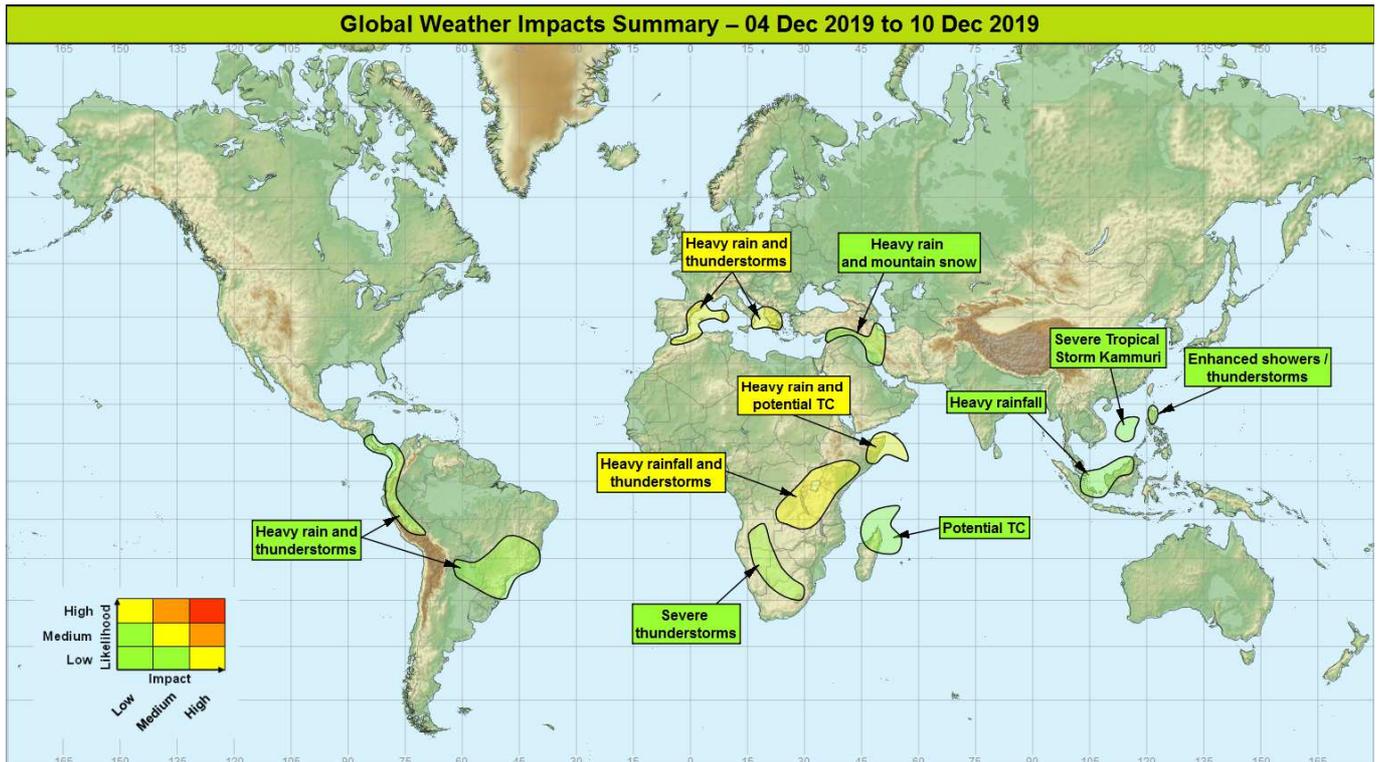


## Global Weather Impacts – Wednesday 4<sup>th</sup> to Tuesday 10<sup>th</sup> December 2019

Issued on Wednesday 4<sup>th</sup> December 2019

### HEADLINES

- Severe Tropical Storm Kammuri now clear of the Philippines weakening over the South China Sea.
- Potential for tropical storms to form over the western Indian Ocean.
- Heavy rain and thunderstorms over parts of southern Europe and northwest Africa over the next couple of days.
- Continuing wetter than normal across parts of central and eastern Africa.



### DISCUSSION

#### Tropical Cyclones

#### Severe Tropical Storm Kammuri

##### Weather

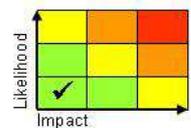
Kammuri has now moved clear on the Philippines and is expected to dissipate over the South China Sea over the next few days. Kammuri will in part be responsible for continued heavy rain over northern parts of the Philippines over the coming days (see Asia section) .

##### Discussion

Now over the South China Sea Kammuri is consistently signalled to curve to the S as a mid-latitude trough approaches where interaction with a cold surge will lead to a rapid weakening and eventual dissipation of the system.

##### Expected Impacts

Apart from continuing rough seas and dangerous maritime conditions over the next day or so no further impacts are expected.



This forecast may be amended at any time

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The following regions are being monitored for possible impactful tropical cyclone development.

## Western Indian Ocean Weather

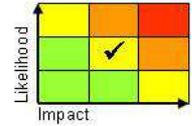
An area of organised showers and thunderstorms near 7° north, 57° east looks likely to develop into a tropical storm over the next 24 hours. This system is likely to track slowly west toward the Somali coast, with landfall likely toward the end of this week, probably as a weak cyclonic storm (equivalent to a tropical storm) or a tropical depression. Torrential rainfall (100-200 mm, locally up to 300 mm) and strong winds are likely across parts of northeastern Somalia, mainly the Bari Region.

### Discussion

Weak wind shear and SSTs some 1 to 1.5°C above normal (a result of the ongoing positive Indian Ocean Dipole event) have allowed convection to become better organised, with continued evidence from imagery of a low level circulation. Conditions are likely to remain favourable during Wednesday and Thursday for further modest strengthening with models in good agreement for a steady westward progression. This will take the storm toward the coast of northeastern Somalia, where it will encounter increased shear which should prevent further strengthening before a likely landfall towards the end of the week.

### Expected Impacts

The main impacts are likely to be from flash flooding with only a small risk of impacts due to strong winds.



## Western Indian Ocean Weather

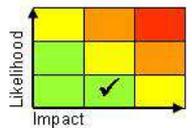
The region of enhanced convection to the northeast of Madagascar remains very disorganised. There is still a signal from models for the development of a tropical storm in this region which then looks likely to track toward northern Madagascar next weekend where it could potentially bring torrential rainfall and damaging winds.

### Discussion

Although developments here have been slow, the same factors which allowed development in the northern hemisphere exist. There remains good agreement between models for a system to form, although there is a large spread in forecast tracks. The most likely track is towards the north of Madagascar but some solutions suggest it could end up in the Mozambique Channel, this appears to be only a very low probability solution, while others prefer a track toward La Reunion and Mauritius.

### Expected Impacts

Potential for torrential rainfall to bring flash floods to northern parts of Madagascar, along with damaging winds and an enhanced landslide risk. There is a smaller risk of similar impacts to La Reunion and Mauritius.

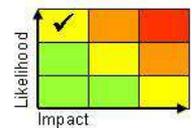


## Europe Parts of Spain, France, Italy, Albania and Greece as well as northern Morocco and Algeria Weather

Heavy showers and thunderstorms slowly move east across these areas over the next couple of days before conditions improve. Severe thunderstorms are possible in places giving torrential downpours, large hail and frequent lightning strikes. Rainfall accumulations will be highly variable across the region with some locations having very little and others as much 100-150 mm (much of this falling in 6 to 12 hours). Strong winds are also expected across eastern Spain with some mountain snow for parts of Albania and Greece.

### Discussion

During today another trough will extend into the already in-situ upper vortex over NW Africa. This vortex then set to slowly move east and elongate over the next couple of days. As the associated surface low drifts NE into the Mediterranean, it is likely to bring gales and spells of heavy, locally thundery rain. Precipitation will be strong orographically modulated, with eastern parts of Spain particularly prone.



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## Expected Impacts

Flash flooding is likely with a possibility of landslides.

### North America

Nil

### Central America and Caribbean

**Costa Rica & Panama** – see South America section

### South America

#### Western Colombia, Ecuador, Peru, Costa Rica and Panama

##### Weather

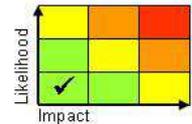
Heavy showers and thunderstorms are expected in this region over the next 7 days. 50-100 mm is likely to fall in a few places in a 24 hour period, with the potential for over 300 mm in a few spots over the week. Northern parts of the region has been slightly wetter than usual over the past month, and rainfall amounts over the coming week represent around a further month's worth of rainfall for the wettest spots.

##### Discussion

A combination of continued enhanced convection, and wetter than normal antecedent conditions, has helped to identify this region as the most likely to see impacts. Models signal 100-300mm of rain, mainly triggered by upslope motion on the western Andes. Furthermore, what appears to be Central American Gyre is signalled to become established, enhancing precipitation further.

##### Expected Impacts

Flash and river flooding with landslides possible in mountainous areas.



#### Paraguay, far north Argentina and southern Brazil

##### Weather

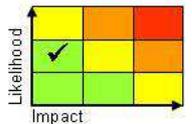
Heavy showers and thunderstorms are expected during Wednesday and Thursday. 50-100 mm of rainfall in a few hours is possible with a few places perhaps seeing 150-250 mm over a period of a couple of days. Additional hazards include frequent lightning strikes, large hail and a risk of tornadoes.

##### Discussion

An upper trough relaxing NE will reactivate the SACZ through midweek. This will manifest in a marked increase in shower and thunderstorm activity, with some torrential downpours and severe convection, as well as a few tornadoes, likely.

##### Expected Impacts

Increased likelihood of flash flooding causing a danger to life, damage to property and infrastructure. Frequent lightning strikes and large hail are also possible, with a lower risk that tornadoes could also produce localised significant damage.



### Africa

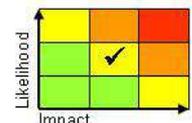
#### Parts of central and eastern Africa

##### Weather

Showers and thunderstorms associated with the seasonal rains are expected to continue to be heavier than normal over the next week, with a further 100-200mm of rain falling in places from frequent heavy, thundery, afternoon downpours. Much of this area has seen 200-400% of the usual rainfall over the past week.

##### Discussion

Enhanced seasonal rainfall in association with the strong positive Indian Ocean Dipole event which, although declining, is still in full swing. Large tracts of eastern Africa have seen well above average rainfall over the past 3-6 months. The combination of all these factors dramatically increases the likelihood of further flash and river flooding. However, as compared to recent weeks, the focus for the coming week appears to be further west.



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## Expected Impacts

An increased risk of flash flooding and landslides in the region, with further river flooding likely. Frequent lightning is also likely, along with large hail and strong wind gusts.

### Southern Africa

#### Weather

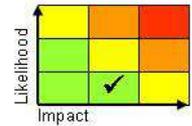
Widespread heavy showers and thunderstorms will affect the region until the end of the week. Around 30-50mm of rain will fall quite widely each day, with some locations receiving up to 150mm daily. By the end of the week, accumulations of up to 250mm are possible, which would be around twice the monthly average in many parts of the region.

#### Discussion

A sharp mid-latitude upper trough will interact with a moisture plume of tropical origin to produce widespread heavy showers and thunderstorms. Very high PWAT and moist profiles suggest some very intense downpours are possible, with the possibility of some long-lasting severe storms, especially in the south of the region in Botswana, northern parts of South Africa and parts of Namibia.

#### Expected Impacts

Rainfall will be largely welcome as this region of Africa has suffered droughts in the recent past. However, such intense downpours will generate flash flooding and landslides, potentially damaging infrastructure and crops.



Morocco and northern Algeria – see *Europe* section

Madagascar and Somalia – see *Tropical Cyclones* section

### Middle East

#### Parts of Syria, Iraq and western Iran

#### Weather

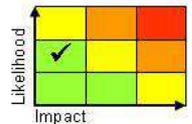
Following a brief dry interlude, further heavy rain and mountain snow will affect the region during Thursday to Saturday. The heaviest and most widespread precipitation will fall across northern Iraq and northwest Iran. Here 50-100mm of rain is likely.

#### Discussion

An active cold front, driven SE by a disrupting upper trough will bring heavy precipitation to parts of the Levant later this week. The resultant cut-off upper vortex and cold pool will maintain the risk of heavy showers into the weekend across northern Iraq and Iran. Strong cold advection will lead to a significant risk of snow over high ground.

#### Expected Impacts

Flash and river flooding, landslides, and disruption to transport and travel are likely.



### Asia

#### Philippines

#### Weather

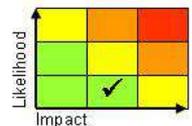
Enhanced showers and thunderstorms are likely to affect north-eastern Luzon through the next couple of days. These could produce a further 200-300 mm locally.

#### Discussion

Enhanced NE flow in the wake of Kammuri will feed showers and thunderstorms into NE Luzon through the next 24 to 48 hours.

#### Expected Impacts

Increased risk of flash flooding. Risk of landslides.



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**Parts of Malaysia, Indonesia and Brunei Sumatra****Weather**

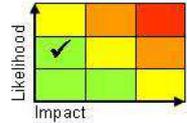
Even though it is the 'rainy season' in this region, heavy rainfall is expected through the next week, with some places seeing up to 300 mm (equivalent of 50-75% of the average monthly rainfall at this time of year).

**Discussion**

A combination of a weak MJO moving across the Maritime Continent and a surge in the Northeast Monsoon, are likely to enhance convection somewhat through this week.

**Expected Impacts**

Increased threat of flash flooding and landslides.

**Australasia**

Nil.

**Additional Information**

**Eastern Australia – Wildfire:** Numerous bushfires continue in parts of eastern New South Wales, Queensland and Australian Capital Territory with 'severe' conditions forecast again across parts of these areas on Thursday and Friday.

**Indian Ocean – Tropical Storms:** Two further tropical depressions presently exist on the Indian Ocean, one in the Arabian Sea west of India, and another in the central South Indian Ocean. While both of these systems may strengthen to become tropical storms, neither is expected to affect land.

**Issued at:** 040815 UTC    **Meteorologists:** Chris Bulmer and Mark Sidaway    **Global Guidance Unit**

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

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