boreal winter, a slightly anomalous onshore flow has developed across Ecuador and in particular western Colombia which is acting to enhance shower and thunderstorm activity against the western Andes.

#### **Expected Impacts**

Flash flooding. Enhanced risk of landslides.



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**Uruguay, Paraguay, far south of Brazil, far south-east Bolivia, far north-east Argentina****Weather**

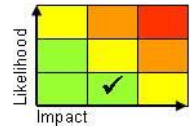
Severe thunderstorms and heavy rain are expected to affect parts of this region once again from this coming weekend. Rainfall accumulations of 100-200mm may occur over a few hours which would exceed the typical January monthly rainfall (100-150 mm). In addition to heavy rain, hail, strong winds and lightning are also likely.

**Discussion**

Monsoon moisture returning southwards in the wake of the most recent tropical convergence zone looks likely to be picked up a sharp upper trough over the weekend, allowing the development of severe and organised thunderstorms, along with heavy rain, moving slowly NE'wards ahead of the next strong cold front.

**Expected Impacts**

Flash flooding, and potential for landslides in steeper terrain. Possible power disruption and damage to crops and infrastructure.

**Africa****Southern Africa****Weather**

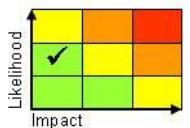
Heavy showers and thunderstorms will be more frequent than normal across a large part of southern Africa. Some thunderstorms are likely to be severe and accompanied by large hail, frequent lightning and gusty winds. Some places could see over 200mm by the end of the week. Rainfall totals across the region as a whole will likely exceed normal rainfall for the whole of January.

**Discussion**

Above average rainfall is a typical La Niña response across this region with significant circulation changes, particularly in the upper troposphere, where upper level divergence reduces the environmental static stability and promotes convective ascent. Across the tropics this is resulting in more frequent shower activity each day whilst further south tropical moisture is drawn south ahead of upper troughs within the mid-latitude flow.

**Expected Impacts**

Flash flooding. Possible power disruption and damage to crops and infrastructure.

**Middle East****Southern Turkey, The Levant, northern Syria, northern Iraq.****Weather**

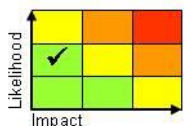
A succession of heavy rain and thunderstorm events is expected to affect this region over the coming few days, bringing 200-250mm of rain to some locations.

**Discussion**

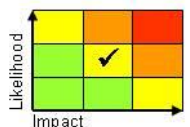
After something of a respite today, low-latitude mobility accompanied by a strong sub-tropical jet will feed in a succession of frontal systems and heavy showers. Large rainfall accumulations are likely to build up across western facing slopes of the Levant, and southern facing slopes of the higher ground north of Syria and Iraq, into southern Turkey. 50-75mm could fall in a single day, with the cumulative effect likely to raise river levels and lead to some flooding

**Expected Impacts**

River flooding is the most likely impact, but flash flooding also possible in parts of the Levant. Steeper terrain will see a risk of landslides.

**Asia****Southern India and Sri Lanka****Weather**

Frequent heavy showers and thunderstorms are expected to continue across the region today before activity slowly declines back to nearer normal levels for the time of year. Eastern Sri Lanka and southern Tamil Nadu appear most likely to receive the heaviest rainfall during this time with a further 100-150mm on top of the 100-175mm some places have already received.



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## Discussion

A pair of Equatorial Rossby Waves running through the flow (one now clearing the southern tip of India) are acting to enhance convection along the axis of higher WBPT which intersects this region. This is leading to anomalously high rainfall, in what is normally a much drier time of the year, particularly for southern India.

## Expected Impacts

Flooding impacts are expected to continue through the next several days with further disruption to transport whilst an increased risk of landslides and rock falls pose a risk to property and life.

## Philippines, Borneo, Brunei, Singapore, parts of Malaysia, Indonesia and Papua New Guinea

### Weather

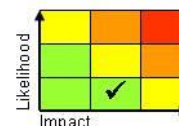
Heavy showers and thunderstorms are expected to be more frequent than normal through the coming week. Daily rainfall totals may exceed 100mm in places, this potentially falling in just a few hours. By the end of this period, a further 200-300mm may have accumulated in places, with some locations already close to or exceeding their January average.

### Discussion

A combination of a La Niña background state, active phase of the MJO moving east towards the Maritime Continent and strong cold surge increasing convergence through the South China Sea all contribute to a continuation of the above average rainfall seen over recent weeks.

### Expected Impacts

Flash flooding. Enhanced risk of landslides.



## Australia

## Southwest Pacific Islands, mainly New Caledonia and Vanuatu. Also northern Queensland.

### Weather

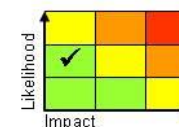
Shower and thunderstorm activity will be more organised than average across this region through the coming week. Daily rainfall totals of 100-200mm are possible with the potential for over 500mm by the end of the week in some locations. Whilst much of the region constitutes open water, these totals are in excess of the typical monthly rainfall for the islands in this region.

### Discussion

As the MJO progresses into the Maritime Continent activity along the South Pacific Convergence Zone (SPCZ) generally increases, with this looking to be the case over the coming week. Anomalously strong E'ly flow will take these showers onto the coast of northern Queensland where markedly above average rainfall is signalled over the next few days. In addition the southern part of the convergence zone will be engaged by a shortwave trough in the subtropical jet, developing a subtropical like cyclone (with a shallow asymmetric warm-core over open ocean).

### Expected Impacts

Flash flooding. Enhanced risk of landslides.



## Additional Information

Cold conditions across western Russia are likely to spread into Belarus and some other parts of eastern Europe later this week. Overnight minima of less than -20°C are possible by the weekend, this 10-15°C below the typical January average.

A marked coldwave is also underway across much of southeast Asia, including southern China, Laos, northern Vietnam and Thailand. Maximum and minimum temperatures in the region are depressed by as much as 5-10°C, meaning uncomfortably cold nights for those without heating and adequate shelter and clothing.

**Issued at:** 130820UTC

**Meteorologist:** D J Harris / Brent Walker

**Global Guidance Unit**

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

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