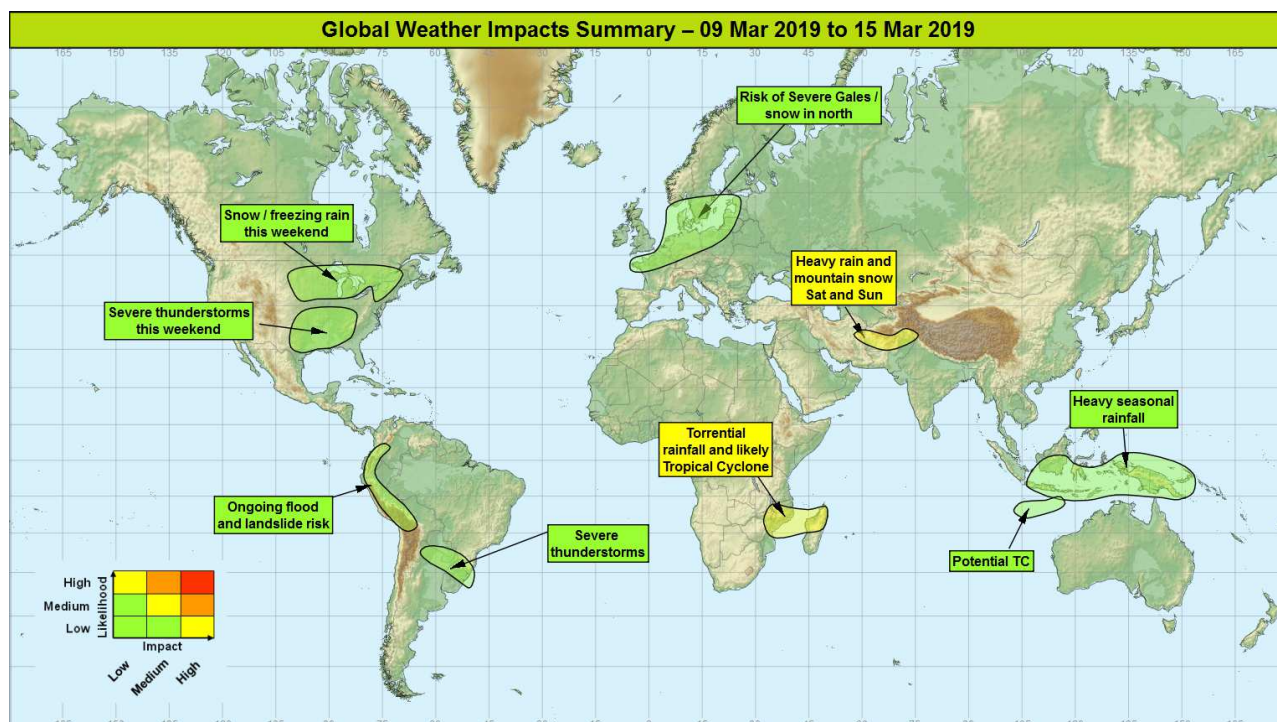


Global Weather Impacts – Saturday 9th to Friday 15th March 2019

Issued on Saturday 9th March 2019

HEADLINES

- Further heavy rainfall across parts of Iran, Afghanistan and Pakistan.
- Torrential rainfall and tropical cyclone likely formation for south-eastern Africa.
- Severe thunderstorms likely across the southern USA today with snow and freezing rain further north.
- Gales or severe gales likely to affect the near continent at times this week.



DISCUSSION

Tropical Cyclones

There are presently no named tropical cyclones globally.

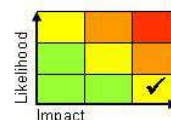
These following areas are being monitored for Tropical Cyclone development

Mozambique, southern Malawi, northern Madagascar

Weather

Showers and thunderstorms have been affecting this region of Africa for the past few days. The well marked tropical low responsible is expected to drift eastwards into the Mozambique Channel within the next 24 hours and this is likely to lead to the development of a tropical cyclone. This development is then likely to track westwards back into Mozambique, bringing further torrential rainfall. It is possible that some locations may receive 500-800 mm of rainfall during the next few days.

Discussion



This forecast may be amended at any time

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Progression of the MJO through Phase 3 into Phase 4 favours enhanced rainfall in this region, this rainfall has also been aided by an Equatorial Rossby Wave (ERW) that has recently crossed the region, maintaining the monsoon low. There have already been reports of severe flooding across southern Malawi. The low is expected to emerge across the Mozambique Channel this weekend, here the low will experience high SSTs (~30°C) and low wind shear that should allow this feature to develop into a tropical cyclone. This feature is then likely to return west into Mozambique.

Expected Impacts

Risk of further flash and river flooding which is a particular hazard in urban areas. Although large parts of the region are sparsely populated, some fairly heavily populated centres sit on the floodplains of central Mozambique. These events may disrupt travel, produce power interruptions and damage to buildings/infrastructure. If significant flooding were to occur in the major river systems of the region some crops could be lost along the farmed flood plains. Risk of impacts due to strong winds in coastal areas of Mozambique.

Timor Sea
Weather

There remains a signal for potential TC development on the Timor Sea, most likely early next week. At this stage any development is likely to remain well away from any land through this period.

Discussion

An area of enhanced convection is evident on imagery to the south of Java. As the MJO moves into the Maritime Continent (phase 4) and spawns equatorial Rossby waves in its wake, there will be an increased likelihood of TC development in this region, most likely early next week. Models differ as to where this is most likely to occur however, perhaps disappointingly there is more spread than there was 24 hours ago.

Expected Impacts

None as any development looks likely to remain over open water.

**Europe**
North-western Europe
Weather

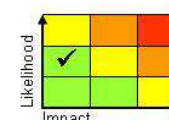
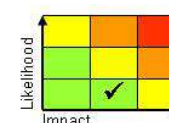
Unsettled weather is likely to affect much of north-western Europe through the coming week as developing areas of low pressure track eastwards. These are likely to produce gales or severe gales on their southern flank, while to the north where they encounter cold air some snow is likely, mainly across southern Scandinavia.

Discussion

There remains a degree of uncertainty in the development of individual systems, there is a good signal for a period of unsettled and potentially very windy weather across much of the near continent. The uncertainty relates to frontal waves which may cross to the cold side of the powerful jet and undergo cyclogenesis, with the potential for some very potent lows to form. Differences from model to model and run to run are unlikely to resolve themselves until relatively short lead times.

Expected Impacts

The main impacts are likely to be wind related, so disruption to travel, especially aviation and marine seems likely. There is a lesser risk of disruption to power supplies from fallen trees. Some further snowfall may bring some disruption to parts of southern Scandinavia.

**North America**
South-eastern USA
Weather

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There is the potential for severe thunderstorms to break out in this region today. These could produce 50 to 75 mm of rainfall in a short period, large hail, frequent lightning and a risk of tornadoes. After a quieter interlude at the start of next week, further storms could form toward the middle of next week.

Discussion

An upper trough crossing the Rockies is drawing warm air north from the Gulf of Mexico into the SE USA. This interaction is leading to cyclogenesis with the system then moving northeast across the Great Lakes and into SE Canada by Sunday. It's within the warm sector to the southeast of the low there is the potential for severe thunderstorms to break out in southern parts of the Midwest, with indices suggestive of the potential for some tornadoes to form.

Expected Impacts

Heavy rain may result in some urban and river flooding, frequent lightning may disrupt power supplies, large hail damage crops and property, with a risk of greater disruption (albeit on a very localised scale) if any significant tornadoes form.

Northern plains and Great Lakes, NE USA and SE Canada.

Weather

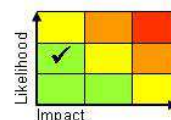
The developing low described in the section above will push an area of snow and freezing rain northeast through this region over the weekend. Some areas in this zone may see an additional 25 cm of snow fall, this most likely across The Dakotas, Minnesota and Wisconsin. Meanwhile further east freezing rain is likely, this perhaps impacting some major cities in the region.

Discussion

On the northern flank of the low formed by the cyclogenesis event described in the previous section precipitation bearing clouds will overrun cold low level air that has been in place across this region for much of the past week. This will result as precipitation falling as snow and freezing rain over a fairly broad region which includes many major population centres. There is the potential for another low to form toward the middle of next week, although this likely to impact areas further west.

Expected Impacts

Snowfall, strong winds and freezing rain will likely disrupt road, rail and air travel in the region. There is a risk that accretion of snow and ice on trees and power lines may lead to some short term outages.



Central America and Caribbean

Nil significant.

South America

Northern Andes region (Southern Colombia, Ecuador, Peru and Bolivia)

Weather

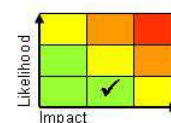
Further heavy showers and thunderstorms are expected to affect the northern Andes region for the rest of this week. The heaviest rainfall expected to be across Ecuador and Peru, perhaps central Bolivia. Here, rainfall accumulations will vary by location due to the showery nature of the rainfall, but some places could a further 200-300 mm of rain over the next week.

Discussion

Along the Pacific coastline north of NE Peru there are positive SST anomalies, and these indicate a weakening of trade winds and the Humboldt Current in this region. This setup allows sea breezes to draw moist oceanic air to the usually dry western Andes, with an unusually high frequency of heavy showers and thunderstorms occurring here.

Expected Impacts

Flash flooding and landslides remain an ongoing threat in the mountainous areas, as well as downstream river flooding. With much of this region now preconditioned by previous rainfall, further heavy rain will produce some additional impacts. There has already been significant damage to infrastructure from flooding, with homes, bridges and roads destroyed.



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Northern Argentina, Paraguay and southern Brazil

Weather

Frequent showers and thunderstorms, at times organised and severe, are expected to affect the region until Saturday, with activity then easing as it moves away to the north. Thunderstorms will produce strong winds, large hail and a risk of tornadoes. Locally in excess of 100 mm of rainfall is possible in a few hours.

Discussion

A number of disturbances embedded within the subtropical jet are expected to lead to several episodes of severe convection along the South Atlantic Convergence Zone (SACZ). This round of severe convection is now easing from the south as a marked cold front moves north. Ahead of the cold front the environment will often be characterised by high CAPE and shear, supporting mesoscale convective systems and supercells.

Expected Impacts

Severe thunderstorms are not unusual in this part of the world at this time of year but rainfall anomalies since the end of December have exceeded 200% in the far northeast of Argentina, across Uruguay and in the far south of Brazil. Further heavy rainfall is likely to lead to flash flooding and increased risk of landslides. Severe thunderstorms will also cause some highly localised but potentially significant property and infrastructure impacts due to strong winds, hail and lightning damage.



Africa

Mozambique, southern Malawi, northern Madagascar

See *Tropical Cyclones* section.

Middle East

Eastern Iran, southwest Afghanistan and northwest Pakistan.

Weather

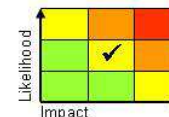
An area of rain and some mountain snow will move across the region this weekend. Widely 10-20mm of precipitation may fall, with totals locally exceeding 50mm. Over the mountains to the north of Kandahar over 50cm of additional snow may fall.

Discussion

A trough in the sub-tropical jet will engage a WBPT plume drawn north from the Gulf of Oman across this region this weekend. This will result in the formation of a surface depression, large areas of dense medium/high cloud and areas of precipitation. Following the passage of the upper trough benign conditions will become once more re-established early next week.

Expected Impacts

Following recent floods, this region is more vulnerable to poor weather than normal. The ground and rivers will be pre-conditioned for a quick response to additional precipitation. Further flash and river flooding is possible even in response to the relatively modest precipitation totals of this event. The heavy rainfall and floods of last week have left many thousands displaced in the Kandahar province of Afghanistan alone. A period of significantly below average temperatures in the wake of the low will further impact these vulnerable populations. Furthermore, there will be an increased risk of avalanche and landslides.



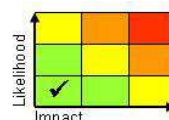
Asia

Eastern Indonesia and Papua New Guinea

Weather

Above average rainfall is expected across many Maritime Continent islands through the next week. Whilst downpours are expected to be rather localised, they are likely to develop in a similar place each day with 100-150 mm of rain possible falling in 24 hours with some places likely to receive around 300 mm over the next week. In a typical 7-day period, this region normally receives around 50-100 mm.

Discussion



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Over the past couple of weeks, the MJO phase has not been supportive of widespread convection but has instead allowed diurnal convection driven by the land-sea breeze cycle to become dominant. Since this is a cyclical process, convection has developed over similar locations each day, particularly along the central spine of narrow islands such as Java and East Britain. Increasingly through this week, the as the MJO moves through phase 4 convection is expected to widespread.

Expected Impacts

An increased likelihood of flash flooding and landslides leading to localised damage to infrastructure and property, including major cities such as Jakarta.

Afghanistan and northwest Pakistan – See *Middle East* section.

Australasia

Papua New Guinea – See *Asia* section.

Additional information

Nil.

Issued at: 091000 UTC **Meteorologist:** Mark Sidaway

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