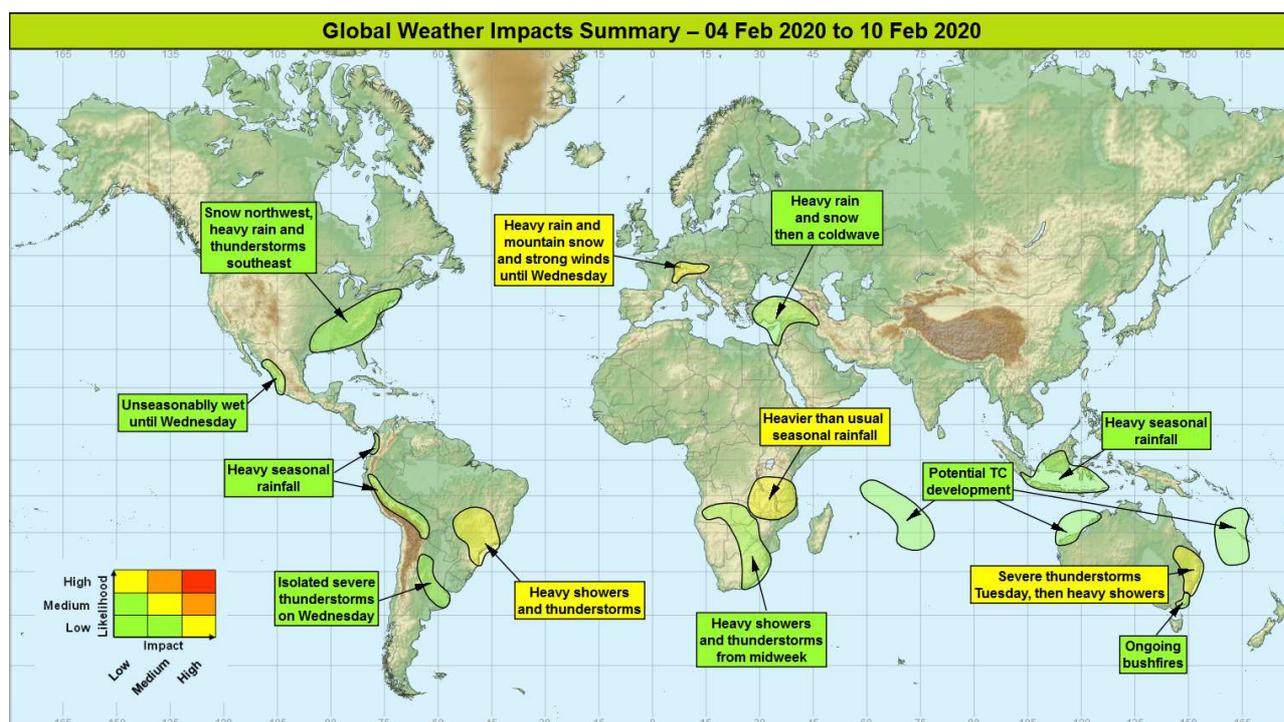


Global Weather Impacts – Tuesday 4th to Monday 10th February 2020

Issued on Tuesday 4th February 2020

HEADLINES

- Heavy rain, mountain snowfall and strong winds in central Europe until Wednesday.
- Heavy and locally severe thunderstorms for a time in parts of South America and eastern Australia.
- Continued heavy seasonal rainfall for parts of eastern Africa, and the Maritime Continent.



DISCUSSION

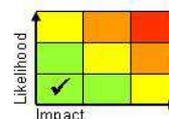
Tropical Cyclones

There are currently no active tropical storms, but the following areas are being monitored for development

Southwest Indian Ocean

Weather

There remains the potential for a couple of tropical cyclones to develop in the Indian Ocean this week, with one area just to the east of Rodrigues Island looking probable to form and be named within the next 48 hours. Currently there is no indication that any system will directly impact land over the coming week



Discussion

High SST temperatures and low vertical wind shear along the Indian Ocean Convergence Zone is conducive to the development of a tropical storm across the south-western Indian Ocean in the coming week. This is also likely aided by the transfer of the MJO east across the basin. There are no signs of a threat to land from any development in this zone over the coming week.

Expected Impacts

Locally rough seas and dangerous beach conditions on Rodrigues, otherwise nil.

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Northwestern Australia

Weather

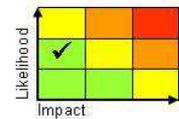
There is a signal for the potential development of a tropical low close to the Kimberley Coast of northwestern Australia through the next day or so, which may subsequently intensify into a tropical storm midweek, and bring heavy rainfall to the northern coast of Western Australia. It is possible that locally 200-400 mm of rain could fall.

Discussion

Growing signal from models for this development for an Equatorial Rossby Wave, although its likely proximity to the coast makes it slightly uncertain as to whether this system is able to strengthen into a tropical storm.

Expected Impacts

Threat of very heavy rainfall along the coast of northwestern Australia. Lower likelihood of damaging winds. As this area is sparsely populated impacts are likely to be low.



Southwest Pacific – Vanuatu and New Caledonia

Weather

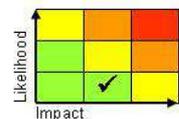
There is a developing signal for a tropical depression well to the northwest of Vanuatu later this week. By end the weekend there is a low probability that this will have strengthened to become a tropical cyclone. Although this is expected to remain over the open water, this may enhance the rainfall across parts Vanuatu and New Caledonia.

Discussion

There has been a growing signal from the models for the development of a tropical feature well to the west of Vanuatu from an Equatorial Rossby Wave (ERW) later this week. However there are significant model differences for the evolution, with the GM the most developmental at this time.

Expected Impacts

Potential for very heavy rainfall along across parts of the Vanuatu and New Caledonia. This may lead to flash flooding and an increased risk of landslides. There is a lower risk for significant winds impacts, though associated rough seas could impact marine travel across the region.



Europe

Eastern France, Switzerland, southern Germany and parts of Austria

Weather

Very unsettled across this region until Wednesday with a further spell of heavy rainfall, strong winds and mountain snow. Conditions will turn colder and more showery during Tuesday, before becoming mostly dry beyond Wednesday. An additional 40-80 mm of precipitation is likely to fall by the end of the event, with whole event totals (including what has already fallen) up to 200 mm in parts of the Alps. Snow will fall to increasingly lower altitudes through Tuesday into Wednesday, with low altitudes (500 metres above sea level) seeing some snowfall by the end of the event.

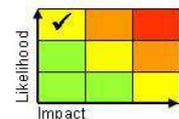
Discussion

A broad warm conveyor will continue to feed pulses of heavy rain into central parts of Europe, especially Alpine regions at first on Tuesday. Strong orographic modulation of the precipitation will result in some very large accumulations over high ground. Initially high freezing levels could allow significant snowmelt to occur across lower elevations of the Alps. A marked upper trough will drive the frontal systems south through Tuesday, allowing much colder air to sweep south, turning the increasingly showery precip wintry to increasingly lower levels.

MeteoFrance named this system 'Herve' to take account of the strong Mistral winds through the Western Mediterranean today. A strong Bora is also likely in the Adriatic on Wednesday.

Expected Impacts

Threat of flooding due to heavy rainfall and snow melt, with a heightened risk of travel disruption and avalanche at higher elevations. Increasing threat of disruption due to snowfall at lower elevations on Wednesday.



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Cyprus– See Middle East section

North America

Southeastern and eastern USA

Weather

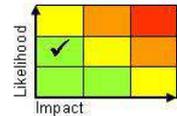
A significant winter storm will develop midweek across the south and east of the USA, producing heavy rain and severe thunderstorms, with the possibility of heavy snow and/or freezing rain on the northern fringes of this zone. 50-100 mm of rain is expected to fall widely with the possibility of 150 mm in parts of the southern states. Heavy snow (15-30 cm) is possible later in the week close to major urban areas in the northeast.

Discussion

Good model agreement for a marked long wave upper trough to push east across the Rockies, engaging a warm plume across southern and eastern parts of the USA to develop a marked winter storm. Forecast profiles support the development of severe thunderstorms in the broad warm sector of system. Moist profiles with low CAPE suggest storms will be capable of producing high rainfall rates, although with large amounts of low-level wind shear, a few tornadoes are also possible. On the northern flank of the system warm air aloft, with a marked cold undercut leads to a significant risk of snowfall and freezing rain.

Expected Impacts

Flash flooding looks likely in southern and eastern states, with a lower threat of severe storm impacts (frequent lightning and strong winds and an isolated tornado). Northwestern fringes will be at threat of power and transport network disruption from heavy snow and freezing rain.



Central America

Parts of western Mexico

Weather

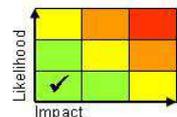
A period of unseasonably wet weather is expected until Wednesday, with an additional 100 mm or so of rain expected in places where the average rainfall is 10-20 mm.

Discussion

A low latitude upper trough will engage a warming plume to produce enhanced shower and thunderstorm activity across this part of western Mexico that is usually dry at this time of year.

Expected Impacts

Out of season flash flooding is possible in places.



South America

Southeast Brazil

Weather

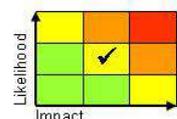
Heavy showers and thunderstorms will affect parts of southeast Brazil through the next 2 or 3 days. There is the potential for 50-100mm of precipitation to fall quite widely, with some locations seeing as much as 200-300mm. Rio de Janeiro (which on the northeast edge of this zone) typically sees around 100mm of precipitation through the whole of February.

Discussion

Several pulses of activity along the South Atlantic Convergence Zone (SACZ) will bring an enhanced heavy showers/thunderstorm threat to central/southeastern Brazil. This will be aided by a trough extension and eventual disruption in the sub-tropical jet, which will likely lead to a cut-off upper vortex developing just to the east of this region by the end of the week, this cut-off will aid the generation of a strong and moist onshore flow from the tropical Atlantic.

Expected Impacts

Heightened threat of flash flooding and landslides, including across some of densely populated regions, with large cities such as Sao Paulo, Rio de Janeiro, and Belo Horizonte at risk.



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Peru, Bolivia, Ecuador and Colombia

Weather

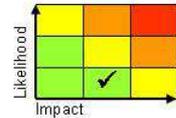
Heavier than usual shower and thunderstorm activity is expected to affect this region through much of the coming week, bringing up to 200-300 mm of rain (up to twice the February average) in places.

Discussion

Good model agreement for this region seeing heavier than average rainfall through the coming week, some enhancement across the far north of this region today may be from a cold surge which crosses the Caribbean and Central America and enhances convergence in the area it meets the southerly trade winds along the equator.

Expected Impacts

Increased threat of flash flooding and landslides, particularly in mountainous terrain.



Northern Argentina and the far south of Uruguay

Weather

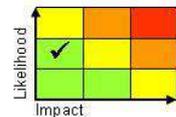
Severe thunderstorms likely developing across parts of northern Argentina and Uruguay on Wednesday. In addition to the potential for up to 100 mm of rain fall in 6-12 hours these storms will produce additional hazards of hail, strong winds and frequent lightning.

Discussion

The strong sub-tropical jet will come to overlay the monsoon plume on Wednesday, profiles include many on the ingredients required to generate severe storms, with strong wind shear that veers with height, steep mid-level lapse rate and that may be broken by mesoscale heating and/or lift. Although this zone will continue to produce heavy rain beyond Wednesday, profiles do not look quite so threatening (in terms of severe storms) over the following days.

Expected Impacts

Flash flooding looks likely, with a threat of severe storm impacts including frequent lightning, hail, strong wind gusts and an isolated tornado)



Africa

Central and East Africa

Weather

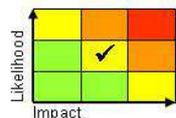
More widespread / frequent heavy showers and thunderstorms are expected to continue across the region through the coming week. Rainfall will vary significantly across relatively small distances but there is the potential for locally 50-100 mm to fall in a 24 hours period, with up to 250 mm accumulating through the next week in places. This would result in many places seeing the average February rainfall in just a week.

Discussion

The passage of the MJO coupled with high SSTs in the western Indian Ocean continue to enhance convection along the ITCZ, and Indian Ocean Convergence Zone bringing above-average rainfall to the region. This region has been very wet in recent weeks and months, with multiple reports of ongoing severe flooding.

Expected Impacts

Rainfall is likely to cause further flash flooding with some significant river flooding also possible. There will also be a heightened risk of landslides in areas where the terrain is steep.



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Parts of Southern Africa

Weather

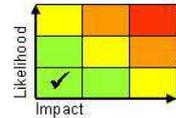
From midweek showers and thunderstorms throughout this zone are signalled to increase to above normal frequency. As such rainfall will likely total 15-30 mm quite widely, but with isolated spots seeing 100-150 mm of precipitation. Although much of this rainfall will be welcome, with the potential for this to fall over a short duration it may bring some impacts.

Discussion

A plume of warm tropical air is drawn south ahead of the surface cold front with a slightly cyclonic upper flow allowing the formation of heavy diurnal showers and thunderstorms each day, the cold front is now expected to slow allowing shower activity to continue at well above average frequency in this zone through much of the coming week.

Expected Impacts

Although much of the rainfall will be welcome across areas that have experienced rainfall deficits in recent times, some flash flooding is possible, especially in urban areas.



Middle East

Turkey, Syria, Iraq Lebanon, Israel and Cyprus

Weather

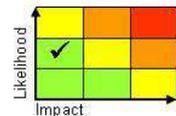
Potential for a multi-hazard severe weather event across large parts of southeast Europe from midweek. In the south, heavy rain, thunderstorms and strong winds will be the main hazards with 50-150mm of rain falling in places. Further north, heavy snow is expected with 10-20 cm falling quite widely, perhaps up to 1 m in a few locations across northern Turkey. In the wake of the precipitation a marked coldwave will follow with temperatures across the region around 10°C below average.

Discussion

A major trough extension will take place across central and eastern Europe. The trough will interact with a frontal wave over central Europe allowing cyclogenesis to take place, with the resultant system then moving southeast the west of this region midweek, then east into the Levant. Snow will fall on the northern flank of the system and then more widely to the rear of the cold front, with a marked coldwave sweeping the region

Expected Impacts

Widespread disruption to travel is possible either due to flash flooding or heavy snowfall. Some interruptions to power supplies are also possible. Coldwave likely to have impacts for vulnerable populations groups in the region unable to access adequate shelter and heating.



Asia

Indonesia

Weather

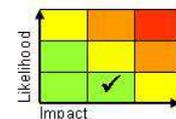
Pulses of enhanced showers and thunderstorms are expected across this region during the coming week. During this period up to 150-250 mm of rain is expected fall in some spots, with up to 50-100 mm falling in just 6-12 hours in places. This is not untypical for the region, but this follows recent weeks where it has been very wet

Discussion

The main driver of the wetter than average signal looks to be an enhanced NE'ly monsoon phase across the South China Sea that enhances the convergence along the ITCZ that lies across much of Indonesia. The MJO moving across the Indian Ocean and the late onset of the Australia monsoon is possibly allowing the ITCZ to currently sit at a slightly more northerly latitude and be more active than usual, these factors enhancing the impacts of these cold surges over Java in particular.

Expected Impacts

Flash flooding and a heightened risk of landslides are the principle hazards from this event, Jakarta has suffered multiple impacts from heavy rainfall over recent weeks, and appears to be at risk once more.



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Australasia
Eastern Australia
Weather

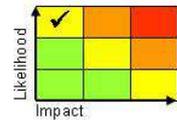
Intense showers and severe thunderstorms are expected to develop across the northeast of this region again early today. These storms will be capable of producing up to 100 mm of rain in just 6 hours, in addition to large hail. Beyond Tuesday showers in more populated regions will remain present but there severity will lower. However still by the end of the coming week some location could see accumulations of up to 250 mm which is just above average for the whole of February for the Gold Coast, but well above for inland parts and much of New South Wales. Much of the areas impacted by this spell of very wet weather have been in drought over recent years, so it is felt likely that much of this rainfall (especially in the interior) will be welcome.

Discussion

On Tuesday a warm plume drawn southeast ahead of a surface cold front will allow some severe thunderstorms to form, profiles show the hallmarks of severe convection. From Wednesday onwards although showers will continue in this wider region, the severity of these in terms of hail and strong winds will be much reduced, as profiles in the more populated regions show moist relatively low CAPE tropical convection becoming favoured with a complete absence of steep lapse rates in elevated layers. This due to the air being sourced from the moist southwest pacific.

Expected Impacts

Flash flooding along with hail and wind damage are likely initially. Aviation and power networks could be disrupted by lightning damage. From Wednesday onwards impacts will largely be limited to both flash and potentially some river flooding (even in usually dry creeks).



New South Wales, Australian Capital Territory, Victoria
Weather

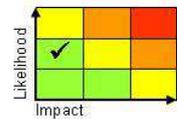
Temperatures will remain suppressed through the coming week, limiting the potential for new wildfires to develop. Overall, BoM have much lower fire danger ratings, mostly low-moderate over the coming days.

Discussion

A cold front has now moved northeast of the region where fires continue and introduced much cooler conditions, although winds will remain rather strong until pressure builds more strongly north from Tuesday. Later in the week, temperatures could rise again but this will be accompanied by higher levels of moisture being drawn in off the Pacific Ocean leading to a risk of showers, especially across eastern parts of NSW. Overall fire danger ratings will be lower than recently.

Expected Impacts

Existing fires will continue to produce fine particulates and contribute to localised areas of very poor or hazardous air quality.



Additional Information
 Nil.

Issued at: 040750 UTC **Meteorologists:** Nick Silkstone / Paul Hutcheon **Global Guidance Unit**

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