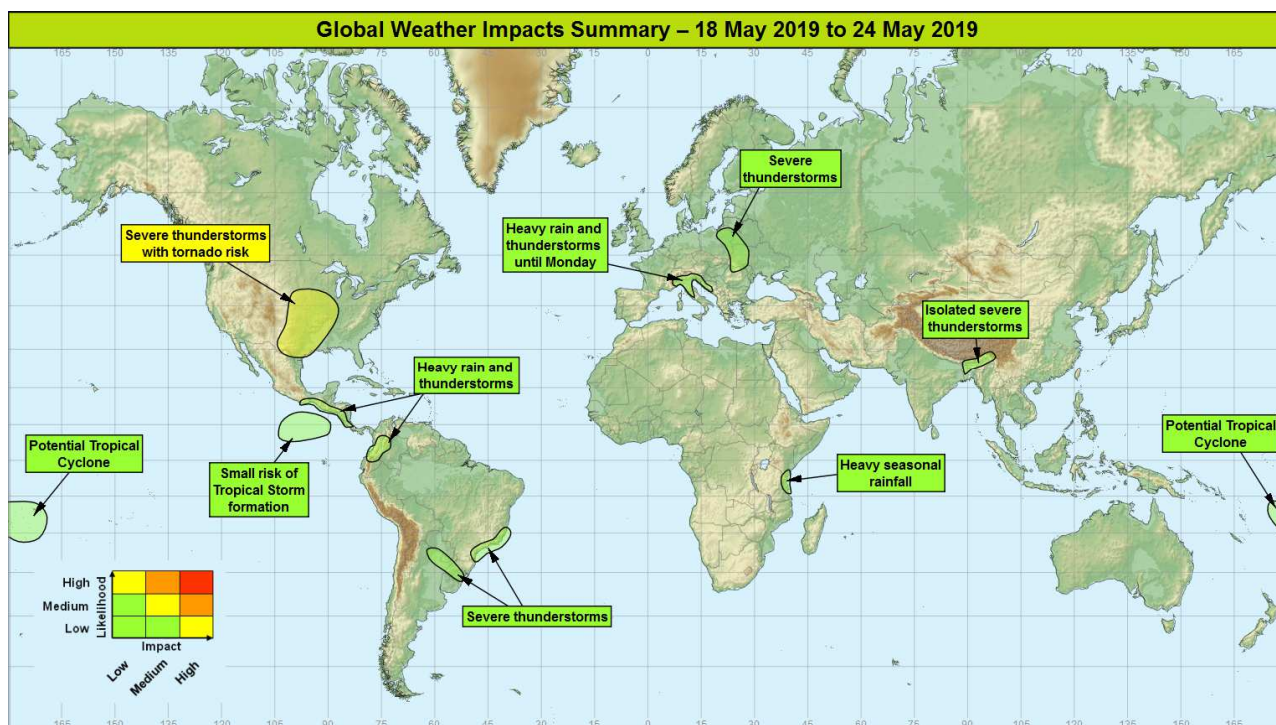


Global Weather Impacts – Saturday 18th to Friday 24th May 2019

Issued on Saturday 18th May 2019

HEADLINE

- Severe thunderstorm and tornado outbreak across the central and southern Plains of the USA.



DISCUSSION

Tropical Cyclones

There are no tropical cyclones at time of issue. The following areas are being monitored for potential development:

Southwest Pacific (Fiji and Samoa)

Weather

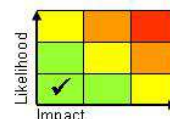
A cluster of thunderstorms over the open ocean approximately 800km north-northwest of Fiji could organise into a weak tropical cyclone over the next few days.

Discussion

Ensemble output highlights this area as having increased potential for tropical cyclogenesis over the next few days. The signal from global deterministic models is rather muted – should a cyclone develop it is likely to be weak in terms of wind but some output suggests significant rainfall for the islands in the region, with over 250mm being signalled northeastern parts of Fiji and Samoa.

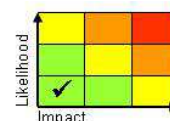
Expected Impacts

Should a cyclone develop, it is most likely to stay over open water and be relatively weak before dissipation. The main impact would be from heavy rain and attendant increased risk of flash flooding.



Northeast Pacific (Mexico)

Weather



This forecast may be amended at any time

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An area of persistent shower and thunderstorm activity south of the Mexican Pacific coastline may gradually develop as it drifts slowly eastward over the coming week. There is a low risk of a tropical storm forming in this area early next week.

Discussion

Shear instability along the ITCZ which has now migrated to around 8°N in this region will likely result in the development of a shallow low level circulation. This may organise thunderstorm activity around it, and in cooperation with the favourable oceanic and atmospheric conditions in this area may allow the gradual development of a tropical storm.

Expected Impacts

Nil during this period as the weak circulation remains over open water away from land.

Europe

Northern Italy, Slovenia, Croatia and Bosnia and Herzegovina

Weather

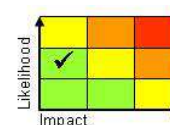
Areas of heavy rain and organised thunderstorms will continue to affect the area over the weekend. These could locally 50 mm of precipitation in a short space and time. Although showers and isolated thunderstorms will continue in this region next week, from Monday they are expected to become less severe.

Discussion

A two stage trough extension and disruption will take place across the western Med this weekend. This will aid the generation of a surface low that will draw warm moist air northeastwards from Africa, this will then destabilise beneath the upper vortex/cold pool. Although a cyclonic upper pattern will remain across this region early next week, the air beneath it will be cooler and drier, which in addition to reduced wind shear will equate to less numerous and organised storms.

Expected Impacts

Flash and alluvial flooding is likely in places, with recent fluvial flooding across Bosnia and Herzegovina as well as Italy highlighting the sensitivity in some parts of this region to additional heavy rainfall. Frequent lightning and a threat of hail are additional hazards.



Poland, Ukraine, Belarus, Romania and Moldova

Weather

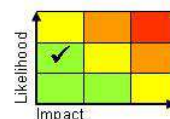
Over the weekend and during next week, each day thunderstorms will develop in the area, most severe during the afternoon and evenings. Whilst many areas will avoid the worst of the conditions, where severe thunderstorms do form rainfall in the order of 25-50mm could fall within a few hours. There is the potential for some parts of the region to see totals in excess of 100mm building up although the location of the heaviest rainfall is very uncertain. Hail, strong wind gusts and lightning are also in expected associated with thunderstorms.

Discussion

Various trough extensions and disruptions (as mentioned in the previous section) will maintain a meridional and often cyclonic upper flow across this region. This will act to destabilise the underlying warm and moist airmass. Given that CAPE is in excess of 2000 J/kg, some very severe storms are likely, with a low level windshear profile that supports rotating updraughts.

Expected Impacts

Flash flooding likely in places, additional albeit very localised impacts likely from large hail, lightning, strong winds gusts and a possibility of the odd tornado.



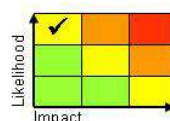
North America

Central and southern Plains of the USA

Weather

There is a threat of severe thunderstorms in this region of the USA which is expected to last well into next week. Whilst not all areas will see thunderstorms damaging winds, large hail and tornadoes are expected to develop in places. Where the most severe storms develop, 150-250 mm of rain can be expected.

Discussion



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A major trough extension and then disruption across the Desert Southwest is phasing in with marked baroclinicity on its forward side. The low (unusually deep for May: sub-995hPa) is then expected to track NE across the central US. Within the broad warm sector, predominant S'y flow is signalled to draw theta-W in excess of 23°C N. As upper lapse rates increase, CAPE in excess of 2000-2500J/kg is likely. Add to this marked shear, and all the ingredients are there for a severe convective outbreak. This pattern is repeated again from Monday, with this time a sub-990hPa surface low signalled.

Expected Impacts

Flash-flooding, large to extremely large hail, damaging winds and strong tornadoes are all likely. Disruption to infrastructure as well as transport across the area (including major disruption to aviation) can also be expected. There is a high likelihood of low impacts (requiring regional resources) within this area, and a very low likelihood of medium impact events (requiring national resources) if any particularly severe storms and/or tornadoes impact any significant population centres.

Central America and Caribbean

Southwest Mexico, Guatemala, El Salvador, Honduras, Nicaragua and Costa Rica

Weather

Showers and thunderstorms are likely to become more frequent and persistent across the area over the weekend, continuing into the middle part of next week. 50-100 mm of rain could fall locally daily, with some areas seeing 250-300 mm of rain by the end of the period. For context, the average rainfall total for Acajutla (Pacific coast of El Salvador) for May is 168.8 mm.

Discussion

The MJO is expected to continue to propagate E across the western hemisphere, ramping up convection as it does so. Activation of the ITCZ looks like being most marked along the Pacific coast of parts of Central America, and it is here that forecast profiles support deep convection. Large amounts of precipitable water are available, as well as copious amounts of CAPE (3000J/kg), the heaviest precipitation next week looks to be associated with the potentially enhanced flow ahead of the potential tropical storm development area.

Expected Impacts

Flash-flooding, landslides in what is a mountainous area, and gusty winds are all likely.



South America

Colombia and Ecuador

Weather

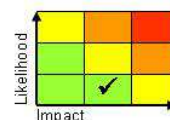
Heavy seasonal rainfall is expected across this region through the coming week with daily rounds of frequent heavy showers and thunderstorms. Where the showers occur most frequently a further 300-400 mm of rain could accumulate, which is close to the average for the whole of May in the wetter Colombian sites.

Discussion

Good model agreement for another spell of heavy seasonal rainfall towards the end of what has been an active rainy season in this region. This active period of weather is likely to be due to the passage of the MJO.

Expected Impacts

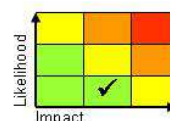
Further flash flood and landslide events seem increasingly likely through next week, threatening transport infrastructure and settlements in the region.



Southeast Brazil, Uruguay, Paraguay and northeast Argentina

Weather

Heavy showers and severe thunderstorms will continue across this region until the end of the weekend, with each day the focus of the heaviest rainfall should tend to drift northwards. Whilst not all areas will see the most intense rainfall each day, 50-100 mm of rain could fall in places within a few hours. The average rainfall in this region for May is 100-200 mm. As this first area of intense rainfall subsides on Monday, a further pulse in activity across is likely to form across northeast Argentina and also begin to progress northeastwards.



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Discussion

The South Atlantic Convergence Zone will remain active over the coming days. SSTs will be sufficiently high to trigger deep convection and with an onshore flow this will mean the heaviest and most frequent rain will tend to be focused near the coast. As the first region of thunderstorms weakens on Monday as the driving trough relaxes and moves offshore, a further burst in activity is likely to begin across northeast Argentina in response to a further mid-latitude trough extension.

Expected Impacts

Localised flash flooding and increased chance of landslides in mountainous areas. Large hail, strong winds and frequent lightning are additional hazards which may cause damage to property and disruption to transport and utilities. Parts of this region have seen a wetter than usual rainy season, and so further rainfall could result in river flooding. Although exactly where the heaviest rain will fall is uncertain the area does include some densely populated regions (including Sao Paulo and Rio de Janeiro).

Africa

Eastern Tanzania and far southeast of Kenya

Weather

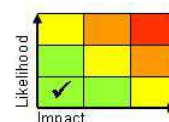
Heavy seasonal rains continue, with numerous showers and thunderstorms drifting into coastal regions off the Indian Ocean. Over the last week or so these areas have been much wetter than average (receiving 200-300% of average rainfall amounts). Most of the heaviest rain will be offshore but there is small chance of very heavy rainfall affecting some of the coastal cities here at times.

Discussion

The inter-tropical convergence zone will maintain the focus for frequent heavy showers and thunderstorms across eastern Tanzania and the extreme southeast of Kenya. Increasing south-westerly flow to the south of the ITCZ (associated with developing monsoonal flow in the Indian Ocean Basin) and the passage of an Equatorial Rossby Wave (ERW) will also contribute to the enhancement of showers and thunderstorms in this region.

Expected Impacts

Further flash flooding and damage to property and infrastructure is possible in large cities like Dar es Salaam and Mombasa, plus the popular tourist destination of Zanzibar.



Middle East

Nil significant.

Asia

Northeast India, Bhutan, northern Bangladesh and northern Myanmar

Weather

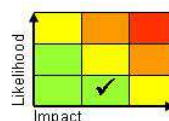
Severe thunderstorms are likely to affect the region during the next week. As well as intense rainfall (up to 150 mm daily although many areas will miss the heaviest rain), large hail and strong winds are possible.

Discussion

Various shortwave upper troughs moving northeast in the sub-tropical jet over northern India and Nepal will lead to destabilisation of the airmass and the development of diurnal thunderstorms. High CAPE and vertical wind shear will aid the development of severe, long-lasting storms, with hail and strong winds additional hazards.

Expected Impacts

Localised flash flooding and increased chance of landslides in mountainous areas. Large hail, strong winds and frequent lightning are additional hazards which may cause damage to property and disruption to transport and utilities.



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Daily Global Weather Impacts Assessment

Australasia

Fiji and Samoa – See *Tropical Cyclones* section.

Additional information

Nil.

Issued at: 180530 UTC **Meteorologists:** Chris Bulmer

Global Guidance Unit

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