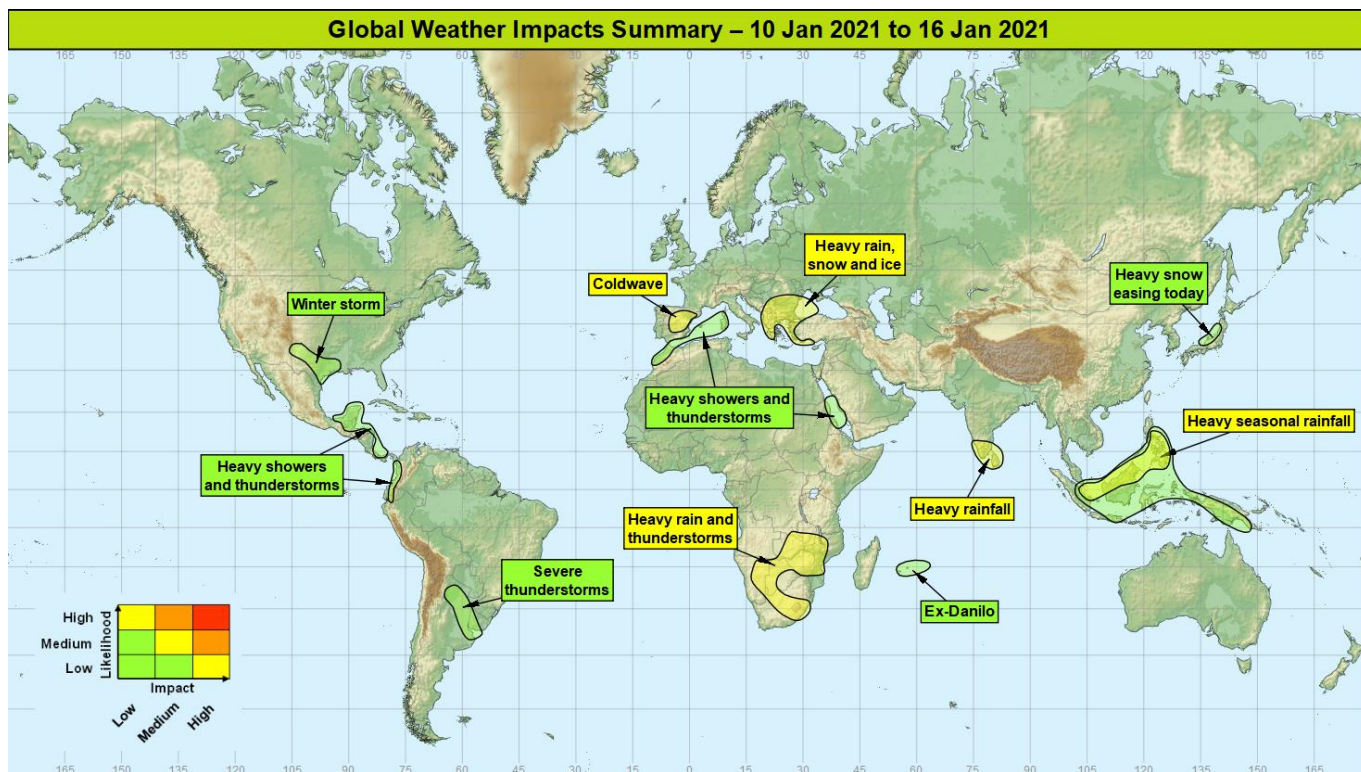


## Global Weather Impacts – Sunday 10<sup>th</sup> to Saturday 16<sup>th</sup> January 2021

Issued on Sunday 10<sup>th</sup> January 2021

### HEADLINES

- Coldwave affecting parts of Iberia with unsettled conditions transferring east across the Mediterranean.
- Above average rainfall contributing to an enhanced flood risk across parts of southern Africa and South and Southeast Asia.



### Tropical Cyclones

There are currently no named tropical cyclones.

### Europe

#### Spain

#### Weather

Snow across Catalonia and Zaragoza Province associated with *Storm Filomena* will ease through Sunday but significantly below average temperatures will last persist over lying snow cover across central and northeastern parts of the country through until the middle of next week. Minimum temperatures are expected to fall to between -10 °C and -15 °C in places, including Madrid, with temperatures only briefly rising above freezing by day. Through next week, snow will gradually melt with temperatures recovering to nearer normal. However, a continued risk of ice is expected.

#### Discussion

A ridge of high pressure is set to build across southwest Europe through early next week and allow clear skies and light winds to maintain significantly below average temperatures over snow cover. Through the middle of the week though, milder air will be drawn into the high and allow a gradual recovery in temperatures.

#### Expected Impacts

Ongoing disruption to transport will gradually ease over the coming days although ice will remain a hazard as snow melts by day but freezes again at night. Low temperatures will increase the likelihood of human health impacts for vulnerable people.

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

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## Southeast Europe

### **Weather**

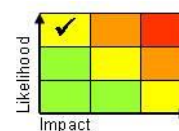
Unsettled conditions are expected to persist across the Balkans over the next couple of days with a mixture of heavy rain, freezing rain and snow expected to affect the region until Tuesday. The heaviest rainfall is expected to affect Albania, northern and western Greece, North Macedonia, Bulgaria and western Turkey where event totals of 75-100 mm of rain are expected widely with 150-200 mm locally possible. North of this region, a wintry mix of freezing rain and snow is expected, particularly across Montenegro, Bosnia and Herzegovina, Serbia, Kosovo and Romania. Frequent showers and thunderstorms will follow through midweek with temperatures widely falling below average thereafter.

### **Discussion**

The upper trough associated with *Storm Filomena* will gradually transfer east across the Mediterranean through the coming week drawing upon a warm plume being dredged north from Africa. As this overruns the low-level reservoir of cold air across the interior of southeast Europe, this will lead to a wintry mixture of precipitation types whilst orographic enhancement of rain further south will contribute to large rainfall totals here.

### **Expected Impacts**

Across the north of the region, winter hazards including transport disruption and human health impacts due to exposure to low temperatures are likely. Further south, heavy rainfall is likely to lead to a combination of surface water and riverine flooding.



## Southern Spain, Gibraltar, northern Morocco, Balearics, Sardinia and Corsica

### **Weather**

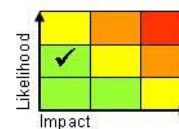
Further heavy showers and thunderstorms are expected to affect the western Mediterranean through the next couple of days before drier conditions become established on Tuesday. The most frequent showers are likely to affect northern Morocco whereas further north, showers will likely be fewer in number but slower-moving. Locally 50-100 mm of rain is possible over the next couple of days, often falling in a few hours.

### **Discussion**

A partially disrupted upper trough will be slow-moving across the western Mediterranean on Sunday but will begin to relax eastward on Monday. As geopotential height rises in its wake, convective depth will decrease. In the meantime, light steering winds near the vortex centre in the north will bring the risk of quasi-stationary thunderstorms whilst further south, showers will tend to be spatially more frequent but faster moving.

### **Expected Impacts**

Localised flash flooding, disruption to transport and damage to infrastructure.



## North America

### Texas, New Mexico and Louisiana

### **Weather**

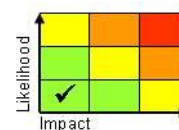
A winter storm will bring a spell of snow to the Southern Plains through Sunday and early Monday with 10-15 cm of snow falling quite widely across eastern New Mexico, north Texas and northern Louisiana. Further south, heavy rain is expected to affect the Gulf of Mexico coast with 40-60 mm of rain falling in around 24 hours.

### **Discussion**

A low-latitude upper trough will engage the baroclinic zone across northern Mexico and trigger a frontal wave across southern USA through Sunday. Precipitation will develop within the colder low-level airmass resident to the north with a band of snow transferring east across the southern Plains.

### **Expected Impacts**

Transport disruption from accumulating snow. Heavy rain and thunderstorms may cause flooding near the central Texas Gulf Coast on Sunday.



## Central America and Caribbean

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**Southeast Mexico, Belize, Guatemala, Nicaragua, Costa Rica and Panama****Weather**

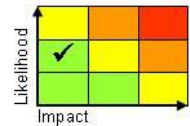
Frequent heavy showers and thunderstorms will continue to affect the northern coasts of Panama, Costa Rica and Nicaragua through Sunday before expanding northwards to southeast Mexico, Belize and Guatemala through early next week. Showers should tend to decrease in number later next week (Thursday and Friday). Although accumulations will vary from location to location, some places are likely to receive 250-350 mm during the next 5 days, equivalent to double the January average for parts of the region.

**Discussion**

A tropical wave will move slowly northwest through the next week and will be further enhanced as it interacts with a low-latitude frontal system sweeping east across the Gulf of Mexico. This will then become the focus for heavy rainfall from frequent showers and thunderstorms before drier air filters slowly west later in the week.

**Expected Impacts**

Localised flash flooding from heavy rainfall with an increased risk of landslides in areas of more steeply sided terrain.

**South America****Northern Argentina and Uruguay****Weather**

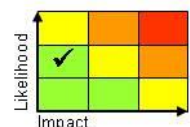
Severe thunderstorms and heavy rain are expected to affect parts of northern Argentina and Uruguay through to Wednesday, including Buenos Aires and Montevideo. Some locations are likely to see 100-200 mm falling over a few hours which would exceed typical January monthly rainfall (100-150 mm). In addition to heavy rain, giant hail (exceeding 5 cm diameter), strong winds and frequent lightning are likely.

**Discussion**

Monsoon moisture will be drawn further south across Argentina and Uruguay through Sunday ahead of an upper trough. Forecast profiles highlight an environment characterised by high instability and shear capable of organised, rotating thunderstorms ahead of and along the developing cold front which will move north towards southern Brazil and Paraguay by Monday night.

**Expected Impacts**

Severe thunderstorm impacts are usually fairly localised but are likely to produce a combination of flash flooding, power disruption, damage to crops, property and infrastructure.

**Western Ecuador and western Colombia****Weather**

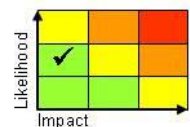
Frequent heavy showers and thunderstorms are expected to affect the region over the next week although frequency should gradually decrease with time. The heaviest rainfall is expected to fall over the western foothills of the Andes whilst the coastal plain of Ecuador will likely receive relatively small amounts of rain. 75-150 mm locally 250-350 mm of rain is likely to fall over the next week, exceeding typical average monthly rainfall.

**Discussion**

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

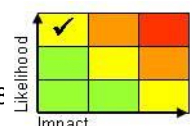
**Expected Impacts**

Increased likelihood of surface water and riverine flooding, as well as landslides in areas of more steeply sided terrain.

**Africa**

**Morocco** – See *Europe* section.

**Northeast Sudan and northern Eritrea** – See *Middle East* section.

**Central and southern Africa**

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

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## Weather

Heavy showers and thunderstorms will remain more frequent than normal across a large part of central and southern Africa. The biggest departures from normal are expected to be across South Africa, Lesotho, eastern Namibia and Zimbabwe where around the average January rainfall is likely to fall over the next 7-10 days. Some thunderstorms are likely to be severe with heavy rain accompanied by large hail, frequent lightning and gusty winds.

## Discussion

Above average rainfall is a typical La Niña response across this region with significant circulation changes across the region, particularly in the upper troposphere, where upper level divergence is contributing to increased mass ascent. Across the tropics, this is resulting in more frequent heavy shower and thunderstorm activity each day whilst further south, tropical moisture is drawn south ahead of upper troughs within the mid-latitude flow. Whilst instability is not quite as extreme as seen in South America, organised and locally severe thunderstorms are possible across parts of South Africa and Lesotho.

## Expected Impacts

Increasing threat of flash and riverine flooding, with the rainfall affecting parts of the region that saw heavy rainfall from Cyclone Chalane at the end of December.

## Middle East

### Southwest Saudi Arabia, northeast Sudan, northern Eritrea

## Weather

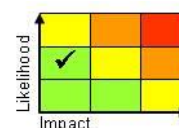
This region (including the cities of Mecca and Jeddah) will likely see heavy showers and thunderstorms this weekend and early next week. These storms could produce 50 mm in a few hours along with hail, frequent lightning and strong winds. The average January rainfall in this region is no more than 10-15 mm.

## Discussion

A marked southward extension of the sub-tropical jet will result in upper forcing engaging a warm plume over the Red Sea providing conditions conducive for deep convection, with large wind shear that could result in long-lived organised thunderstorms.

## Expected Impacts

Flash flooding, hail and wind damage and potential power disruption from frequent lightning.



### Rodrigues, La Reunion and Mauritius (Ex-Danilo)

## Weather

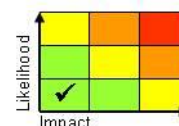
Tropical Depression Danilo degenerated into a remnant low on Saturday afternoon between Rodrigues and Mauritius. Renewed intensification is unlikely but the remnant system is still expected to bring scattered heavy showers and thunderstorms to the Mascarene Islands over the next couple of days with 50-100 mm possible across Mauritius.

## Discussion

Dry air, marginal SSTs and poor upper level environment have inhibited the development of Danilo and is unlikely to undergo any meaningful strengthening as it passes over the Mascarene Islands over the next couple of days as nothing more than a disorganised area of shower and thunderstorm activity.

## Expected Impacts

Localised flash flooding.

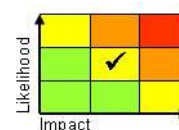


## Asia

### Philippines, Malaysia, Indonesia, Singapore, Brunei and Papua New Guinea

## Weather

Heavy showers and thunderstorms are expected to be more frequent than normal across much of the Maritime Continent through the next week with the most anomalous rainfall expected to occur over central and southern Philippines, northern Borneo, Singapore and eastern Sumatra. Much of this region is likely to receive 200-300 mm of rain over the next week, equivalent to the average monthly rainfall for January.



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

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## 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

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.

## Southern India and Sri Lanka

### Weather

Frequent heavy showers and thunderstorms are expected to continue across the region through the next 3-4 days before activity should return to nearer normal for the time of year. Eastern Sri Lanka and southern Tamil Nadu appear most likely to receive the heaviest rainfall during this time with 200-300 mm likely. Some parts of the region have already seen similar amounts through the first week of January (262 mm in Batticaloa, Sri Lanka) which already exceeds the typical monthly rainfall (~200 mm).

### Discussion

An equatorial Rossby wave will transfer slowly west across the southern tip of India and Sri Lanka over the next 3 days before moving out over the open water of the Arabian Sea.

### 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.



## Northern Japan

### Weather

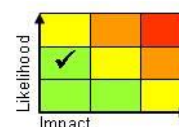
Frequent snow showers are expected to gradually ease across northern Honshu during Sunday with strong winds exacerbating impacts through drifting of lying snow. A further 30 cm of snow could fall in 6 hours across parts of northern Chūbu region.

### Discussion

The onshore flow advecting a frigid Siberian airmass across the Sea of Japan will gradually ease through Sunday. Forecast profiles support frequent CB across the Sea of Japan, depositing snow along the north coast of Honshu.

### Expected Impacts

Further disruption to transport and power networks likely although impacts should gradually ease into early next week.



## Australasia

Nil.

## Additional information

Nil.

Issued at: 100300UTC

Meteorologist:

Matthew Lehnert

Global Guidance Unit

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