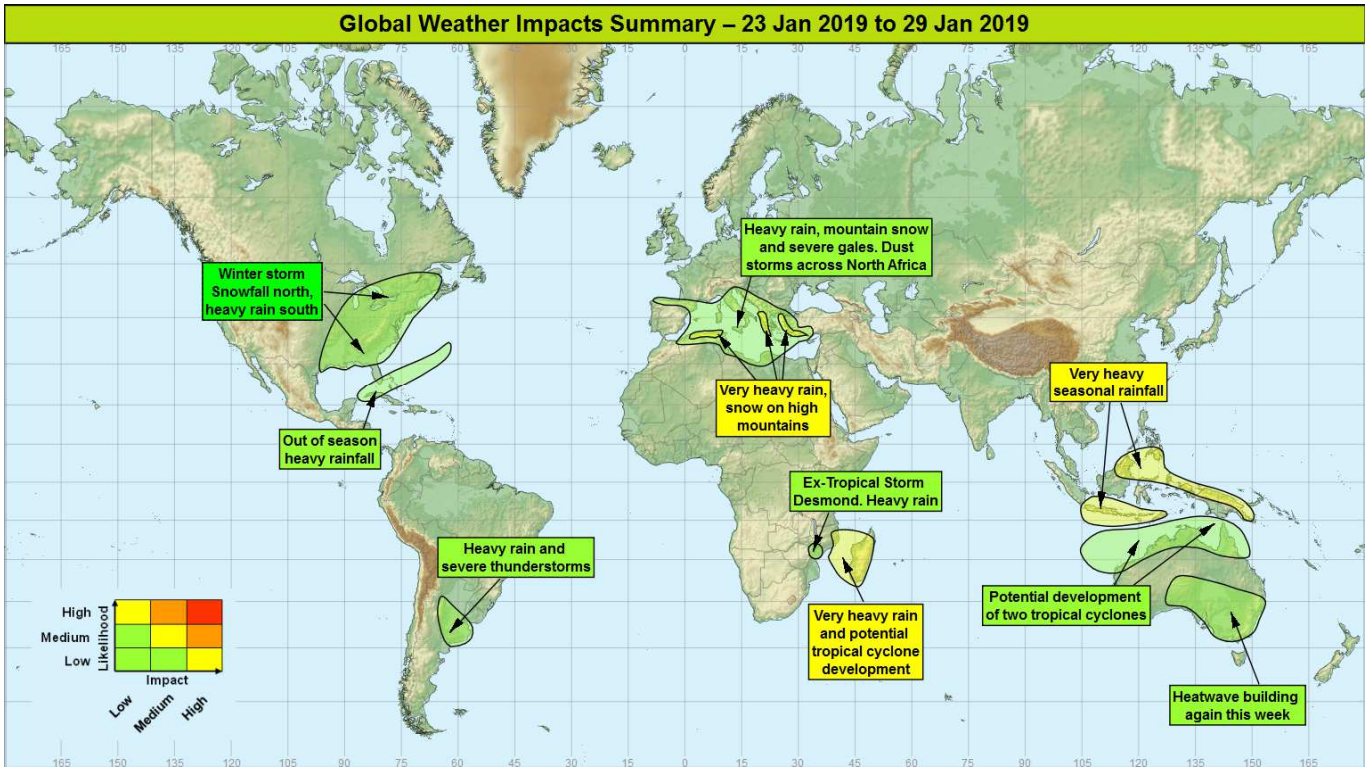
Daily Global Weather Impacts Assessment

Global Weather Impacts – Wednesday 23rd to Tuesday 29th January 2019

Issued on Wednesday 23nd January 2019

HEADLINES

- Likely development of a Tropical Cyclone in the Mozambique Channel today (Wednesday).
- Remaining very unsettled through much of the Mediterranean.
- Very heavy seasonal rainfall across parts of the Maritime Continent.
- A significant winter storm and Arctic air outbreak across eastern North America this week.

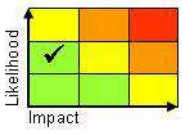


DISCUSSION

Tropical Cyclones

There are currently no active tropical cyclones, but the following regions are being monitored for potential developments

Timor Sea and Gulf of Carpentaria (Northern Australia)



Weather

Within the broad area highlighted the is a moderate possibility of tropical cyclones developing over the next 2 to 3 days. The first development is expected to occur in the Timor Sea before moving southwest into the Indian Ocean. The second in the Gulf of Carpentaria before affecting northwestern Queensland and the Northern Territory. Both cyclones are expected to bring heavy rainfall to the sparsely populated areas of northern Australia, with strong winds also possible in the Gulf of Carpentaria.

Discussion

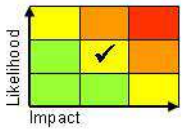
As the Madden Julian Oscillation (MJO) transfers eastwards across the Maritime Continent it is providing conditions suitable for enhanced convection across this region. The southern hemisphere couplets of two Equatorial Rossby Wave (ERW) pairs will then act as foci to organise this enhanced convection, and are likely to promote tropical cyclone development within the waves. Models now have fairly good agreement with the system in the Timor Sea remaining offshore as it tracks west into the Indian Ocean. However large differences remain for the development and subsequent track of the system in the Gulf of Carpentaria.

This forecast may be amended at any time

Global Guidance Unit, Operations Centre, Met Office, FitzRoy Road, Exeter
Tel: +44(0)1392 884319 VPN: n6225 4319 Email: ggu@metoffice.gov.uk

Expected Impacts
Flash and alluvial flooding likely across the extreme north of Australia. The potential for strong winds to impact parts of Queensland and potentially the Northern Territory this weekend, these may disrupt some transport and cause some slight damage to utility networks.

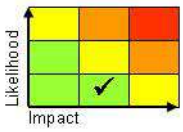
Mozambique Channel (Madagascar)



Weather
Within an area of enhanced rainfall *(See Africa section)* there is a high risk of a tropical cyclone forming in the southern Mozambique Channel over the next 24 hour. If this storm reaches tropical storm strength (the point where a name is assigned), it will most likely be called "Eketsang". There is high confidence this system will track southeast past the southern tip of Madagascar overnight Thursday into Friday, and then continue southeast into the open Indian Ocean.
Discussion
Within this area of enhanced convection, a low level circulation has formed on a shear boundary where the enhanced southerly winds (associated with Ex-Desmond), met the northeasterly trade winds. Convection associated with this circulation has become organised, and is beginning to spiral around the depression. The system will remain in an area favourable for development with all the usual ingredients present (warm SSTs, low vertical windshear, good equatorward and poleward outflow). There is excellent model agreement for the track discussed in the weather section.
Expected Impacts
Heavy rainfall from the system is expected to impact parts of southwestern Madagascar, increasing the risk of flash and alluvial flooding, plus landslides in regions where terrain is steep. Strong winds will generate rough seas and likely disrupt some maritime transport and fishing activities, as well as causing some damage to poorly planned and protected infrastructure.

Europe

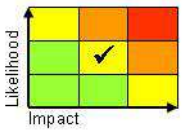
Much of the Mediterranean and adjacent countries



Weather
Very unsettled conditions will affect the region over the coming week, as an initial deep area of low pressure tracks slowly eastwards over the next few days, and is then followed by a further area of low pressure that develops on Sunday. Heavy rain and thunderstorms will affect many parts, with precipitation falling as snow across high mountains in the region (including across North Africa). The winds will be exceptionally strong for this area (reaching gale to severe gale force) and generate hazardous sea conditions. Winds of this strength will be capable of lifting large dust plumes from North Africa, with these potentially then being advected into parts of SE Europe.
Discussion
The well amplified pattern in the Atlantic will continue to see generate and feed areas of low pressure across the Mediterranean (as the case has been in recent months). The system that crosses the region between Wednesday and Sunday looks particularly potent, with gales developing across much of the sea area, and many location seeing 25-50mm of rain.
Expected Impacts
Heavy rainfall will increase the risk of flash and alluvial flooding, in addition enhancing the risk of landslides in areas where the terrain is steep. Snowfall over the high mountains may cause some disruption to transport over passes, and increase the risk of avalanche. The strong winds will likely generate a modest storm surge in some regions (coastal flooding), dangerous sea conditions will pose a significant threat to marine transport (especially small craft). Lifted dust storms may impact on the health of the local population.

Global Guidance Unit, Operations Centre, Met Office, FitzRoy Road, Exeter
Tel: +44(0)1392 884319 VPN: n6225 4319 Email: ggu@metoffice.gov.uk

Northern Algeria and Tunisia, western Greece and the Balkans, and parts of southwest Turkey



Weather

With the region of highly disturbed weather noted above, these three sub-zones are likely to have the greatest accumulations of rainfall relative to their climate over the coming days. All the locations highlighted are forecast to receive 150-200mm of rain over the coming week, which generally represents around 5-10 times more than the normal amounts.

Discussion

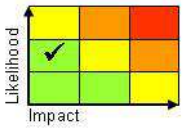
As described in the previous section. It is worth a note that soil moisture in the regions affected is already analysed at being close to saturation, meaning the impacts from this precipitation could be increased. Although northern Spain is also experiencing heavy rainfall from this event, output suggests the catchments in this region will be more able to cope with this amount of rainfall, and hence the impact is assessed as being likely to be slightly lower.

Expected Impacts

Heavy rainfall will increase the risk of flash and alluvial flooding, in addition enhancing the risk of landslides in areas where the terrain is steep. Snowfall over the high mountains may cause some disruption to transport over passes, and increase the risk of avalanche.

North America

Northeastern USA and southeast Canada



Weather

A further major winter storm will track northeast from the Plains to northeast Canada through Wednesday and Thursday. The system will bring large amounts of snowfall on its northwestern flank (25-50cm in some locations), transient snow and freezing rain on its leading northeast edge, and very heavy rainfall strong winds and locally severe thunderstorms on its southeastern flank. The impacts on Washington and New York from this system are likely to be chiefly to do with the heavy rainfall, whereas snow will impact the likes of Chicago, and strong winds the western Atlantic Ocean just off the US coastline. Following this system on Friday and through the weekend, a major outbreak of Arctic air will bring severe cold across eastern US, with further snowfall events possible in this region in the early part of next week.

Discussion

Much as in the Atlantic, a highly amplified upper pattern is in place across North America and the north Pacific. Following the development and passage of the low on Thursday and Friday which will bring a range of hazards, a frigid airmass will push south across North America. Locations such Chicago are expected to see temperatures range between -10°C and –20°C from Thursday to Saturday. Although the extreme cold will abate through Sunday and Monday (when some snow will affect the region) an even colder Arctic air outbreak is forecast to occur in the middle of next week.

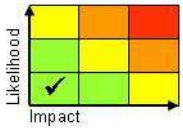
Expected Impacts

Snowfall and freezing rain in the north and northwest portions of this system will disrupt travel. Heavy rainfall will bring some flooding related impacts across southeastern states, with the potential for severe thunderstorms adding further threats from large hail, frequent lightning and isolated tornadoes. Strong winds along the eastern sea board are likely to lead to dangerous sea and surf conditions along the beaches. Finally in the extreme cold air outbreak following the system across the east of the continent, people without access to properly heated accommodation will be at risk from cold related injuries.

Global Guidance Unit, Operations Centre, Met Office, FitzRoy Road, Exeter
Tel: +44(0)1392 884319 VPN: n6225 4319 Email: ggu@metoffice.gov.uk

Central America and Caribbean

Cuba, Florida, Turks and Caicos and Bermuda



Weather

A band of rainfall will become slow moving in this region from Thursday onwards, with repeated bouts of heavy, rainfall and occasional thunderstorms running northeastwards along it. Some locations in this region are expected to see rainfall amounts between 10 and 20 times greater than what is typical here in late January (the drier season). However catchments in this region are more used to these totals in the wetter spells summer months.

Discussion

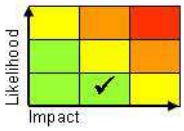
The system also causing the disruption across North America (described in the previous section) will push a cold front down across this region on Thursday, where it will then become slow moving and prone to waves, as it is engaged by troughs in the highly amplified flow across the region.

Expected Impacts

Heavy rainfall will increase the risk of flash and alluvial flooding, in addition enhancing the risk of landslides in areas where the terrain is steep. Thunderstorms adding further threats from hail and frequent lightning.

South America

Northeast Argentina and southwest Uruguay



Weather

Further bouts of severe thunderstorms will affect this region over the coming days, with the potential for very heavy rainfall (locally in excess of 100mm) to accumulate in a short period of time. Friday and Saturday look to be particularly active days.

Discussion

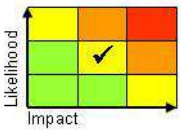
The South American convergence line will be active through the coming week. Areas of severe thunderstorms will form as the South American monsoon plume is engaged by troughs in the sub-tropical jet. Storms could be very severe with CAPE signalled to exceed 5000 J/Kg at times, this along with marked vertical windshear makes MCS and supercell formation likely.

Expected Impacts

Heavy rainfall will bring some flooding related impacts mainly of the flash variety if urban areas are impacted. Severe thunderstorms adding further threats from very large hail, frequent lightning, strong gusty winds and isolated tornadoes.

Africa

Mozambique Channel (Mozambique and Madagascar)



Weather

Heavy rain and thunderstorm could cause between 250-500mm of rainfall to fall in some locations through the week, representing up to 5 times the normal rainfall for this period (which is in the rainy season). A significant portion of this rainfall can be attributed to the flow around the likely development of a tropical cyclone in the Mozambique Channel, that will push southeast into the Indian Ocean Channel (*See Tropical Cyclone section*).

Discussion

In and around a tropical cyclone that will likely develop today in the Mozambique Channel (s*ee Tropical Cyclone section*) an area of enhanced showers and thunderstorms will exist throughout this region. The rainfall totals will be enhanced by the strong flow surrounding the tropical cyclone leading to the orographic enhancement of rainfall (mostly across Madagascar).

Expected Impacts

Heavy rainfall will increase the risk of flash and alluvial flooding, plus landslides in regions where terrain is steep.

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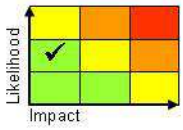
Central Mozambique, extreme eastern Zimbabwe and Malawi



Weather

The remnants of Ex-Tropical Storm Desmond have pushed inland across central Mozambique. These remnants are forecast to bring enhanced rainfall and thunderstorm activity to the region over the following couple of days. Between 100-200mm of rainfall could fall in this region, representing 2-3 times the usual amount in this week in late January.

Discussion

The moisture plume associated with the remnants of Desmond will continue to feed enhanced shower and thunderstorm activity to this region for the next few days.

Expected Impacts

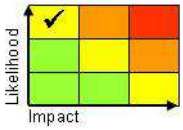
Heavy rainfall will increase the risk of flash and alluvial flooding, plus landslides in regions where terrain is steep.

Algeria and Libya – See *Europe* section.

Asia

Eastern Philippines, Indonesia, Timor-Leste – See *Tropical Cyclones* section.

Much of Indonesia and Papa New Guinea



Weather

The usual seasonal rainfall is expected to be more intense and widespread than is usual over the coming week. Up to 100 mm of rain could fall in a few hours, combined with locally strong winds or even a tornado. Rainfall totals of up to 350 mm could accumulate in places which is equivalent to around the whole of the average January rainfall in this region.

Discussion

With the Madden Julian Oscillation (MJO) running through the region over the coming days, the usual convection will be more intense and widespread than usual. The MJO has also triggered several over tropical waves, and these will enhance and focus convection even further. Finally a cold surge running down the South China Sea is expected to cross the equator and reach Java, further enhancing the intensity of precipitation in this sub-region.

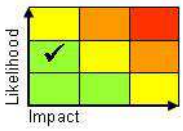
Expected Impacts

Heavy rainfall will increase the risk of flash and alluvial flooding, plus landslides in regions where terrain is steep. Thunderstorms will produce frequent lightning, with the potential for an isolated thunderstorm or waterspout.

Australasia

Northern Australia – See *Tropical Cyclones* section.

Southeastern Australia



Weather

The recent heatwave will continue for a couple of more days peaking on Thursday across the more populous southeast of the country. Over the weekend temperatures returning to near normal though this transition giving the risk of a few severe thunderstorms.

Discussion

High temperatures are not unusual for Australia in the last decade, and a couple more days of the current heatwave are expected. The arrival of the cold front will allow temperatures to return back to more normal values.

Expected Impacts

Impact on heath of vulnerable populations. Melting of roads and buckling of railways impacts infrastructure. Thunderstorms adding further threats from hail and frequent lightning, whilst wildfires become more probable (potentially ignited by lightning as the thunderstorms will be present in the transition to colder conditions).

Global Guidance Unit, Operations Centre, Met Office, FitzRoy Road, Exeter
Tel: +44(0)1392 884319 VPN: n6225 4319 Email: ggu@metoffice.gov.uk

Additional information

Nil.

Issued at: 230830 UTC **Meteorologist:** Nick Silkstone **Global Guidance Unit**

Global Guidance Unit, Operations Centre, Met Office, FitzRoy Road, Exeter
Tel: +44(0)1392 884319 VPN: n6225 4319 Email: ggu@metoffice.gov.uk