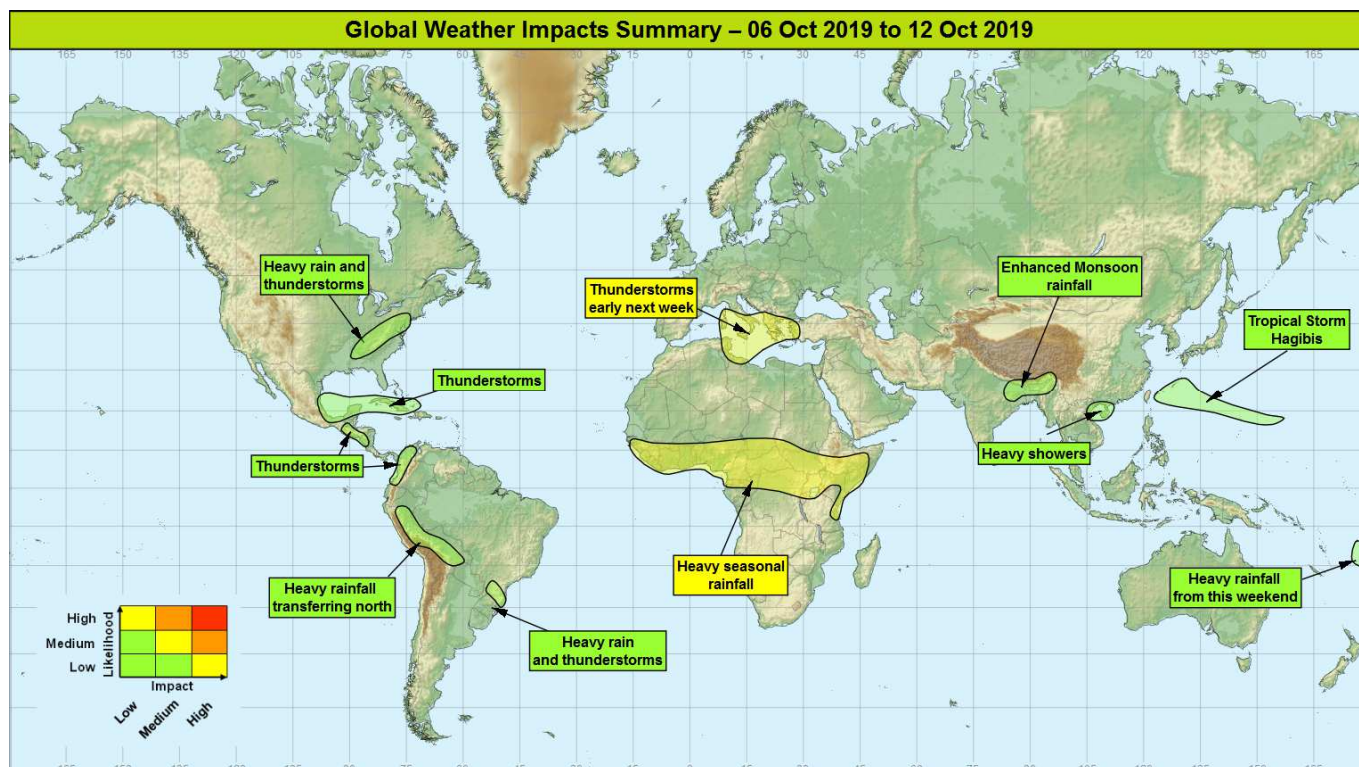


Global Weather Impacts – Sunday 6th to Saturday 12th October 2019

Issued on Sunday 6th October 2019

HEADLINES

- Enhanced rainfall across Tropical Africa in the coming week.
- Severe thunderstorm threat at times in southern Europe and the central Mediterranean.
- Tropical Storm Hagibis on the north-western Pacific likely to become a powerful typhoon in the coming week.



DISCUSSION

Tropical Cyclones

Tropical Storm Hagibis – Northwest Pacific Weather

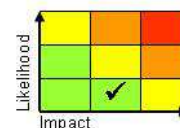
Hagibis formed on Saturday evening and lies over the NW Pacific, roughly 800 miles east of Guam. This is likely to intensify steadily over the next few days, crossing the northern Mariana Islands as a typhoon tomorrow (Monday) and going on to become a Violent Typhoon (sustained winds of 105kn or more) thereafter. Hagibis looks likely to be approaching the southern islands of Japan by the end of this forecast period.

Discussion

Hagibis formed through consolidation of ERW coupled convection overnight. There is a strong signal from NWP for the development of a major typhoon through the coming week. After crossing the unpopulated northern Mariana Islands on Monday, the system looks most likely to curve towards Japan, although the timing of the turn currently shows a large spread in ensemble output leading to low confidence in the location of any landfall at present.

Expected Impacts

Risk of tropical storm conditions to the populated southern Mariana Islands on Monday, low risk of typhoon conditions. Growing threat of typhoon conditions (most likely Japan) towards the end of this forecast period.



This forecast may be amended at any time

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Europe**Parts of SE Europe, Tunisia and Libya****Weather**

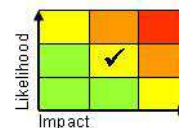
Severe thunderstorms are likely to redevelop quite widely over this region, bringing large amounts of rain (locally 50-75mm in a few hours) and isolated large hail storms. The heaviest showers look likely to become mainly confined to Tunisia / NW Libya from Tuesday, potentially quite slow moving and persistent where up to 200 mm could fall in a couple of days over coastal parts given a feed of frequent showers and thunderstorms. This region of Tunisia typically receives around 50 mm of rainfall in October, although a similar event was seen here in 2018.

Discussion

On Monday another major trough extension is signalled to take place, engaging the resident warm/moist air mass, generating occasional thunderstorms which will be vigorous in places (very high CAPE), and MCS developments. As the trough disrupts on Tuesday, the mobile portion will accelerate E taking thunderstorms across Greece and into Turkey and quickly dissipating, but the slow moving cut-off sinking across Tunisia and Libya will generate a 48hr (at least) spell of heavy showers/thunderstorms, which will become persistent across coastal parts as a depression forms over Libya, establishing an unstable easterly flow beneath the upper cold pool containing increasingly frequent showers/thunderstorms.

Expected Impacts

The main impacts are likely to be localised flash flooding, isolated hail/lightning and minor wind damage, some disruption to transport and utilities possible. Over north Africa, potential for more significant flooding where showers persist longest, mainly E Tunisia. A similar, perhaps more severe event in this region in September 2018 resulted in deadly flash floods which killed at least 4 people.

**North America****Eastern USA****Weather**

A band of heavy rain and thunderstorms is expected to develop late Sunday into Monday, with 25-50mm of rain in 24 hours quite widely, but some locations perhaps seeing 75-100mm. The thunderstorms are likely to be accompanied by the odd strong, possibly damaging wind gust.

Discussion

A cold front is forecast to become slow moving over the region, with a sharp but mobile upper trough swinging across developing a band of heavy (for a time) rain and likely thunderstorms in the warm air ahead of the cold front. The environment does not look conducive for severe thunderstorms (large hail/tornadoes) however. Once the trough moves on the rain band should quickly decay.

Expected Impacts

Localised flash flooding of homes/businesses, temporary transport disruption, perhaps affecting some of the major east coast cities.



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Central America and Caribbean**Cuba, southern Bahamas, and Mexico.****Weather**

More frequent than normal thunderstorm activity is expected during at least the next 5 days. Isolated rainfall accumulations of 20-40mm are probable in a few hours; some locations could see in excess of 100mm through this period. The remnants of a tropical wave is expected to bring very heavy rainfall to parts of eastern and southern Mexico, perhaps 200-300 mm of rain from Monday which would be the equivalent of the whole average October rainfall in a few days.

Discussion

A broad trough of low pressure exists over this region, providing an environment for enhanced showers and thunderstorms through the coming days. The remnants of a tropical wave migrating westwards will tend to elongate the trough towards Mexico bringing significant enhancement to showers and thunderstorms as it and its associated high WBPT airmass make landfall over parts of eastern and southern Mexico early this week.

Expected Impacts

Increased risk of flash flooding (possibly severe across parts of Mexico), with landslides also more likely in areas of steep terrain.

**Guatemala, El Salvador, Honduras, Nicaragua, northern and western Colombia****Weather**

Shower and thunderstorm activity is expected across the tropical Pacific Ocean coastline, maintaining the possibility of locally heavy downpours producing 50-75 mm of rainfall in a few hours. The largest cumulative rainfall totals are expected to be across portions of northern and western Colombia which have already been impacted by flooding in the past week.

Discussion

A series of tropical waves will be supportive of enhanced convection across Central America.

Expected Impacts

Increased risk of flash flooding with landslides also more likely in areas of steeply sided terrain. Further river flooding is possible, especially in parts of northern and western Colombia.

**South America****Northern and Western Colombia** – See *Central America and Caribbean* section.**Southern Brazil****Weather**

An area of heavy rain and thunderstorms will continue slowly north across this region today. Although activity will tend to ease through the day, a further 50-75 mm of rainfall is possible in places.

Discussion

Thunderstorms associated with this system have produced significant rainfall in recent days. Rain associated with the developing cold front will be persistent but generally less heavy, although profiles still support the risk of embedded deep convection.

Expected Impacts

Risk of flash flooding, particular in the larger urban areas.

**Bolivia and Peru****Weather**

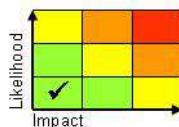
A northward transferring area of heavy rainfall and thunderstorms is expected across this region for the next few days. Up to 100-150 mm of rain could fall in a 24 hour period. This rainfall heralds the beginning of the rainy season in this region.

Discussion

A northward extension of the sub-tropical jet will engage the southern part of the tropical plume to produce an area of deep convection that will transfer north across western parts of South America.

Expected Impacts

Flash flooding is the main impact, with a lower likelihood of landslides.



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**Africa****Equatorial Africa****Weather**

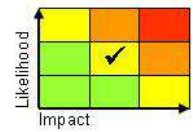
Shower and thunderstorm activity is expected to be more frequent than normal across a large portion of equatorial Africa for much of the coming week, with a particular focus on eastern Africa where the beginning of the wet season is now underway. 30-50 mm of rain could fall in a few hours, locally up to 100 mm in a few places, with some localised totals of up to 200 mm possible through the next week, close to what is normally seen over an entire month.

Discussion

An active phase of the MJO moving through Phase 1 across Africa, plus possible ERW activity and a strong positive Indian Ocean Dipole is expected to result in period of above average rainfall across much of the equatorial region. Whilst the West African Monsoon has begun to retreat across the Sahel, additional late season rainfall in this region comes at a time where river levels are approaching an annual maximum and is where flooding impacts are considered most likely. Rainfall across east Africa is now starting to increase significantly, the positive IOD state expected to make rainfall more intense than normal here over the next 2-3 months.

Expected Impacts

Increased likelihood of flash and river flooding along with land/mudslides in areas of more steeply-sided terrain. These impacts are most likely in northern parts of the region highlighted due to antecedent conditions over recent weeks contributing to increased sensitivity.

**Middle East**

Nil.

Asia

Southern Japan – See *Tropical Cyclones* section.

Southern China and northern Vietnam**Weather**

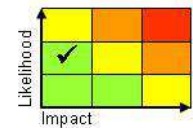
A zone of heavy showers and thunderstorms over the South China Sea are expected to transfer westwards close to southern China then into northern Vietnam over the next few days. Up to 50 mm of rain may fall in short time, with potentially 100-150 mm in 24 hours.

Discussion

Enhanced convection associated with the passage of a Rossby wave across the region,

Expected Impacts

Increased potential for flash flooding along with land/mudslides in areas of more steeply-sided terrain.

**North-east India, North Bangladesh, Nepal****Weather**

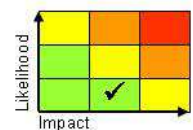
An increase in monsoon rainfall across the region is expected early this week, with frequent showers and thunderstorms bringing 50-100mm per day in some locations, and locally in excess of 200mm before the end of the week.

Discussion

The slow but steady southward progression of the sub-tropical jet is starting to have an influence on the monsoon plume, which is slow to retreat this year. Longwave troughing approaching from the W, replacing the current broad ridge, is expected to have a remote but still important influence in that it will promote more frequent convection. Profiles exhibit high PWAT and large CAPE, slow steering flow will increase the rainfall totals where the heavy showers develop (expected to become quite widespread).

Expected Impacts

Increased risk of flash flooding, and river flooding (many rivers already very high with further rainfall increasing the flooding risk and exacerbating ongoing issues).



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**Australasia****Fiji****Weather**

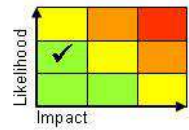
Enhanced heavy rain and embedded thunderstorms are expected to develop in the vicinity of Fiji over the coming days, bringing 100-200mm of rainfall in around 48 hours. This equates to almost a month's worth of rain for somewhere like Nadi

Discussion

The South Pacific Convergence Zone lies just to the N, with a sharp and relatively low-latitude trough disruption/cut-off vortex swinging by on Sunday/Monday. This will draw the SPCZ southwards, and develop an area of heavy rain and slow moving thunderstorms across Fiji and surrounding areas. As the upper trough relaxes away early next week rainfall will return to normal levels.

Expected Impacts

Increased likelihood of flash flooding, and disruption to transport/homes/businesses.

**Additional Information**

The Indian Summer Monsoon (also called the South Asian Monsoon) has still to retreat south. This process should have started on the 1st of September, with the northern edge of the monsoon by now having retreated southeast of Delhi and Mumbai. This is now the latest ever commencement of the monsoon withdrawal, but a marked withdrawal is expected to take place within the next week. The 2019 Indian Summer Monsoon (June to September) has been the third wettest on record (back to 1901), and the wettest since 1994. September was the wettest September across India in 102 years.

Issued at: 060915 UTC **Meteorologists:** Mark Sidaway / D J Harris

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