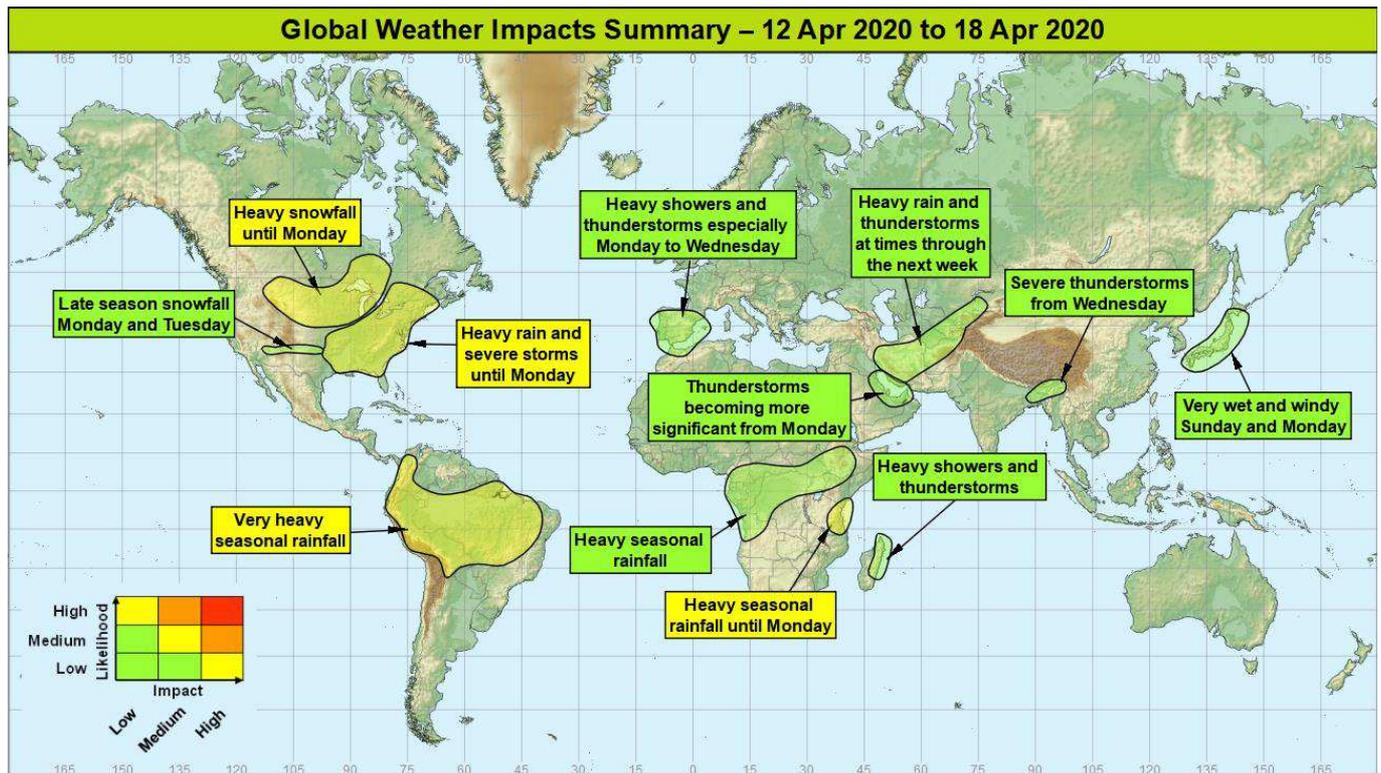


Global Weather Impacts – Sunday 12th to Saturday 18th April 2020

Issued on Sunday 12th April 2020

HEADLINES

- Severe storms and heavy rain across southern and eastern USA next few days.
- Late season severe winter storm across central parts of North America next few days.
- Very heavy seasonal rainfall in the north of South America this coming week.
- Continued potential for heavy seasonal rains for coastal East Africa continuing until Monday.



DISCUSSION

Tropical Cyclones

No tropical cyclone activity is expected over the next 7 days – but see Tanzania/Kenya section below.

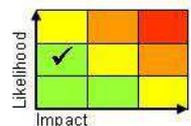
Europe

Spain, Portugal and northern Morocco

Weather

Showers and thunderstorm will affect parts of Iberia every day through the next week, but with more widespread, intense thunderstorms likely from Monday to Wednesday. During this period there is a threat of up to 30-50 mm falling in a few hours, with frequent lightning possible, and up to 75-100 mm through the next 7 days (around twice the April average rainfall in the region). However, confidence in exactly where the worst conditions will be is still fairly low

Discussion



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VPN: n6225 4319 Email: ggu@metoffice.gov.uk

A strongly cyclonic upper pattern will persist through the next week across and just west of Iberia. This upper pattern will be enhanced from Monday as a major upper vortex is steered south from Ireland across western Iberia, with a warm plume being dragged north from NW Africa on the eastern flank of the vortex. The combination of a diffluent, cyclonic upper flow and the warmer plume will produce an environment for the development of significant deep convection and the potential for organised, long lasting storms. Forecast profiles show good vertical wind shear, but CAPE generally no more than 700J/Kg. So organisation of storms likely, but large hail looks like a lower likelihood, with intense rainfall the highest likely impact.

Expected Impacts

Flash flooding is the most likely impact, especially from Sunday to Wednesday. Lower likelihood of power / transport disruption from frequent lightning.

North America

Southern and eastern parts of the USA

Weather

Severe thunderstorms developed yesterday (Saturday) across parts of Texas and Oklahoma, and are expected to become more frequent and extensive as the whole complex moves east and northeast through Sunday and Monday. Intense rainfall (up to 150 mm in 24 hours), large hail, damaging winds and long track destructive tornadoes are likely to be associated with these storms. The average April rainfall in the southern states is 100-150 mm, with the Eastern Seaboard usually seeing 50-100 mm through April.

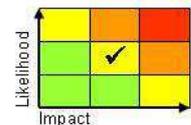
The trailing band of rain and showers is likely to stall across southeastern parts of the USA, producing further heavy rainfall and thunderstorms until later in the week.

Discussion

Models are in good broad agreement that a large mass of very warm, moist Gulf of Mexico air will continue to move northwards across this region, increasingly being engaged by both a relaxing cut-off vortex and a strong diffluent upper trough arriving from the north-west. Strong upper level winds on the periphery of relaxing vortex, and strong vertical wind shear will provide significant lift and instability to promote persistent and severe storms, and likely supercells. The severe storm threat for the Eastern Seaboard is lower, but intense rainfall still looks likely here. The trailing cold front is likely to become aligned with the upper flow and so becoming slow moving through much of the rest of the week, engaged by short wave upper troughs to produce active deep convection at times.

Expected Impacts

Localised flash flooding, hail damage, and wind damage, in the vicinity of the severe storms. Flash flooding also looks a threat for the Eastern Seaboard, perhaps impacting large cities.



Central/northern parts of the USA and southern/central Canada

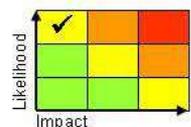
Weather

A marked cold plunge behind a rapidly deepening depression will continue to bring significant snowfalls to this part of North America, with widely 15-30 cm of snow likely having accumulated in parts of the west of the region yesterday (Saturday), and expected to be seen further east and northeast during Sunday and Monday, on the north-western edge of the storm system described above. The snowfall will be accompanied by strong or gale force east to north-easterly winds generating blizzard conditions and significant drifting at times, particularly across central and eastern parts of this region.

Discussion

A strong cold front well forced by a diffluent upper trough brought significant snowfall to the west of the region on Saturday, with this cold front expected to merge with the system affecting south-eastern parts of the US on Sunday and Monday. As the gradient tightens on the northern flank of cyclogenesis initiated across Central US, blizzard conditions and drifting of the snowfall are likely to become more widespread.

Expected Impacts



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This looks like a particularly severe late season winter storm that will produce difficult travel conditions with disruption to transport, and likely temporary disruption to utilities such as power/mobile phones. Agriculture (eg calving/lambing) likely to be significantly disrupted.

New Mexico, North Texas, Oklahoma

Weather

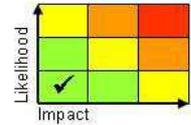
A spell of snow is expected early next week (Monday/Tuesday), bringing a temporary coverage of 5-10 cm of lying snow in some areas. This is unusually far south given the time of year.

Discussion

The cold plunge taking place over the weekend will allow cold air to extend unusually far south, interacting with a wave on the trailing cold front (forced by a short wave rounding the long wave upper trough) to bring a temporary spell of climatologically unusually far south snowfall. Good model agreement in this aspect, although lower confidence in coverage and longevity.

Expected Impacts

Some temporary transport disruption is likely.



Central America

Nil.

South America

Much of Ecuador, Peru and Bolivia, western Colombia and central/northern Brazil

Weather

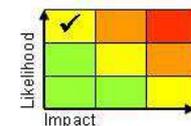
Enhanced shower and thunderstorm activity are signalled to continue across much of the northern Andes and Amazon through this period. A further 150-300mm of rainfall is likely to fall across the area. This represents locally more than double the average rainfall for parts of this region which have been very wet over recent weeks and months.

Discussion

The combination of the MJO moving east across this region during the next week, along with several Westward Inertio-gravity waves and a renewed South Atlantic Convergence pulse in the south of the region will greatly enhance the seasonal rainfall in this region.

Expected Impacts

Enhanced threat of further landslides and flash flooding, particularly in the steep terrain of the northern Andes. Flash flooding is a heightened threat in cities east of the Andes.



Africa

Eastern parts of Tanzania and Kenya

Weather

The threat of heavy seasonal rainfall from frequent heavy showers and thunderstorms is expected to continue through Sunday and into Monday along the coast of Kenya and Tanzania associated with a weak tropical depression. Up to 200 mm of rain could fall in a few days, which is close to the average for the whole of April.

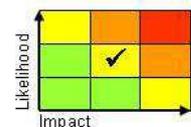
Towards the end of the week another weak tropical depression could move in off the Indian Ocean produce another heavy rainfall event in a similar area.

Discussion

All models produce a weak tropical cyclonic circulation which has moved in from the Indian Ocean during Saturday to produce more widespread heavy showers and thunderstorms to this part of the region. This system will weaken early next week as it moves inland.

Expected Impacts

Increased threat of flash flooding impacts that could impact the cities of Mombasa, Dar es Salaam and Zanzibar, flooding properties and potentially seriously impacting transport routes.



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Central parts of Africa

Weather

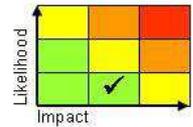
Fairly widespread showers and thunderstorms are expected in this part of Africa through the next week, with up to 50-75 mm falling a few hours, and up to 150 mm accumulating in places through the next 7 days. So it is likely that some parts of this region will see the average April rainfall accumulate within a week.

Discussion

The combination of westward moving tropical waves and the approach of the MJO is likely to enhance the seasonal convective rainfall across central latitudes of Africa through the coming week.

Expected Impacts

Flash flooding will become increasingly likely, as will landslides in mountainous terrain.



Eastern Madagascar

Weather

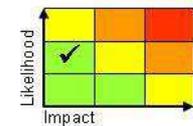
Enhanced heavy showers and thunderstorms are expected across eastern Madagascar in the next 4 or 5 days. 50-100 mm of rain is expected per day, with the northeast of the island particularly prone. April one of the wetter months across the islands, but as 150-200 mm of rain could fall in places, which represents around 50-75% the average rainfall for April.

Discussion

An enhanced easterly flow, plus a minor tropical depression moving to the north of the island is expected to bring more frequent heavy showers and thunderstorms to eastern Madagascar in the next 4 or 5 days.

Expected Impacts

Flash flooding in the major coastal cities is a threat during this event.



Northern Morocco – see *Europe section*

Middle East

Across and around the Persian Gulf

Weather

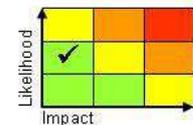
Through the next week thunderstorms are expected to affect the Persian Gulf and many areas around the Gulf. From Monday there is a higher likelihood that the thunderstorms will produce intense rainfall in places (up to 50 mm in a few hours), with a lower threat of hail. There will be a continued likelihood of strong winds and dense dust storms.

Discussion

An increasingly cyclonic upper pattern will develop through the weekend and persist through much of next week across the Arabian Peninsula, with the strengthening upper forcing engaging the northern edge of the resident warm plume at 700hPa. Much of the CB activity will be high based, initially 600hPa with limited ground reaching rainfall. However, as the forcing increases from Monday the base is likely to lower to 700hPa with the convective column above moistening with strengthening vertical wind shear in the convective column. This will result in locally intense rainfall reaching the ground, with the storms becoming organised and longer lasting. CAPE values could be high enough for the development of large hail.

Expected Impacts

Flash flooding and dense dust storms impacting transport networks, with some property flooding likely. Damaging winds and hail possibly associated with more severe thunderstorms.



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Asia

Iran, Afghanistan, Uzbekistan, Tajikistan and Kyrgyzstan

Weather

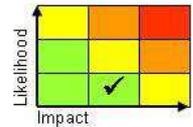
Further spells of persistent and locally heavy rain are expected to affect this region at times through the next 4 or 5 days, with thunderstorms also expected. Across many parts of the areas highlighted 40-60 mm of rainfall will build up with as much as 100-150 mm possible over high ground. This equivalent to more than a month's worth of rainfall in the wettest areas, and the rainfall could combine with seasonal snow melt to exacerbate the potential flooding, but this is low confidence.

Discussion

A succession of Western disturbances embedded within the STJ will continue to transfer east across this region over the next week with the associated upper forcing engaging the northern side of the warm plume to produce areas of rain and thunderstorms.

Expected Impacts

Flash flooding looks like the main threat in this region.



Bangladesh and northeast India

Weather

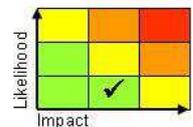
Severe thunderstorms are expected to develop across this region from Wednesday, producing intense rainfall (up to 100 mm in just a few hours) along with the threat of large hail and tornadoes. This is now the peak season for severe storm impacts in this region.

Discussion

Advancing upper trough will engage a warm plume advecting up from the Bay of Bengal from Wednesday. This will result in forecast profiles that show very large CAPE (around 4000 J/kg) and marked vertical wind shear containing very large low level shear.

Expected Impacts

Flash flooding is likely along with large hail damage. Tornadic damage is also possible along with impacts from frequent lightning.



Japan

Weather

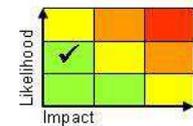
A period of very windy and wet weather is expected to transfer northeast across the large islands of Japan during the next few days, producing 50-125 mm of rain in just 24-36 hours (the average April rainfall in Japan between 75 and 125 mm). Gale or severe gales force winds are also expected with gusts to 55 mph possible in places.

Discussion

A sharpening upper trough will drive a developing depression across or just to the south of Japan later this weekend and early next week.

Expected Impacts

Threat of flash flooding with a lower likelihood of landslides. Lower likelihood of wind damage or disruption.



Australasia

Nil.

Additional Information:

Nil.

Issued at: 120320 UTC **Meteorologists:** Paul Hutcheon

Global Guidance Unit

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Global Guidance Unit, Operations Centre, Met Office, FitzRoy Road, Exeter, Tel: +44(0)1392 884319

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