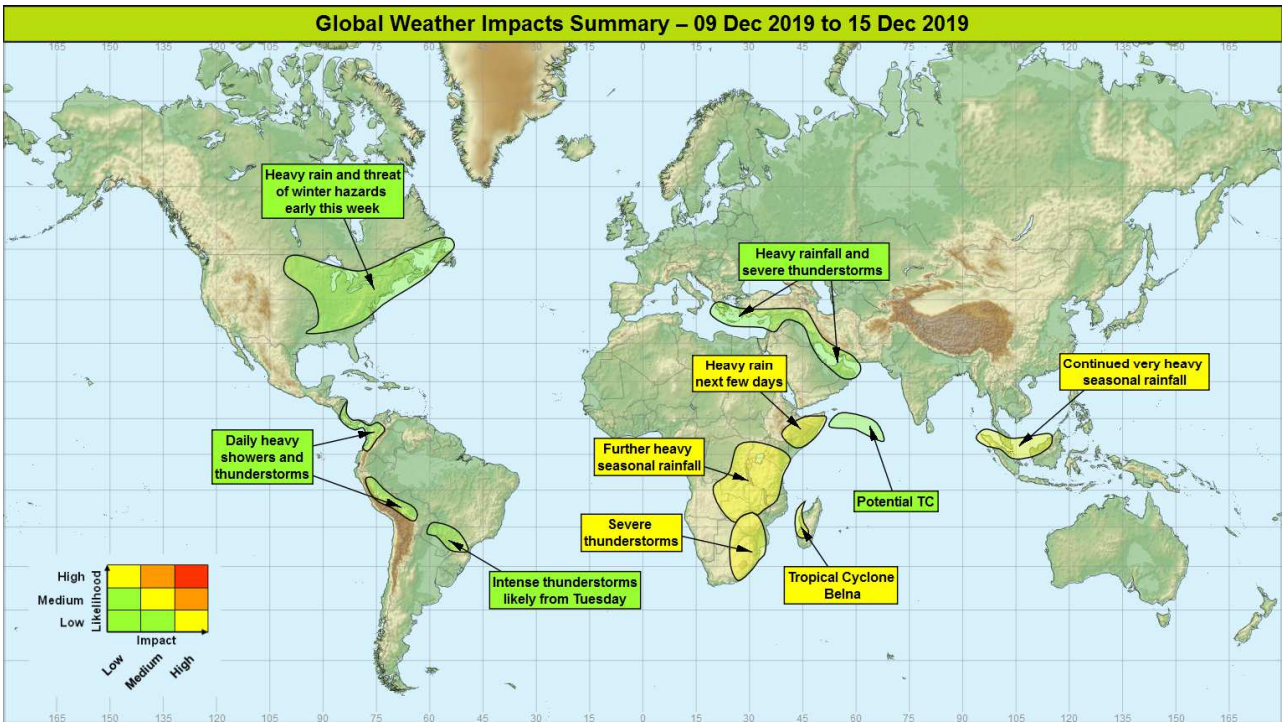
Met Office Daily Global Weather Impacts Assessment

Global Weather Impacts – Monday 9th to Sunday 15th December 2019

Issued on Monday 9th December 2019

HEADLINES

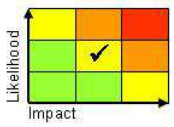
- Tropical cyclone Belna expected to make landfall across north-west Madagascar later today.
- Areas of heavy rain continuing to impact parts of eastern and southern Africa.



DISCUSSION

Tropical Cyclones

Tropical Cyclone Belna (Madagascar)



Weather

Belna is approaching the north-west coast of Madagascar having passed to the south-east of Mayotte Island on Sunday. Belna weakened over the past 24 hours, but some modest strengthening from its 09/0600Z intensity of 75mph is expected before landfall on the north-west coast of Madagascar later this afternoon or early this evening. As well as strong winds, Belna may well deposit 200-300 mm of rain in a 24-36 hour period. For context, the average December rainfall in this region is 200-300 mm. Belna should weaken quickly through Tuesday as it encounters higher terrain of inland Madagascar.

Discussion

Belna maintained its strength through Sunday, with a small eye apparent at times, but weakened somewhat overnight. Deterministic and EPS output are now in decent agreement with the system's track, lending confidence to the forecast. Belna will quickly fall apart once it encounters the mountainous interior of Madagascar.

Expected Impacts

Torrential rainfall likely bringing flash floods to parts of northern and western Madagascar, along with an enhanced landslide risk. Destructive winds and storm surge flooding are likely close to the centre of Belna.

This forecast may be amended at any time

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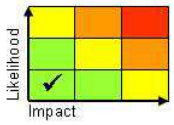
Possible tropical cyclone development areas:

Arabian Sea



Weather

There is a possibility that another tropical cyclone will develop in the Arabian Sea through the next few days, although if this does occur it looks likely to remain offshore before weakening.

Discussion

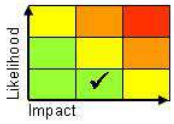
An Equatorial Rossby Wave has engaged an area of enhanced convection across the southwest Arabian Sea. This system may reach tropical storm strength in the next 48 hours, but should any system develop, it looks unlikely to reach land before decaying.

Expected Impacts

Nil (although we continue to monitor it).

Europe

Parts of southeast Europe across the north and east of the Middle East



Weather

This region will see heavy showers and thunderstorms at times through the next seven days. Up to 50-100 mm could fall in 24 hours, with the highest rainfall totals likely for south-western Turkey. These sorts of values are around the average December rainfall for this area. The thunderstorms could be severe at times, producing a threat of large hail, frequent lightning and strong, gusty winds. These winds could lift dense dust storms in the Middle East.

Discussion

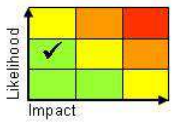
The combination of a south shifted PFJ and a strong STJ will produce areas of deep convection across this region, with the potential for long lived, severe thunderstorms in places.

Expected Impacts

Flash flooding is possible across this region, with frequent lightning impacts possible too. Waterspouts and tornadoes are possible across and around the Mediterranean, with dense lifted dust plumes likely in the Middle East. Heavy mountain snowfall likely in the mountain ranges of the Iran/Iraq border and southern Turkish border.

North America

Parts of eastern USA and south-eastern Canada



Weather

An area of heavy rain and showers, and in the south of the area the potential for thunderstorms, will transfer east across parts of eastern North America early next week.

Up to 75 mm of rain could fall in 24 hours, with the potential for heavy snow in more northern parts of this region.

Discussion

An upper trough will engage a cold front as it tracks east, resulting in an increasingly active frontal zone. Marked cold advection will produce a threat of heavy snow on the back edge of the cold front as it clears eastwards.

Expected Impacts

Local flash flooding is possible, with wintry hazards posing a threat of transport and power network impacts, including the major metropolitan areas of the Eastern Seaboard.

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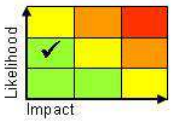
South America

Ecuador, western Colombia, Panama, Costa Rica, Peru, Bolivia and eastern Nicaragua



Weather

Frequent heavy showers and thunderstorms will affect these regions this weekend, with the showers each day bringing 50-75 mm in just a few hours, with some locations receiving over 200 mm (around the December average rainfall). As is the nature of showers, spatial coverage on any one day will be highly variable. There are signs that activity will decrease early next week before picking up again midweek.

Discussion

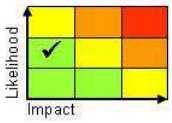
With the South American Monsoon extending well south now, daily rounds of showers and thunderstorms are expected to form to the west of the Andes of Colombia and Ecuador, and to the east of the Andes further south. The region highlighted has seen above average rainfall during the past week, and is also forecast to receive the highest rainfall totals.

The deep convection north of Colombia is likely to ease from Monday due to weakening low level convergence.

Expected Impacts

Flash and river flooding likely, with increased likelihood of landslides.

Parts of southern Brazil and Paraguay



Weather

Intense thunderstorms are expected to affect parts of eastern Brazil from Tuesday, bringing up to 50-75 mm in a few hours and as much as 150-200 mm through the next week (which would be close to the average December rainfall). Frequent lightning is likely, and a risk of localised large hail.

Discussion

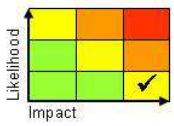
A significant pulse of the SACZ is expected through the next week. CAPE and PWAT are high, with localised flash flooding likely where they occur.

Expected Impacts

Localised flash flooding, and low risk of lightning damage affecting cities such as Sao Paolo and Rio de Janeiro.

Africa

Somalia and eastern Ethiopia



Weather

The remnants of cyclonic storm Pawan, which brought 150-200mm of rain to the area over the weekend, will continue to ask as a source of moisture for further heavy showers across the area through the next few days, with the peak rainfall likely further south, across areas that suffered flooding last month. Shower activity should wane towards midweek.

Discussion

Good model agreement for the area at risk of localised heavier convective rainfall through the next few days. River gauges show increasing river levels in the Shabelle River that flooded last month, displacing around 500,000 people.

Expected Impacts

Potential for flooding rains leading to threat to life, destruction of homes, displacement of populations and long term disruption to transport.

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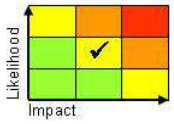
Parts of eastern/central Africa



Weather

Further widespread heavy showers and thunderstorms associated with the seasonal rains are expected to continue to be heavier than normal over the next week, with a further 100-200 mm of rain falling in places from frequent heavy, thundery, afternoon downpours. This is close to the average rainfall in this region for the whole of December, with this area having already seen 200-400% of the usual rainfall over the past few weeks.

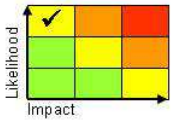
Discussion

Enhanced seasonal rainfall in association with the strong positive Indian Ocean Dipole event which, although declining, is still influencing the large scale shower distribution. Large tracts of eastern Africa have seen well above average rainfall over the past few months. The combination of all these factors dramatically increases the likelihood of further flash and river flooding along with further deadly landslides.

Expected Impacts

An increased threat of flash flooding and landslides in the region, with further river flooding likely. Frequent lightning is also likely, along with large hail and strong wind gusts.

South-eastern Africa



Weather

Areas of heavy showers and thunderstorms will occur through much of this period in this region, likely easing from Wednesday. The severe storms will produce up to 100 mm in just a few hours, with some locations seeing up to 200 mm through the next 3 or 4 days, which would be around twice the monthly average in many parts of the region. There is also a threat of large hail, frequent lightning and strong, gusty winds

Discussion

The advance of a long wave upper trough will draw very warm air south from the sub-tropics that will then be engaged by increased levels of upper forcing to produce very high PWAT, high CAPE profiles that suggest some very intense downpours are likely at times, with the possibility of some long-lasting MCS due to some strong vertical wind shear profiles.

Expected Impacts

In the longer term this heavy rainfall will be welcome as this region of Africa has suffered droughts in the recent past. However, such intense downpours will generate flash flooding and landslides, potentially damaging infrastructure and crops.

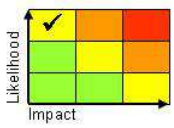
Madagascar – see *Tropical Cyclones* section

Middle East

Levant coastline, northern parts of Syria, northern and eastern Iraq, western Iran, the UAE and Oman – see *Europe* section

Asia

Malaysia, Borneo, Brunei and Sumatra



Weather

Even though it is the rainy season in this region, heavy rainfall is expected to continue through the next week, with some places seeing up to 300mm (equivalent of 50-75% of the average monthly rainfall at this time of year).

Discussion

A combination of a weak MJO moving across the Indian Ocean and a surge in the Northeast Monsoon is likely to continue enhancing deep convection through this week. These rains have already caused significant impacts in parts of this region.

Expected Impacts

Increased threat of flash flooding and landslides.

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Australasia
Eastern Australia – see *Additional Information* section

Additional Information
Eastern Australia – Wildfire: Numerous bushfires continue in parts of eastern New South Wales, Queensland and Australian Capital Territory with continued mostly dry weather expected through the next four or five days at least. Temperatures are likely to peak on Tuesday, ahead of a cold front that could bring strong winds and dry lightning storms. So the threat of further fire generation and spread of existing fires is likely to peak on Tuesday.

Issued at: 090800 UTC **Meteorologists:** Jason Kelly / D J Harris **Global Guidance Unit**

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