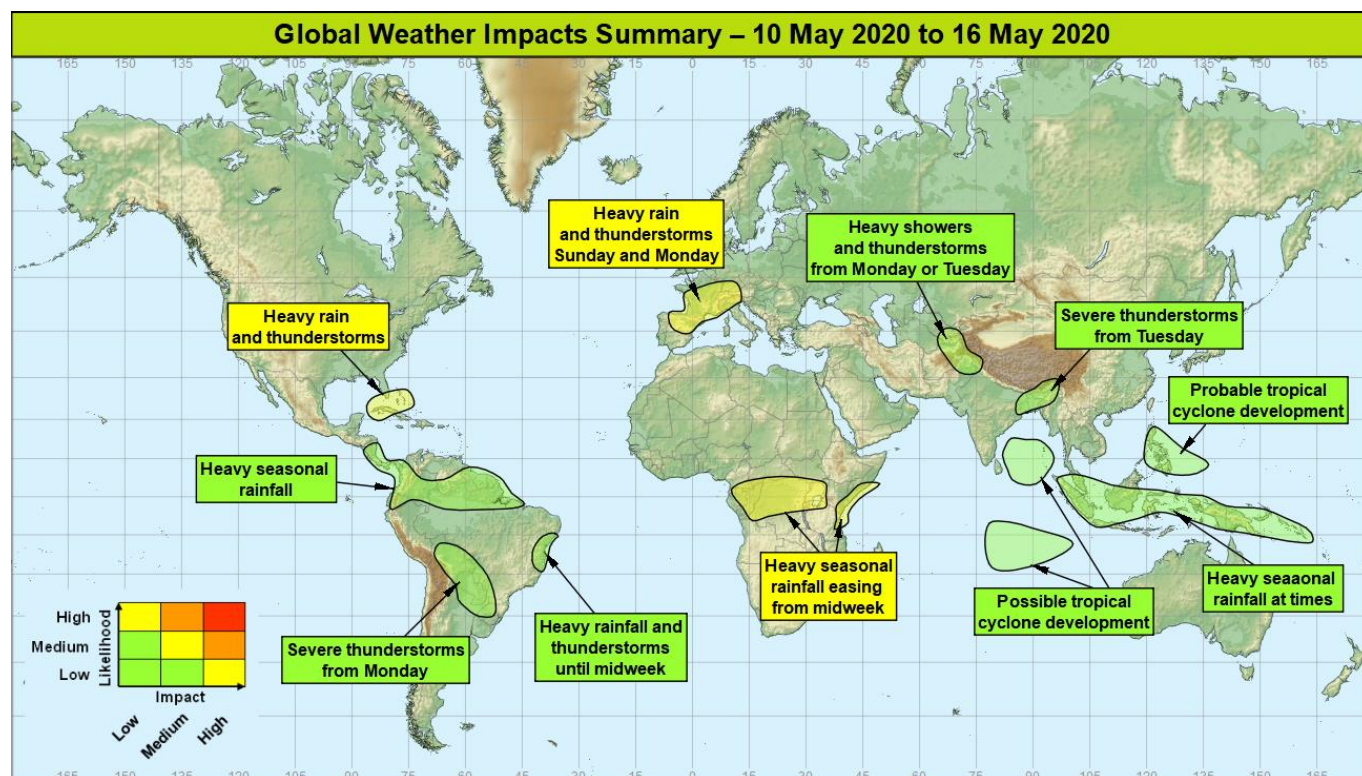


## Global Weather Impacts – Sunday 10<sup>th</sup> to Saturday 16<sup>th</sup> May 2020

Issued on Sunday 10<sup>th</sup> May 2020

### HEADLINES

- Heavy seasonal rainfall continues across equatorial parts of Africa, exacerbating ongoing flooding.
- Heavy rain and thunderstorms for parts of western Continental Europe on Sunday and Monday.
- Heavy rain and thunderstorms for parts of Cuba, Florida and the Bahamas.
- Growing threat of the first tropical cyclone of the season to impact the Philippines.



### DISCUSSION

#### Tropical Cyclones

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

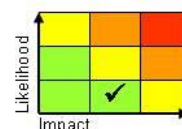
#### Northwest Pacific and the Philippines

##### Weather

An area of thunderstorms has become more organised in recent days to the east of the southern Philippines, close to the Palau islands. This area of thunderstorms will transfer westwards to bring some heavy rainfall to southern parts of the Philippines during the next few days (up to 150 mm which is close to the average for the whole of May).

There is slightly more evidence for the development of a weak tropical cyclone early next week just east of the southern Philippines. If a tropical cyclone does form it will be the first of 2020 and would likely slowly transfer northwest across the Philippines through the rest of next week bringing heavy rainfall (possibly as much as 200-250 mm) and the potential for strong winds. However, this is a low likelihood at present.

##### Discussion



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An Equatorial Rossby Wave will be the driver behind the development of this area of deep convection. Recent runs of the EC and GFS show a tropical cyclone development tracking NW across the Philippines next week and so there is growing evidence for a tropical cyclone, but the GM remains reluctant to develop much more than a tropical depression. If a cyclone develops it would be named 'Vongfong' by the official RSMC (Tokyo) and would be known as 'Ambo' in the Philippines, with a track to the northwest across much of the Philippines.

### **Expected Impacts**

Low likelihood of flash flooding in the Philippines.

### **Eastern Indian Ocean**

#### **Weather**

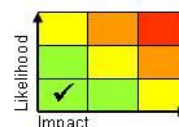
Through the next 7 days there is a low probability of a weak tropical cyclone developing either side of the equator in the eastern Indian Ocean. The potential southern hemisphere system would likely be the first to develop in the coming days, with the northern hemisphere system more likely from the middle of next week in the Bay of Bengal. However, both of these potential tropical cyclones look unlikely to impact land through the next 7 days.

#### **Discussion**

The northern and southern hemispheric parts of an Equatorial Rossby Wave, likely formed from a marked Kelvin Wave moving through the Maritime Continent, will be the driver for potential tropical cyclone developments in the Eastern Indian Ocean. However, there is only a weak deterministic model and ensemble signal for these development at present

### **Expected Impacts**

Impacts looks likely to be restricted to maritime traffic.



### **Europe**

#### **Northern Spain, much of France, Alpine region, southern Germany and Benelux**

#### **Weather**

Spells of heavy rain and some thunderstorms will affect parts of western and southern Europe on Sunday and Monday. The most intense storms are most likely to be across France and the Alpine region where 50-75 mm of rain could fall in a relatively short period (less than 6 hrs), with up to 125 mm over a couple of days in a few locations. This represents over a month's worth of rain. In addition to torrential rainfall, large hail and frequent lightning strikes are also possible. Much drier and cooler weather will arrive for Tuesday.

#### **Discussion**

The upper pattern has turned increasingly cyclonic through Saturday across western and southern Europe as an upper vortex drifts erratically N/NE across Iberia and a major trough extension takes place down the North Sea. The vortex over Iberia is backing the flow over the region and allows a high WBPT plume to be drawn northwards, which becomes a focus for severe convection. At the same time, a frontogenetic cold front will move south, generating areas of heavy dynamic rainfall. The upper trough will clear to the east, with the warm plume and cold front clearing to the south by Tuesday to allow for much more benign conditions.

### **Expected Impacts**

Flash flooding is probable, especially across France and the Alpine region where there may be some disruption to travel. Power outages from lightning and large hail damage are lower threats.



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## North America

### Extreme south of Florida, northern Cuba and Bahamas

#### **Weather**

An area of heavy rain and thunderstorms looks likely to transfer east into northern Cuba, southern Florida and the Bahamas through Sunday, with this area of heavy rainfall possibly becoming slow moving through much of next week, although it is likely to become less widespread too. As much as 300 mm could fall in a 4 or 5 day period with up to 150 mm of rain possible in just 24 hours. The average rainfall in this region for the whole of May is 100-150 mm.

#### **Discussion**

A low latitude upper trough will move east from northern Mexico across the Gulf of Mexico this weekend to engage a cold front and the warm plume to the south across this region. Further short wave upper troughs will continue to engage a frontal plume across the region that will become slow moving as it becomes aligned with the upper flow. Forecast profiles show PWAT of 60-65mm and reasonable vertical wind shear to allow for organised long lasting storms. There is still model differences regarding the area most at risk in this region, but there is a significant threat of flash flooding impacts in a large city.

#### **Expected Impacts**

Flash flooding looks like the most likely impact, with Miami and Havana in the threat area, with some impacts from frequent lightning possible too.



## Central America and the Caribbean

### Northern Cuba and the Bahamas – see *North America* section.

### Nicaragua, Costa Rica and Panama – see *South America* section.

## South America

### Northern South America along with Nicaragua, Costa Rica and Panama

#### **Weather**

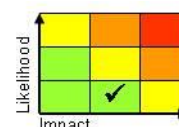
Further heavy rainfall from widespread thunderstorms will affect parts of this region at times through the next 7 days, but likely not as widespread as in recent days. However widespread rainfall of 75-100 mm is expected across much of this region, with up to 150-200 mm in a few places.

#### **Discussion**

The ITCZ is likely to become less active than in recent days and weeks, but will still produce areas of heavy convective rainfall at times.

#### **Expected Impacts**

Further isolated flash flood and landslides are likely within the mountainous terrain of the region.



## Eastern Brazil

#### **Weather**

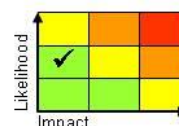
Persistent heavy showers and thunderstorms will affect the same part of eastern Brazil (mostly Bahia state, including the city Salvador) through the next 3 or 4 days, producing up to 100-150 mm of rainfall. This equates to almost 50% of the average May rainfall in this region.

#### **Discussion**

The South Atlantic Convergence Zone will remain slow moving in this part of Brazil through the next 3 or 4 days, with short wave upper troughs enhancing the rainfall at times.

#### **Expected Impacts**

Flash flooding is the main threat, perhaps with an enhanced likelihood of landslides in hilly terrain.



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## **Northern Argentina, parts of southern Brazil, Paraguay and Bolivia**

### **Weather**

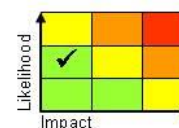
An area of heavy showers and severe thunderstorms will develop across parts of northern Argentina and Paraguay on Monday and will become more widespread and intense as they slowly transfer northwest into Bolivia in the follow days. Up to 100-125 mm of rain could fall in a 6-12 hour period with frequent lightning also likely. Large hail will also be a threat.

### **Discussion**

A southern extension of the sub-tropical plume will extend south to be engaged by several short wave upper troughs to produce an environment

### **Expected Impacts**

Flash flooding probably the most likely impact, with power outages from lightning and damage from large hail a lower likelihood.



## **Africa**

### **Equatorial regions of Africa**

### **Weather**

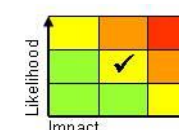
Further heavy seasonal rainfall is expected through parts of equatorial regions of Africa at times through the next 3 or 4 days. Daily heavy showers and thunderstorms will develop, with the most frequent activity likely along the coastal fringe from southern Somalia to northeast Tanzania and also the Kenyan Highlands. Locally 50-100mm of rain may still fall in places each day (often within a few hours), with coastal fringes from southern Somalia to northeast Tanzania being the wettest areas with up to 125-175 mm building up in these areas. The average May rainfall in this region is between 150 mm and 250 mm. The extent of heavy showers and thunderstorms look likely to weaken by midweek.

### **Discussion**

There is a consistent model signal for a weakening rainfall signal by midweek. However, the ITCZ still looks likely to remain active at times through the next week with Equatorial Rossby Wave and the first African Easterly Waves enhancing convective rainfall at times.

### **Expected Impacts**

An ongoing enhanced risk of both flash flooding and some river flooding is likely, with the additional risk of landslides in mountainous terrain. Due to recent and ongoing flooding these areas will be particularly sensitive to further heavy rainfall. However, the flood threat should decrease from midweek.



## **Middle East**

**Nil, but see additional information**

## **Asia**

### **Eastern Afghanistan, northern Pakistan, western Tajikistan and southern Uzbekistan**

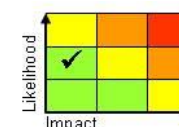
### **Weather**

Heavy showers and thunderstorms are expected to affect this region from Monday or Tuesday, with up to 50-75 mm of rain likely in 3 or 4 days. This is roughly twice the average May rainfall. There is also the potential for strong winds, dense dust storms, frequent lightning and large hail.

### **Discussion**

An increasingly cyclonic upper pattern will produce forcing that will engage the warming plume across this region to produce a range of storm modes. Large CAPE storms are possible, which would produce a large hail threat, but skinny CAPE storms are also possible which would produce flash flooding rainfall. The further east you go the higher the bases will likely be, producing a higher likelihood of strong winds that could lift dense dust storms across dry ground.

### **Expected Impacts**



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Flash flooding is the most likely threat, but with landslides an enhanced threat. There may be a contribution from snow pack melt in places too. The threat of power outages from lightning looks lower, with large hail damage also a lower likelihood. Poor air quality from dense dust storms is also possible.

## **Bangladesh and northeast India**

### **Weather**

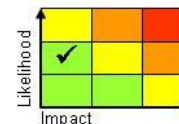
Severe thunderstorms look likely to affect this region from Tuesday, producing up to 50-75 mm of rain in a few hours, with the threat of large hail, frequent lightning and even tornadoes.

### **Discussion**

A series of upper troughs (locally known as Western disturbances) will transfer east across the region next week, engaging the warm plume to produce forecast profiles that show large CAPE and strong wind shear.

### **Expected Impacts**

Flash flooding is the most likely impact, but with a threat of hail and lightning damage and a lower likelihood of tornado damage.



## **Parts of Indonesia, Papua New Guinea and the Solomon Islands**

### **Weather**

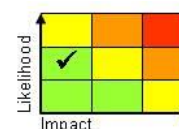
Heavier than average rainfall looks likely through the coming week in parts of this region due to more widespread and intense thunderstorms than usual. Up to 150-250 mm of rain could fall in places, with some parts of this region seeing the average May rainfall within a week.

### **Discussion**

Difficult to pin point the reason for the enhanced rainfall in the region with the MJO having become very weak. It could be due to other tropical waves such as Equatorial Rossby Waves and Kelvin Waves moving through the region to activate and broaden the ITCZ and SPCZ across the region. However, all models and ensemble output show this heavy seasonal rainfall signal across parts of the region.

### **Expected Impacts**

High than usual likelihood of flash flooding and landslides.



## **Australasia**

**Nil**

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**Additional Information:**

- **A late-season polar-continental outbreak** has commenced for much of central and eastern North America. Whilst this outbreak will be characterised by a lot of dry weather, some record low overnight temperatures are possible for areas from the Ohio Valley north-east into New England. Temperatures are expected to return to normal values later next week.
- **A heatwave is expected to continue across southern China, Viet Nam, Laos, Cambodia, Thailand and Myanmar**. Temperatures will be 8 to 12°C above-average. Maximum temperatures will widely reach the mid-30s°C and could exceed 40°C in places. Pre-monsoon heatwaves are not uncommon at this time of year, but this could potentially be more intense and widespread than usual. Temperatures look likely to fall back closer to average early next week across southern China, but will continue well above average elsewhere.
- **A heatwave is expected to develop across parts of North Africa, the Levant and southern Europe** (from Italy eastwards) next week, with temperatures rising 5-10°C above average. It is possible that this heatwave could become prolonged and result in heat stress and an increased threat of power outages.
- **Shower activity across western Yemen looks light** and isolated through the 7 day period, resulting in a mostly dry picture.
- **Cox's Bazar in the southeast of Bangladesh looks like remaining mostly dry** through the next 7 days, with only isolated showers likely.

**Issued at:** 100400 UTC    **Meteorologists:** Paul Hutcheon

**Global Guidance Unit**

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