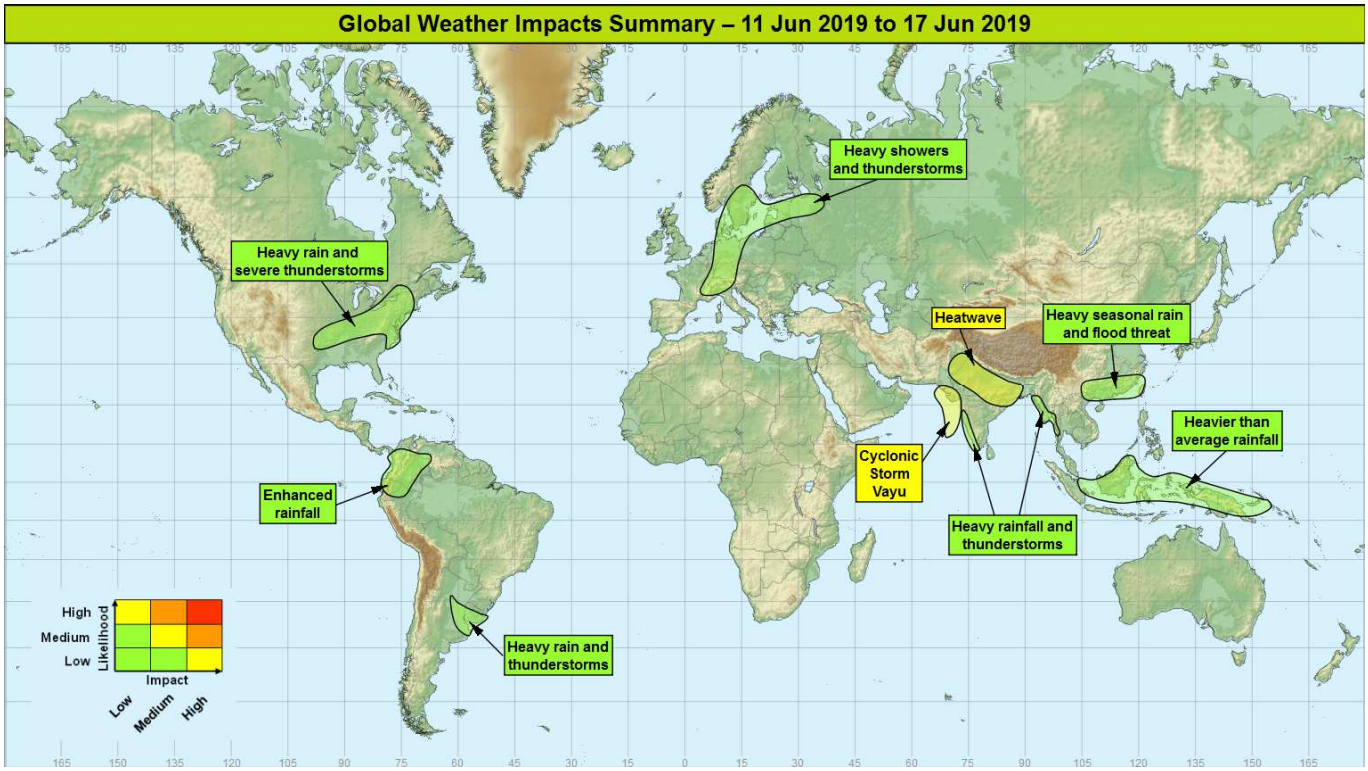
Daily Global Weather Impacts Assessment

Global Weather Impacts – Tuesday 11th to Monday 17th June 2019

Issued on Tuesday 11th June 2019

HEADLINES

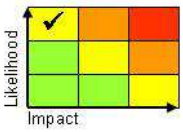
- Cyclonic Storm Vayu has formed in the eastern Arabian Sea, and is expected to track north towards Gujarat where a landfall is expected on Thursday.
- A significant heat wave continues across parts of northern India.



DISCUSSION

Tropical Cyclones

Cyclonic Storm Vayu, Arabian Sea, including western India



Weather

An area of organised thunderstorms in the eastern Arabian Sea has consolidated in to Cyclonic Storm Vayu overnight. The system currently has mean wind speeds of 45 mph, and gusts to 55 mph. It is expected to track northwards off the west India coast line over the next couple of days, and is expected to intensify to become a Very Severe Cyclonic Storm with mean wind speeds of 75mph, and gusts of 85mph. Landfall is expected over Gujarat, most likely early on Thursday. Although some weakening is possible prior to landfall, strong winds and heavy rain (locally in excess of 500mm) are still expected.

Discussion

An Equatorial Rossby Wave couplet in the wake of the MJO provided the focus for the area of organised deep convection that has now consolidated into Cyclonic Storm Vayu. This system will continue to progress north and move into an area of favourable environmental conditions for development over the next 24 hours or so, although is expected to experience vertical shear which will weaken the storm prior to landfall.

This forecast may be amended at any time
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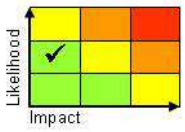
Expected Impacts
Dangerous maritime conditions with large waves and fairly strong coastal winds along the coastline of Western India. Potentially damaging winds may be present as the centre of the cyclone makes landfall across Gujarat early Thursday. Heavy rain associated directly with the system is only expected to affect Gujarat Province of India, and the far southeast of Sindh province where both flash and flooding of smaller river catchments is possible.

Europe

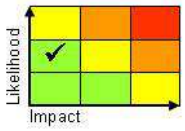
Central and north-eastern Europe



Weather
Further thunderstorms are likely across much of central and north-eastern Europe for much of the next week, becoming organised at times within the highlighted area. Some places could see 75-100mm of rain in a relatively short space of time, the Alps in particular a focus where in excess of 200mm may fall over the next few days as repeated storms develop in this region.
Discussion
A warm continental plume ahead of a waving frontal zone across central parts of Europe will be the focus for severe thunderstorms as a major upper vortex becomes established across western Europe. Forecast profiles show large CAPE (in excess of 2000 J/Kg), with enough vertical wind shear to produce organised deep convection with the potential for MCS development. Tornadic developments are also likely at times.
Expected Impacts
Flash flooding along with power outages and disruption to the transport networks (especially aviation) is possible. Hail is likely to cause disruption to transport and damage to crops, some buildings and vehicles. Isolated tornadoes are also possible.

North America

South-central, and eastern USA



Weather
Heavy rain and thunderstorms will continue to affect the highlighted regions through the next week. Some places could see over 50 mm in a 24 hour period, and in excess of 100mm over the week.
Discussion
Further plumes of warm moist air will be drawn northwards from the Gulf of Mexico and tropical Atlantic ocean into the southern and eastern United States. However with the Pacific North America (PNA) pattern now positive, the amplitude of the upper pattern across the region is much reduced. As a result only fairly modest organisation of convection is expected, with upper troughs and highest WBPT air often not co-located.
Expected Impacts
Flash flooding is the most likely impact, but frequent lightning, large hail, damaging winds and isolated tornadoes are also possible and may cause localised disruption and damage.

Central America and Caribbean

Nil significant.

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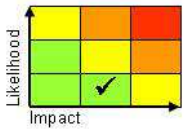
South America

North Peru, Ecuador, Colombia and Venezuela



Weather

A continuation of the enhanced seasonal rains over north-west South America is expected, with a further 250-300mm likely in some places. The highest rainfall totals most likely over west facing slopes of the Andes mountains in Colombia.

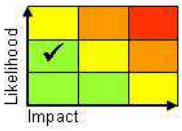
Discussion

The ITCZ remains active in the areas, with a series of African Easterly Waves helping to maintain activity along it, and through this area for the next week. The Andes will likely aid lift, resulting in orographically focused rain totals.

Expected Impacts

Further flash flooding and landslides are likely in this region, along with the potential for river flooding. This area has already experienced an anomalously wet month, which is now coming towards its end.

Uruguay and north-east Argentina



Weather

A repeating pattern of areas of heavy rain and thunderstorms associated with areas of warm, tropical air being drawn southwards is expected to affect this region over the coming week. Some places could see 50 mm, to very locally 75 mm per day, with 100-150mm in some locations over the coming week.

Discussion

The usual pattern of plumes of moist tropical air being drawn southwards and providing a focus for heavy rain and embedded, mostly elevated convection will take place over the next week. Upper forcing is relatively weak, although strong flow aloft will provide efficient exhaust for long lived and organised cells to develop.

Expected Impacts

Flash flooding, impacts mainly low but a low potential of greater impacts should this heavy rain affect urban areas such as Buenos Aires and Montevideo.

Africa

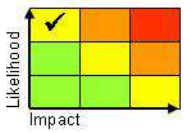
Nil.

Middle East

Nil.

Asia

Central and northern India, along with eastern Pakistan



Weather

The pre-monsoon heat wave continues across parts of central and northern India as well as eastern Pakistan. Maximum temperatures will be widely in the mid to high 40s of Celsius each day and may exceed 50 ºC very locally. In the hottest areas this around 5-10ºC above average. Overnight temperatures will remain in excess of 30ºC across much of this area. Over the next week the hottest conditions may become more confined to north and northeast India.

Discussion

The arrival of the monsoon rains into India are currently around 10 days slower than average, but may well jump northwards over the next week due to both MJO propagation, and enhanced southwest flow due to Vayu tracking north in the Arabian Sea.

Expected Impacts

Significant threat of sun and heat stress, especially affecting elderly and vulnerable groups. A detrimental effect on agriculture and power failures.

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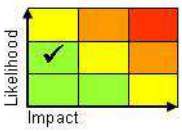
Western India



Weather

Enhanced south-westerly winds in the wake of Cyclonic Storm Vaju will draw persistent moist maritime air with heavy rain and thunderstorms to coastal regions of western India. Widely 100-200mm, and in places 300-500 mm could fall over the next 5-7 days.

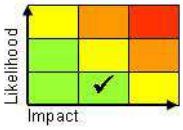
Discussion

Enhanced flow on the S flank of Cyclonic Storm Vayu will bring heavy persistent rainfall to western coastal areas of India. Profiles support the release of deep and moist convection with limited CAPE, which is very efficient at producing heavy precipitation. Many factors such as frictional convergence, surface heating, and chiefly orographic uplift will allow the continual release of deep instability in this region.

Expected Impacts

Flash and the flooding of some smaller river catchments is probable across parts of western India, although this is not so unusual in the context of the progressing Indian Summer Monsoon, and felt to be very early in the wet season for these precipitation totals to cause major impacts.

Southern Bangladesh and western Myanmar



Weather

Intense showers and thunderstorms are expected in the coming days. The heaviest rainfall is likely to fall just south of Cox's Bazar, over western facing slopes of Myanmar, although there is considerable uncertainty with the northern extent of the heavy showers. Some places could see over 500mm over the next few days.

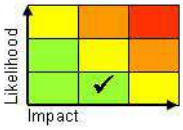
Discussion

Strong southwest winds will draw moisture northeast into Bangladesh and Myanmar leading to a threat of frequent thunderstorms and torrential rain over coast and inland mountains over the next few days. There is a weak signal for organisation around a monsoon depression on Tuesday, this may have the impact of temporarily reducing activity in the vicinity of Cox's Bazar, but heavy showers will likely return northwards later in the week increasing the risk of impacts here once again.

Expected Impacts

Flash flooding looks like the main impact, with a risk for vulnerable populations within the Cox's Bazar district.

Southern China and Taiwan



Weather

Heavy rainfall and thunderstorms will affect southern China and Taiwan over the next 5 days. Up to 300 mm of rain could fall in a few days and there is also the potential for severe thunderstorms that could produce hail and strong winds.

Discussion

Strong convergence along the monsoon frontal zone and heating of the high terrain in the moist air to its south will continue to produce heavy precipitation in the form of showers and thunderstorms. Although shear is fairly modest for mid-latitudes, in the tropics this is seemed easily sufficient for the organisation of cells

Expected Impacts

Both fluvial and flash flooding are likely to be the main impacts (especially in urban areas), with the additional enhanced risk of landslides in mountainous terrain. Disruption to transport and infrastructure is also likely in what is a densely populated area.

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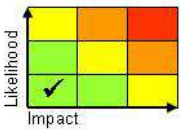

Maritime Continent

Weather

Heavier than normal rainfall is expected across this broad region over the next week, with more widespread than usual diurnal shower and thunderstorm development. Where showers occur, 25-50mm of rain in a few hours is likely, with some locations seeing over 200 mm of rain through the coming week.

Discussion

The MJO has moved into the region, bringing a broad environment conducive to more widespread than average convection. Strong and consistent model signal for above average precipitation in this location.

Expected Impacts

Localised flash flooding and increased risk of landslides in the more mountainous terrain.

Australasia

Nil significant.

Additional information

Nil.

Issued at: 110715 UTC **Meteorologists** Nick Silkstone / Chris Bulmer **Global Guidance Unit**

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