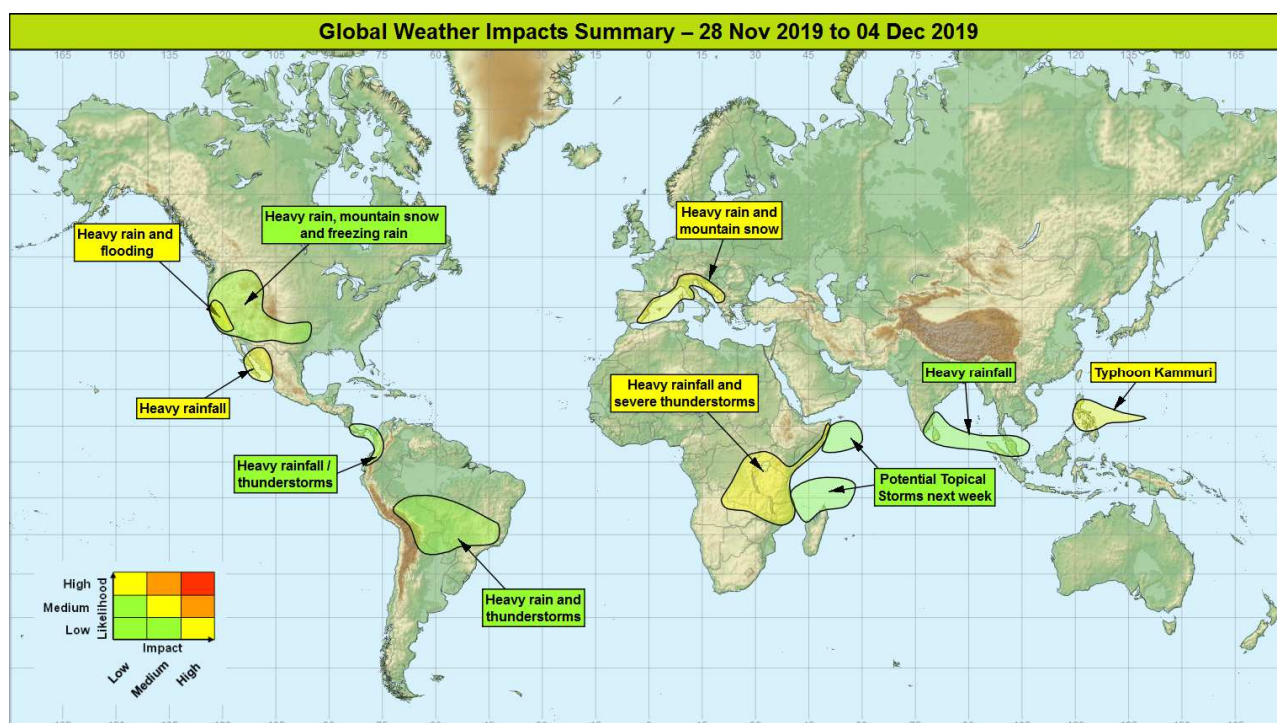


Global Weather Impacts – Thursday 28th November to Wednesday 4th December 2019

Issued on Thursday 28th November 2019

HEADLINES

- Enhanced rainfall over large parts of eastern Africa set to continue.
- Disruptive winter weather across western USA, with a combination of heavy rain, snow and freezing rain.
- Potential for flash flooding in northwestern Mexico.
- Potential for Kammuri to be a significant typhoon for the Philippines early next week.
- Further very unsettled weather for parts of southern Europe.



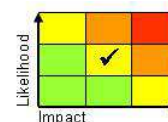
DISCUSSION

Tropical Cyclones

Typhoon Kammuri
Weather

Kammuri currently lies around 200 miles southwest of Guam and strengthened into a typhoon on Wednesday night. This system is expected to move north over the next few days, before stalling then tracking west through the weekend. Kammuri looks very likely to intensify into a strong typhoon during this period. Kammuri's most likely track would see it reaching the Philippines during the early part of next week (most likely Tuesday 3rd), potentially bringing significant impacts, although this is very uncertain at this range. In the shorter term, this system could produce 100-200 mm of rainfall across the Northern Mariana Islands in the next few days, which is close to the equivalent of the whole November rainfall.

Discussion



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High SSTs and a low shear environment should allow steady intensification over the next few days, probably becoming a typhoon during Thursday. The track of Kammuri is one of the main uncertainties as a break in the sub-tropical ridge will allow the cyclone to turn sharply north, before resuming a more westerly track as the ridge builds more strongly to the north once again. There is growing model agreement for a track that takes this potentially powerful typhoon into the Philippines early next week, with a most likely landfall being during Tuesday. Precise location very uncertain at this stage, but southern Luzon looks the most probable location at this very long lead time. By this time, the intensity of the storm becomes more uncertain as moderate amounts of wind shear could impact the system.

Expected Impacts

Dangerous conditions for marine transport, and a threat of flash flooding in the Northern Mariana Islands. Increasing risk of flash flooding and damaging, or even destructive winds, for the Philippines next week.

The following region is being monitored for possible impactful tropical cyclone development.

Western Indian Ocean

Weather

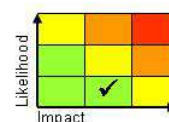
From the weekend and into next week there is the potential for tropical storms to form in the west Indian Ocean both north and south of the equator. The more likely area to see development is within an area of convection presently to the north-east of Madagascar. Irrespective of whether tropical storms form, these areas are likely to help enhance rainfall across parts of east Africa (see section below).

Discussion

There is a signal from models for development of a Tropical Cyclone to the north-east of Madagascar early next week, with a weaker signal for development east of Somalia, but there is a wide range of NWP solutions which lowers confidence in details. With the MJO now moving east over the Indian Ocean, this is likely to result in westward propagating waves in its wake (ERWs) which may help trigger storm formation. In addition, elevated SSTs due to the ongoing positive IOD will also help favour tropical cyclogenesis in these areas.

Expected Impacts

Nil at this stage although may enhance rainfall over east Africa (see section below).



Europe

Parts of Southern Europe

Weather

Although further showers are possible across the region over the next few days, overall conditions will be much drier than of late. The respite will be short-lived, as conditions will turn very unsettled again next week. Around 30-75mm could fall quite widely with some areas over high ground receiving up to 150mm. Furthermore, above about 1000-1200 metres in the Alps, precipitation will fall as snow, with significant accumulations likely, enhancing avalanche risk. Snow will fall to increasingly low-levels in the northeast part of this region during Monday as conditions turn much colder from the north, possibly down to 300-500 metres in places. From Tuesday the peak rainfall will become focussed across eastern Spain and the Balearic Isles as colder drier air moves south into the rest of this region.

Discussion

A major trough extension is expected to take place across SW Europe later in the weekend and early next week, leading to marked cyclogenesis, with active frontal systems then affecting large swathes of southern Europe. As cold air digs in to the rear of the well-defined cold front, precipitation will turn increasingly to snow, possibly as low as 300 metres or so by Monday.

Expected Impacts

Flash-flooding, landslides and increased avalanche risk. Travel disruption is possible into early next week as snow affects more populated areas.



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North America

Western USA

Weather

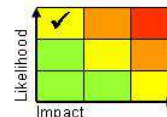
Two periods of very unsettled weather are expected to affect much of western USA through the next week. Further strong winds and widespread heavy rain and snow will affect the Rockies over the next couple of days, with winter hazards spreading as far south as parts of the Southern Plains. Here, there is an additional threat of freezing rain. After a brief drier interlude on Saturday, further heavy rain and mountain snowfall will again affect the region, with the focus this time being on California. Rainfall accumulations of up to 75-125 mm are likely across large parts of the region with up to 250 mm falling in parts of California (at least twice the average monthly rainfall), resulting in very large snowfall in the mountains.

Discussion

A marked jet left exit resulted in explosive cyclogenesis just offshore of southwestern Oregon on Tuesday. The resultant depression has now moved onshore and is filling, but the associated active frontal system is still expected to bring widespread and heavy precipitation over the next few days. A lower latitude upper trough is then expected to engage a warm plume to produce an active precipitation bearing system through the weekend.

Expected Impacts

Wind damage is possible through the next few days, with flash flooding and landslides an increasing threat. Mountain snowfall will result in an increased avalanche threat in the Sierra Nevadas and could produce significant transport issues on mountain passes. The most significant impacts are likely to be in California, where there is potential for flooding in the densely populated west coast cities.



Northwest Mexico

Weather

A spell of heavy and persistent rain looks likely to transfer across this region from the eastern Pacific before clearing by the weekend. During this time many areas in the region may see at least 100 mm of rain, with potential for around 200-300 mm of rain over some prone areas, more especially high ground. Although these totals are extreme for November, these represent typical conditions during the wetter summer months.

Discussion

A relaxing cut-off upper vortex from the subtropical jet is likely to be steered northeast into western Mexico as a marked trough extension occurs in the polar front jet across the eastern Pacific. This will induce the northward extrusion of a tropical plume towards Baja California Sur, almost pulling the ITCZ north in this locality, generating heavy and persistent rainfall over this region. Global models highlight some spots of 300mm of rain over higher ground in 48 hours.

Expected Impacts

Both flash and river flooding is likely, with an increased risk of landslides in steeper terrain.



Central America and Caribbean

Costa Rica & Panama – see South America section

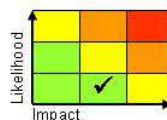
South America

Parts of Colombia, northern Ecuador, Costa Rica and Panama

Weather

Further heavy showers are expected in this region over the next 7 days, although the most intense rainfall is likely through the next few 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. This 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



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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. The combination of enhanced low level convergence and the upper ridge being eroded by upper troughing from an extrusion from the sub-tropical jet across the North Atlantic will produce intense rainfall during the next few days.

Expected Impacts

Flash and river flooding with landslides possible in mountainous areas. This follows on from a recent wet period across the region with significant river flooding reported over the last couple of weeks.

Bolivia, Paraguay, northeast Argentina, southern Peru and southern Brazil

Weather

Heavy showers and thunderstorms are expected at times through the next week in this region. 40-80 mm of rainfall in a few hours is possible with a few places perhaps seeing 150-200 mm over a period of a couple of days. Additional hazards include frequent lightning strikes, large hail and a risk of tornadoes

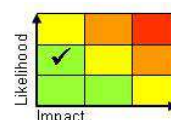
Discussion

Two South American Convergence Zone events are likely to affect this region through the next week, with the first one easing on Friday, before the second event develops a little further south from later in the weekend.

Forecast profiles (large CAPE and decent amounts of vertical wind shear) show the potential for severe thunderstorms as the sub-tropical jet migrates a little further north during these events and interacts with the warm plume across the region.

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 eastern Africa

Weather

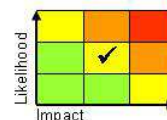
Showers and thunderstorms will be heavier than normal through the next week. The heaviest rainfall is expected to be across the Kenyan Highlands, western Tanzania, Rwanda, Burundi and eastern DRC. 200-300 mm of rain could accumulate through the next week (well over a month's worth of rain for some locations). Elsewhere, rainfall accumulations will be lower. In addition, during next week, there is the potential for enhanced heavy rainfall over coastal Somalia and northern Mozambique, associated with potential tropical storms.

Discussion

The positive IOD phase continuing, will promote above-average rainfall across this region in the coming week. As the MJO moves across the Indian Ocean, it is likely to spawn further ERW which could then move west and affect coastal parts of the region, further enhancing rainfall and also leading to a risk of tropical cyclogenesis.

Expected Impacts

An increased risk of flash flooding and landslides in the region, with further river flooding likely. This is also true of regions in the far south of the area which have been experiencing drought conditions. Frequent lightning is also likely, along with large hail and strong wind gusts.



Middle East

Nil.

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Asia

Northern Mariana Islands and Philippines – see *Tropical Cyclones* section

Malaysia, northern Sumatra, Sri Lanka and southeast India

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 through the next week (equivalent of 50-75% of the average monthly rainfall at this time of year).

Discussion

With the MJO in the process of entering the Indian Ocean the ITCZ in the northern Indian Ocean is expected to become more active through the next week, resulting in more widespread intense convection.

Expected Impacts

Increased threat of flash flooding and landslides.



Australasia

Nil.

Additional Information

Eastern Australia – Wildfire: There is the potential for high temperatures and brisk winds in parts of eastern Australia through the next few days that could aid wildfire generation and spread. However, a cold front will bring some rainfall and introduce cooler air across the region from the weekend, which will likely lower the wildfire threat and aid the containment of existing wildfires.

Issued at: 280815 UTC **Meteorologists:** Brent Walker / Paul Hutcheon

Global Guidance Unit

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