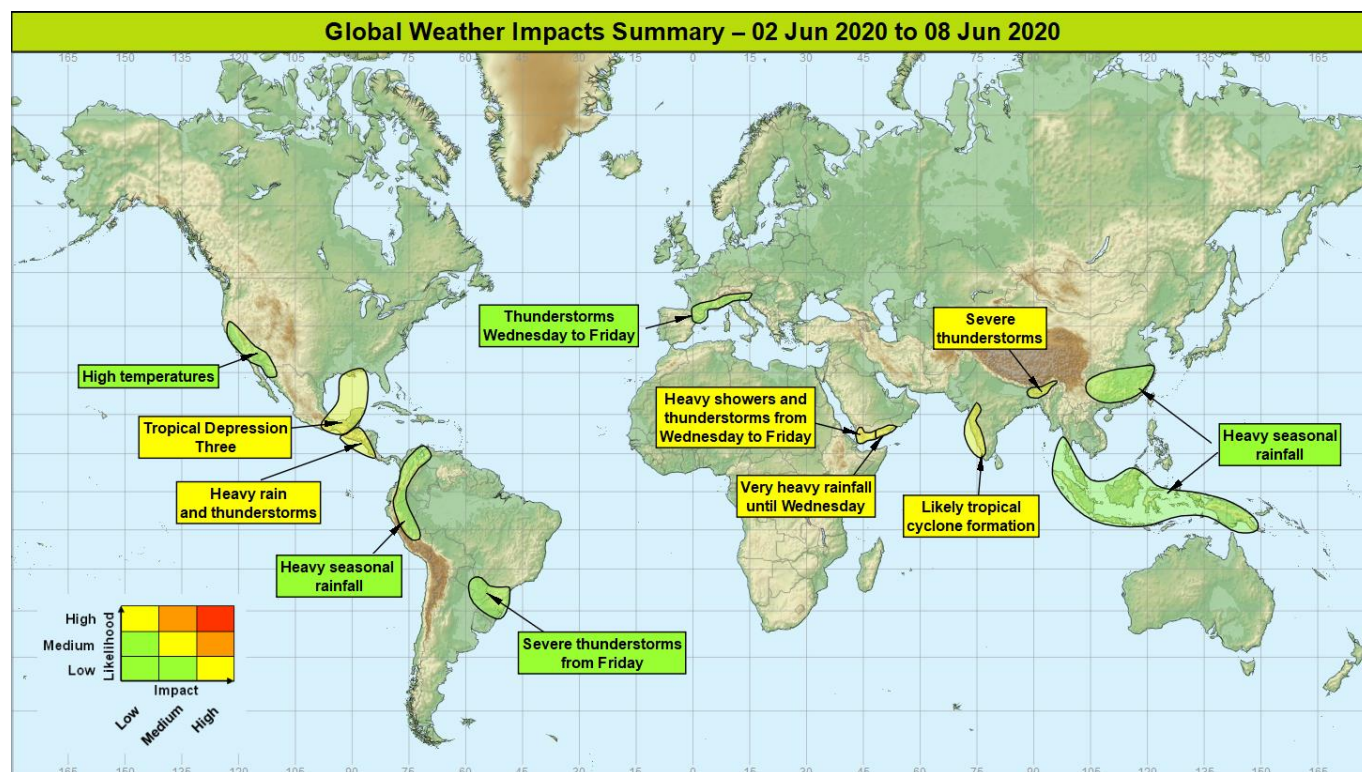


## Global Weather Impacts – Tuesday 2<sup>nd</sup> to Monday 8<sup>th</sup> June 2020

Issued on Tuesday 2<sup>nd</sup> June 2020

### HEADLINES

- Heavy rainfall affecting parts of Yemen this week.
- Heavy rainfall across parts of Central America.
- Potential tropical storm development in the Gulf of Mexico, moving towards the Gulf States USA.
- Tropical cyclone likely affecting western India in the next few days.
- Further heavy rainfall and thunderstorms for Northeast India, Bhutan and northern Bangladesh.



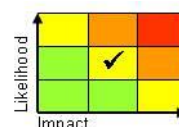
### DISCUSSION

#### Tropical Cyclones

#### Tropical Depression Three (south Mexico, north Guatemala, Belize and Gulf of Mexico)

An area of showers and thunderstorms just south of Guatemala developed into tropical storm Amanda on Sunday just prior to landfall. The storm then quickly decayed into a remnant low once across Guatemala and southeast Mexico. This system is expected to remain slow moving through much of the coming week, emerging over the south-eastern Bay of Campeche today (Tuesday). Redevelopment into a tropical storm is possible within the next 24-36 hours, before it either then heads inland and dissipates, or begins to accelerate north towards the Gulf States, USA towards the end of the week. Regardless of eventual track and development, very heavy rainfall is likely to continue over portions of southern Mexico, Guatemala and Belize during the next 4 or 5 days, with widespread 150-300mm accumulating (around the average rainfall for the whole of June), and peak totals of up to 1000mm by the end of the week. If this system does track north into the Gulf of Mexico, this would ease the rainfall to the south, but bring a threat of strong winds, heavy rainfall and very rough seas to the southern Gulf states over the weekend.

#### Discussion



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A Central American Gyre over the eastern North Pacific has led to a broad cyclonic circulation across parts of southern Mexico and Central America. Winds around the gyre continue to advect abundant moisture into portions of Central America and southeastern Mexico. This will help maintain the activity of the remnants of tropical storm Amanda in the coming week. There is a growing model signal for this system to be steered north ahead of an extending upper trough, with increasing signals for this to develop into a tropical storm across the Gulf of Mexico in the coming days.

### **Expected Impacts**

Flash flooding and mud/landslides, especially in area of mountainous terrain of Central America. Dangerous sea conditions look likely if a tropical storm develops in the Gulf of Mexico this weekend.

*The following area is being monitored for potential development:*

### **Eastern Arabian Sea (Western India)**

#### **Weather**

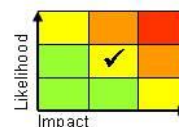
An area of heavy showers and thunderstorms associated with a Deep Depression currently located offshore to the west of Goa will be steadily steered northwards and is likely to imminently develop into a Cyclonic Storm (both with wind-speeds in the range equivalent to an Atlantic Tropical Storm) This cyclone looks most likely to make landfall close to Mumbai on Wednesday or Thursday as a Severe Cyclonic Storm with sustained wind speeds of around 70 mph on landfall. Heavy rainfall will be seen along the coastal areas of western India, with widespread accumulations of 200mm and peak totals of 500mm. A modest storm surge is also possible.

#### **Discussion**

Satellite imagery continues to highlight an area of enhanced convection west of Goa associated with a tropical depression. This is expected to intensify as it moves across SSTs exceeding 30°C and an environment of lowering wind shear to become a tropical cyclone. Most likely sometime later today. Once formed the cyclone is most likely to move N, then curve NE'wards to make landfall close to Mumbai on Wednesday.

### **Expected Impacts**

Flash floods and landslides look the most likely impacts, but with a threat of damaging winds close to the landfall location of this system. Hazardous maritime conditions can also be expected, with a lower threat of coastal flooding for any storm surge.



### **Europe**

### **Northeast Spain, southern France, northern Italy and Slovenia**

#### **Weather**

Heavy showers and thunderstorms will develop across north eastern Spain later on Wednesday, transferring into southern France and northern Italy through Thursday as they become more widespread and perhaps severe. Through Friday the heavy showers and thunderstorms are then expected to transfer east into Slovenia before becoming less significant as they clear to the east.

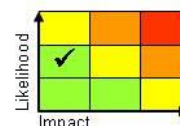
Rainfall totals look most significant for parts of northern Italy, with up to 150mm possibly falling in just 24 hours, which is around the average rainfall for the whole of June. As well as heavy rainfall, frequent lightning, hail, and locally strong wind gusts are likely, with storms likely persisting well into the night-time period.

#### **Discussion**

A major upper trough extension/disruption will take place across western Europe towards the middle of this week, engaging the resident warm plume. This will generate an area of significant destabilisation leading to frequent, and potentially severe thunderstorms. Whilst there are inevitable model differences at this range there is a consistent signal for this broad evolution.

### **Expected Impacts**

Some disruption to transport, homes and businesses is possible given the potential for localised flash flooding.



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## North America

### Southwest USA, northwest Mexico

#### **Weather**

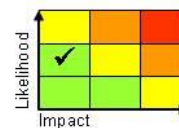
Temperatures in excess of 40°C are expected across this area over the next few days, initially in the south of the highlighted region but expanding towards California. Higher than normal temperatures and enhanced fire weather conditions are expected widely across the western US over the next few days, but the area highlighted is expected to experience the highest of these.

#### **Discussion**

A broad plume of warm air and associated ridging will affect parts of western US in the coming week. Whilst high temperatures are not too unusual in this part of the world, the prolonged nature of temperatures 5-8°C above normal may begin to cause impacts.

#### **Expected Impacts**

Heat stress impacts on vulnerable populations and livestock. Increased risk of wildfires.



## Central America and the Caribbean

### Southern Mexico, northern Guatemala and Belize— see *Tropical Cyclones* section.

### Southern Guatemala, El Salvador, southern Honduras and western Nicaragua

#### **Weather**

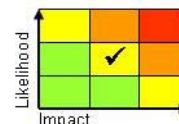
Heavy rain and thunderstorms is expected to affect this region in the coming week, with up to 400mm of rainfall in places by the end of this week. The average June rainfall in this region is 150-300mm.

#### **Discussion**

A broad cyclonic circulation (Central American Gyre) is resident across parts America. The very moist winds associated with the gyre will enhance the heavy rain and thunderstorm activity in the coming week.

#### **Expected Impacts**

Flash flooding and mud/landslides, especially in area of mountainous terrain.



## South America

### Western Colombia, eastern Ecuador, and far west of Venezuela

#### **Weather**

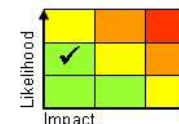
Enhanced heavy shower and thunderstorm activity is expected over the week. Each day there is a chance of 50-100 mm falling within a short period in places. The wettest areas are likely to be west of the Andes in Colombia and east of the Ecuadorian Andes with locally 200-300 mm of rain building up in the wettest areas.

#### **Discussion**

Although there is likely to be a gradual downward trend in shower activity through this week, compared to recently, models consistently signal around 200-300mm in the wettest locations. Whilst this is typically the wettest time of the year, parts of this region have been especially wet over the past few weeks and months.

#### **Expected Impacts**

Slightly heightened threat of flash flooding and landslides than normal for the time of year.



### Eastern Paraguay, far northwest Argentina and far south of Brazil

#### **Weather**

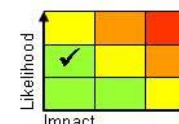
An area of heavy rain and thunderstorms is likely to become more significant from Friday, with up to 50-100mm perhaps falling in some places in a 24 hour period.

#### **Discussion**

A slow moving baroclinic zone will remain slow moving this week across the region, but will become much more active later this week as an upper trough disrupts to the south, with the resultant vortex slowly tracking east across the region.

#### **Expected Impacts**

Flash flooding is possible later this week with a threat of landslides in more mountainous areas.



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**Africa**

Nil significant.

**Middle East****Southern Yemen****Weather**

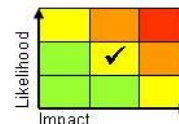
A tropical disturbance will slowly move westwards across the coast of southern Yemen through the next few days. This will result in the very heavy rainfall, with the south of the Hadramaut region of Yemen the main focus, with up to 400mm of rain likely to accumulate. This is a very dry part of the world, with the average June rainfall of just around 15mm suggesting that this is a rare event. Through the rest of the week the system will weaken as it tracks further west.

**Discussion**

An Equatorial Rossby Wave moved west over the Arabian Sea and formed a tropical depression near the coast of southwest Oman over the weekend. The seasonal Somali low-level jet has become established and is likely helping to focus moisture in this disturbance. Orographic enhancement in this region has led to some extreme rainfall in the last few days across parts of southwest Oman and southeast Yemen. There is good model agreement for the system to will be slowly steered away south-westwards whilst degrading, but the remnants provide significant moisture and instability to generate heavy daily showers and thunderstorms as it moves across parts of southern Yemen. Some model differences for the precipitation details of this degrading system, but overall the UKGM should provide reasonable guidance.

**Expected Impacts**

Flash flooding has already been reported across this region, with further significant flash flooding expected.

**Western Yemen****Weather**

Increasingly heavy showers and thunderstorms are expected to develop across this part of Yemen from Wednesday as the remnants of the tropical disturbance (see above) move westwards. Up to 50-80mm of rain is likely to fall in the heaviest showers, with 2 or 3 days of enhanced shower activity expected until the end of the week.

**Discussion**

The remnants of the tropical disturbance described in the previous section will be drifting across this region from mid-week. Whilst rainfall is not expected to be as exceptionally heavy (hence the lower impact assessment), daily heavy showers and thunderstorms are expected at what is generally an increasingly dry time of the year.

**Expected Impacts**

Threat of flash flooding and landslides will be increased compared to what is usual at this time of year.



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## Asia

### Northeast India, Bhutan and northern Bangladesh

#### **Weather**

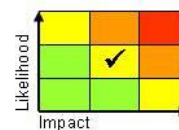
Severe thunderstorms are expected to continue to affect this region over the coming week. Many areas are likely to receive in excess of 150mm of rain per day during this time, with locally in excess of 400mm possible to the north of Dhaka. In addition to heavy rainfall, damaging hail, strong winds and a few tornadoes are possible. Shower activity may begin to decline towards the end of this period.

#### **Discussion**

Persistent moisture advection from the Bay of Bengal and minor disturbances embedded within the westerly upper flow south of the Himalayas will provide a highly supportive environment for severe convection with a combination of high instability and high shear in the coming week.

#### **Expected Impacts**

Although this region commonly experiences heavy rainfall at this time of year, this follows the recent passage of Cyclone Amphan and rainfall amounts over the next few days will continue to be above average. Flooding and landslides are probable. Crops, property and infrastructure could also see further damage.



### Southern China

#### **Weather**

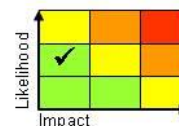
Heavy rainfall is expected over the coming week associated with the seasonal Mei-yu front. Some places are likely to see 100-150mm per day in association with heavy and persistent rain across quite a wide area of central and southern China. 300-500mm of rainfall are most likely in total across the worst affected areas.

#### **Discussion**

Increasing southerly flow into South China will enhance moisture and wind convergence associated with the seasonal Mei-yu front, leading to episodes of heavy rain and thunderstorms. Whilst the upper flow is not especially conducive so large scale development, a number of short-waves embedded within the flow will continue to trigger rainfall across a similar area along the quasi-stationary front, leading to large rainfall accumulations building up.

#### **Expected Impacts**

Risk of flash flooding, and localised landslides will be the primary impact.



### Southern Thailand, Malaysia, Singapore, Indonesia and Papua New Guinea

#### **Weather**

Showers and thunderstorms are expected to be a little more frequent than normal across the region this week. Parts of Borneo, Sulawesi and Papua in Indonesia are most likely to receive above average rainfall during this period.

#### **Discussion**

The MJO is now analysed in Phase 1 which would typically see suppressed convection over the Maritime Continent. However above average rainfall is still signalled in places, and this may be due to SSTs being widely a degree or so above average.

#### **Expected Impacts**

Slightly increased likelihood of flash flooding and landslides, particularly given recent impacts in East Kalimantan, West Java, South Sumatra and East Nusa Tenggara over recent of weeks.



### Australasia

Nil.

## Additional Information

### Cox's Bazar, southeast Bangladesh

There will be a threat of a heavy shower or thunderstorm most days, especially through the next few days, but with only a low likelihood of any flash flooding impacts. This activity is likely to be well below what is usually expected for early June.

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**Western Yemen**

See section in main text

**Tristan da Cunha**

Cloudy with a few showers today. However strong NW'ly winds are likely to develop overnight in association with a deep area of low pressure as it moves gradually well to the south. The strong winds expected to last through until the end of Thursday. These winds not expected to be as strong as they have been in the last day or so.

**Issued at:** 020700UTC

**Meteorologist:** Tony Wardle / D J Harris

**Global Guidance Unit**

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

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