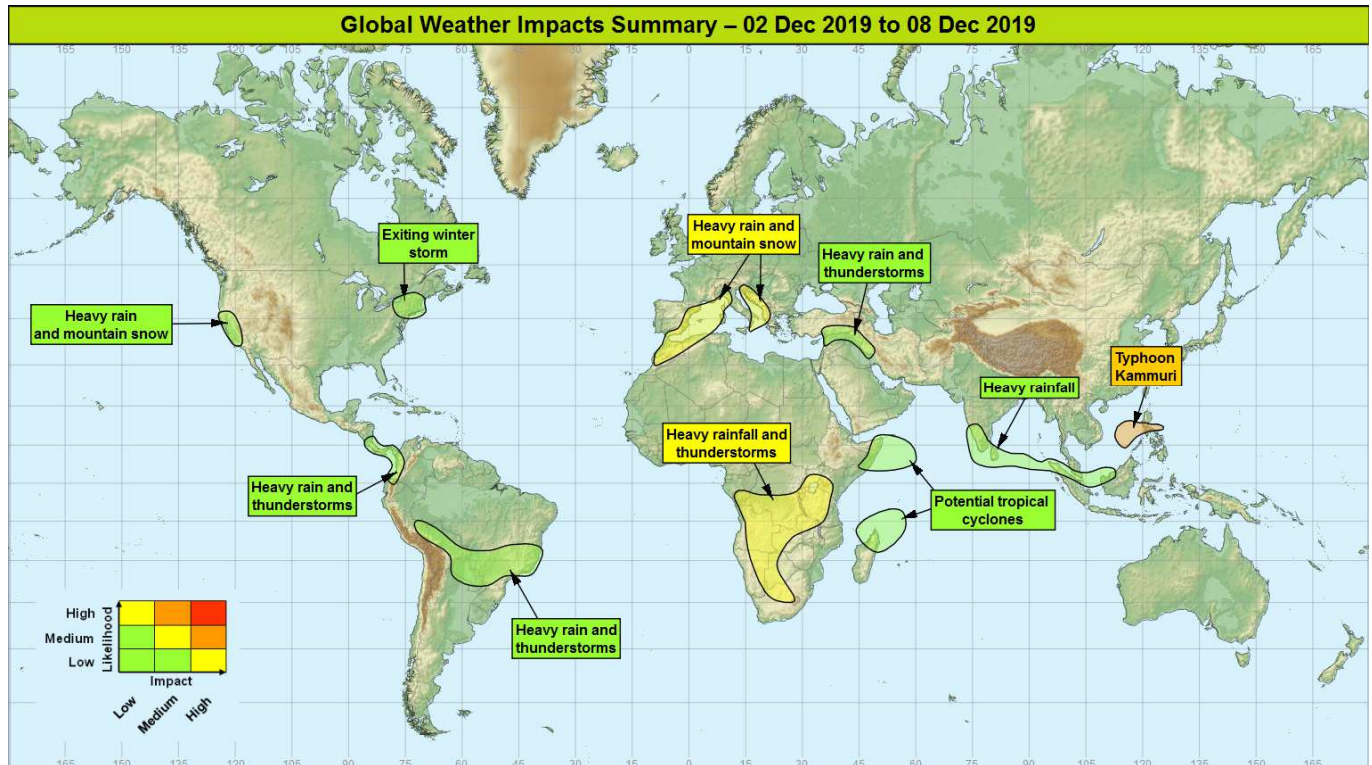


Global Weather Impacts – Monday 2nd to Sunday 8th December 2019

Issued on Monday 2nd December 2019

HEADLINES

- Typhoon Kammuri making landfall across central Luzon today bringing destructive winds and torrential rain.
- Heavy rain and mountain snow across parts of southern Europe, northwest Africa and the Middle East.
- Continuing wetter than normal across parts of central Africa, with potential tropical storms affecting the east of the continent.



DISCUSSION

Tropical Cyclones

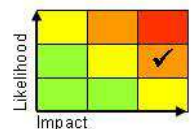
Typhoon Kammuri

Weather

Typhoon Kammuri is just to the east of Luzon (*280 miles east-southeast of Luzon at 0600 UTC*) and is expected to continue slowly west through today. Kammuri will make landfall this evening (UK time) across central Luzon. Expected sustained winds of 95-100 mph, coupled with torrential rain and storm surge are likely. As Kammuri moves over the rugged terrain of Luzon, it is expected to quickly weaken, though with heavy rain continuing (including for the Manila and surrounding area) until it exits into the South China Sea on Tuesday. By then some 300-500mm of rain is expected, locally more over higher ground. It is then signalled to curve to the south and weaken further.

Discussion

Weak wind shear and SSTs of 29°C will be conducive for slow but steady strengthening of Kammuri as it approaches Luzon. Model track guidance is in excellent agreement, with the system crossing the centre of Luzon. It is then signalled to curve to the S as a mid-latitude trough approaches.



This forecast may be amended at any time

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Expected Impacts

Flash flooding and damaging, locally destructive winds possible in some parts of Luzon. Coastal impacts likely due to a large surge, with disruption to infrastructure and travel.

The following regions are being monitored for possible impactful tropical cyclone development.

Western Indian Ocean

Weather

There is the potential for tropical storms to form in the western Indian Ocean both north and south of the Equator, in the next few days. The more likely area to see development is within an area of showers/thunderstorms presently to the northeast of Madagascar. Both the actual formation of any tropical systems, and the subsequent evolution and track remains open to a lot of uncertainty. Irrespective, enhanced rainfall is likely across parts of east Africa; more likely for northern Madagascar and possibly northeast Somalia.

Discussion

Weak wind shear and SSTs some 1 to 1.5°C above normal (a result of the ongoing positive Indian Ocean Dipole event) provide the background for an increased likelihood of tropical storms. Signals from deterministic and EPS output continue to be mixed, with the GM in particular allowing both potential developments to attain tropical storm strength. EC and GFS only spin up the southern hemispheric low, which then takes an uncertain track toward northern Madagascar. Undoubtedly, some convergence in models will occur in the next few days.

Expected Impacts

Potential for heavy rainfall over parts of Somalia and Madagascar, with a lower threat for other parts of East Africa. Should the developments occur as signalled, destructive winds are also possible, primarily for northern Madagascar.



Europe

Parts of Southern Europe, as well as northern Morocco and Algeria

Weather

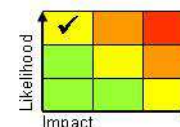
A disturbed spell of weather is expected across these areas through the next week, with low pressure developing across northwest Africa, before slowly drifting north-east into the Mediterranean. This brings with it bouts of strong to gale force winds as well as heavy rain. Many areas will see 30-50mm during the week, some of this falling in relatively short periods of time, where as some parts of eastern Iberia, far south of France, and the Balkans could see 150-250mm of rain. Heavy snow is likely across the high ground of the Balkans (above about 1000m). Some severe thunderstorms, as well as the odd water spout is also likely.

Discussion

A succession of trough extensions, then disruptions, already underway across NW Africa, are expected to lead to cyclogenesis across Morocco and Algeria during the next few days. As the resultant surface low drifts NE into the Mediterranean, it is likely to bring gales and spells of heavy, locally thundery rain. Precipitation will be strong orographically modulated, with eastern parts of Iberia, and later, north-western Italy and the Balkans looking most prone.

Expected Impacts

Flash-flooding, landslides and increased avalanche risk. Parts of SE France and NW Italy (eg. Liguria) particularly vulnerable given a similar (although more extreme) event last week. Travel disruption is possible into early next week as snow affects more populated areas.

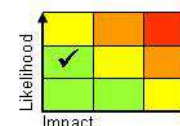


North America

South-west USA

Weather

An area of low pressure will become slow-moving over California and the Sierra Nevada until late in the week. 100-200mm of rain is likely over the more populated, lower ground areas, and 2-3 metres of snow is expected in some parts of the Sierra Nevada.



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**Discussion**

A low latitude, complex and disrupting upper trough has engaged a warm plume to produce an active low pressure, leading to strong onshore flow, lift and heavy precipitation. As the trough undergoes multiple disruptions and mobility stalls, warm conveyor flow will be set up for a time across California, bringing spells of persistent and at times heavy rain, with copious amounts of snow over the Sierras.

Expected Impacts

Flash and river flooding, as well as disruption to travel and utilities in the area. Blizzards and enhanced avalanche risk in the Sierras.

Northeast USA/Southeast Canada**Weather**

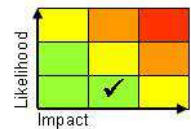
Whilst not a classic Nor'easter, an exiting winter storm is likely to bring periods of snow to the area, with 10-20cm likely across upstate New York and parts of New England. A wintry mix is likely toward coastal areas, including New York and Boston, but even here 5-10cm of snow may bring some disruption to transport. As well as snow, some strong winds are also likely.

Discussion

A winter storm, which brought over a metre of snow to parts of Minnesota during the weekend, is expected to track east across the Great Lakes and New England through today and into tomorrow. Cold air will be wrapped around the system bringing further locally heavy snow, particularly to Upstate New York where lake effects will enhance precipitation. Gale force E'ly winds are also likely.

Expected Impacts

Disruption to road, rail and air travel is expected across much of the area.

**Central America and Caribbean**

Costa Rica & Panama – see South America section

South America**Western Colombia, northern Ecuador, Costa Rica and Panama****Weather**

Further heavy showers are expected in this region over the next 7 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

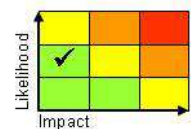
A combination of continued enhanced convection, and wetter than normal antecedent conditions, has helped to identify this region as the most likely to see impacts. Models signal 100-300mm of rain, mainly triggered by upslope motion on the western Andes. Furthermore, what appears to be Central American Gyre is signalled to set up in the next day or two, enhancing precipitation further.

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, far north Argentina, southern Peru and southern Brazil****Weather**

Heavy showers and thunderstorms are expected at times through the next week in this region. 50-100 mm of rainfall in a few hours is possible with a few places perhaps seeing 150-250 mm over a period of a couple of days. Additional hazards include frequent lightning strikes, large hail and a risk of tornadoes



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Discussion

Major cyclogenesis well to the S is likely to reactivate the SACZ through today, and at first tomorrow, before a further reinvigoration late in the week. Both will manifest in a marked increase in shower and thunderstorm activity, with some torrential downpours and severe convection, as well as a few tornadoes, likely.

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 central Africa

Weather

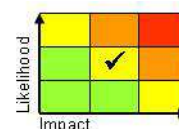
Showers and thunderstorms associated with the seasonal rains are expected to continue to be heavier than normal over the next week, with 100-200mm, perhaps locally as much as 300mm of rain falling in frequent heavy, thundery, afternoon downpours. The heaviest rain is expected from Kenya to Angola, through Uganda, western Tanzania and Zambia, as well as parts of Botswana and northern South Africa. Much of this area has seen 200-400% of the usual rainfall over the past week, although the rainfall expected over Angola may be more welcome with much drier than average conditions here in recent times.

Discussion

Enhanced seasonal rainfall in association with the strong positive Indian Ocean Dipole event which, although declining, is still in full swing. Large tracts of eastern Africa have seen well above average rainfall over the past 3-6 months, and even parts of Angola, although recently dry, have seen above normal rainfall in the past month. The combination of all these factors dramatically increases the likelihood of further flash and river flooding – potential tropical cyclones (see tropical cyclone section) adds further to this risk for select locations. However, as compared to recent weeks, the focus for the coming week appears to be further W.

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.



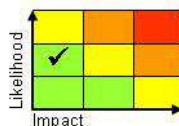
Morocco and northern Algeria – see *Europe* section

Middle East

Parts of Syria, Iraq and western Iran

Weather

Two periods of disturbed weather are expected across the area. The first, through today, is likely to see heavy rain and thunderstorms push quickly from west to east across the area. Some 15-30mm of rain, locally more, is expected, this falling in a short space of time, and accompanied by strong and gusty winds as well as lifted and blowing dust. The second spell of unsettled weather is expected to unfold during Thursday, lasting into Friday. During this time, an active cold front is expected to bring further heavy rain, strong winds and lifted and blowing dust. Snow across mountain passes is also likely. By the end of the week, some of these areas could see 100-150mm of rain, locally more over higher ground. The main focus for this is likely to be northern Iraq and parts of NW Iran.



Discussion

A major trough is signalled to push quickly across the area through today, with a synoptic-scale trough then disrupting across the area during Thursday and into Friday. Both events will bring heavy precipitation as well as strong and gusty winds. Friday's will likely be accompanied by a significant drop in temperatures bringing the threat of disruptive snow.

Expected Impacts

Flash and river flooding, landslides, and disruption to transport and travel are likely.

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Asia

Philippines – see *Tropical Cyclones* section

Southern Malaysia, northern Sumatra, western Borneo, Sri Lanka and southern 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 western Indian Ocean the ITCZ 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: Numerous bushfires continue in parts of eastern New South Wales, Queensland and Australian Capital Territory with 'severe' conditions forecast again across parts of these areas on Thursday and Friday.

Issued at: 020815 UTC **Meteorologists:** Jason Kelly / Chris Bulmer

Global Guidance Unit

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