

## Weather Assessment for Pakistan

Issued on Tuesday 11<sup>th</sup> August 2015 at 0600 UTC (**All times UTC**)

### Seasonal low centred over Balochistan with shower risk continuing over central/northern Pakistan

- Through the remainder of the week, scattered heavy showers and thunderstorms will continue to affect northern Punjab, central and southern Khyber Pakhtunkhwa, FATA and AJK. As seen in recent days, some significant rainfall can be expected with locally 50-75mm falling within 6 hours and 100mm in 24 hours.
- Although widespread significant rainfall is not expected over the coming days, there is expected to be a slight increase in the probability and amount of precipitation over the aforementioned regions during the second half of this week (from Thursday) which may exacerbate existing flooding and provide slightly higher river flows. Additionally, in areas of high ground where soil moisture is already higher than normal, there is a heightened risk of localised landslides/mudslides.
- Across southern Punjab, Sindh and Balochistan, there remains a risk of isolated heavy showers maintaining a smaller likelihood of flash flooding.
- Temperatures across mountainous parts of northern Pakistan are currently around or slightly above average. Heading into next week, there is a signal for temperatures to increase towards values seen over recent days which may lead to a slight increase in snow melt and subsequent risk of glacial lake outburst floods/downstream river flow rates. Warnings for GLOFs were issued for parts of northern Pakistan between 8-10 August ([http://www.pmd.gov.pk/GLOF\\_ALERT.pdf](http://www.pmd.gov.pk/GLOF_ALERT.pdf)).

### Below average rainfall and temperatures around normal expected over the next few weeks

- Through the remainder of August, there is a continued signal for below average rainfall to develop as the withdrawal of the Southwest Monsoon begins towards the border with India for the beginning of September.
- In the longer term, it is most likely that near or below average rainfall is to be expected, particularly across southern Pakistan in September, October and November.
- Temperatures across southern Pakistan have been largely below average in the last few weeks, but are expected to recover closer to normal or slightly above later in the month. Thereafter, temperatures are expected to be similarly near or slightly above average in the seasonal period of September, October and November across Pakistan.

The Pakistan Met Department forecast for the coming week contains a similar outlook to that described above (<http://www.pmd.gov.pk/WeeklyWeather/NWWO.html>) for the coming days, although showers are likely to be greater in number from Thursday onwards.

Current river and reservoir readings from across Pakistan have been provided by Pakistan Meteorological Department and Flood Forecasting Division <http://www.ndma.gov.pk/new/disasters/sitrep.php>

The Pakistan Meteorological Department's Flood Forecast Division has detailed the historical peak river discharges at various sites for river catchments across the country.

[http://www.pmd.gov.pk/FFD/index\\_files/hpeak.htm](http://www.pmd.gov.pk/FFD/index_files/hpeak.htm).

These can be compared with daily dam inflow/outflow measurements at Tarbela and Mangla dams that are currently being recorded [http://www.pmd.gov.pk/FFD/index\\_files/damsaug15.htm](http://www.pmd.gov.pk/FFD/index_files/damsaug15.htm).

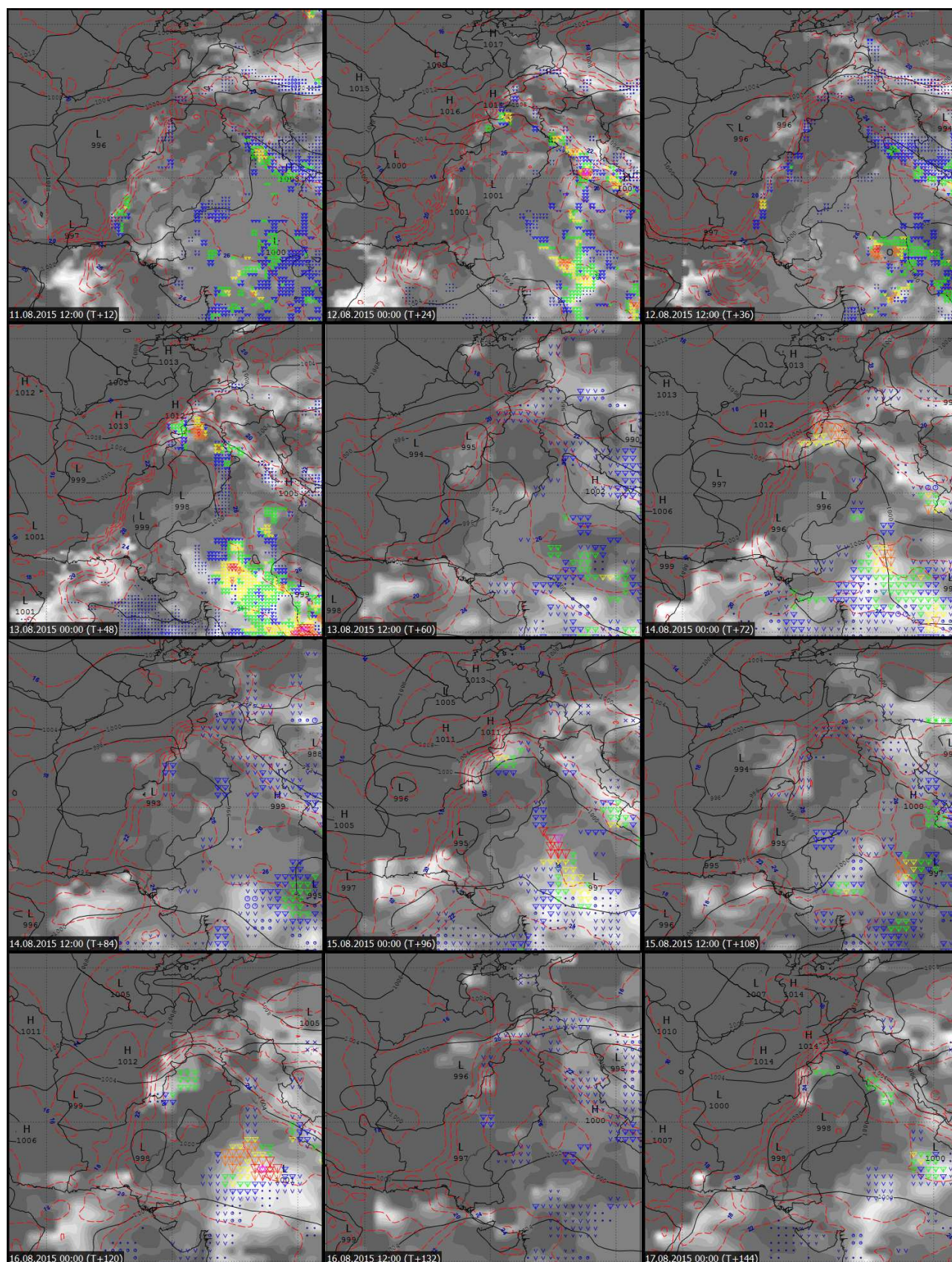
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**Fig 1:** 11/00Z GM MSLP, precipitation and cloud for the next 5 days.



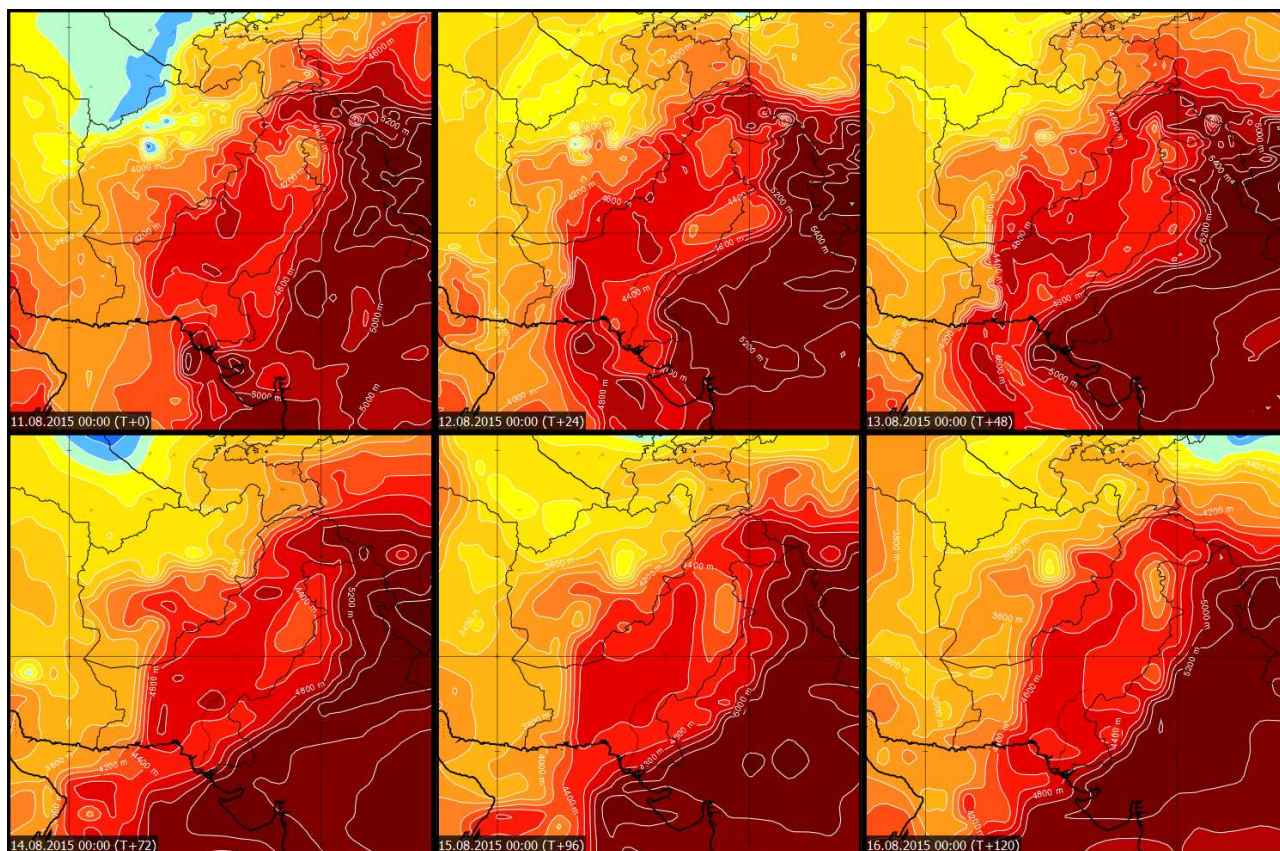
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**Fig 2:** 11/00Z GM wet-bulb freezing level (height in metres above mean sea level) – This gives an approximate indication of the height below which snow is likely to melt. The altitude is expected to lower across Gilgit Baltisan and northern Khyber Pakhtunkhwa on Tuesday, then remaining at similar values for the next 5 days.



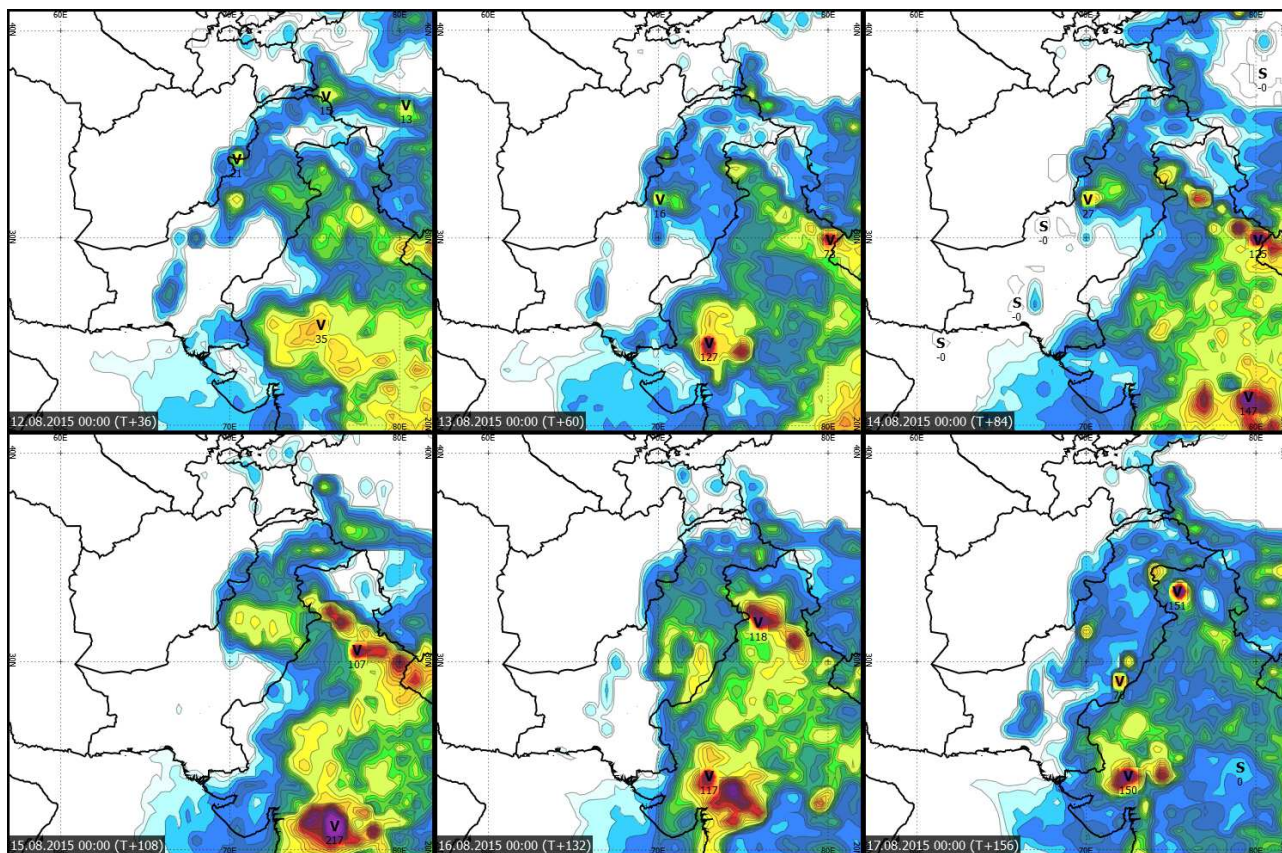
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**Fig 3:** 24-hour precipitation accumulation for the next 5 days from 11/00Z GM (top), 10/12Z EC (bottom).



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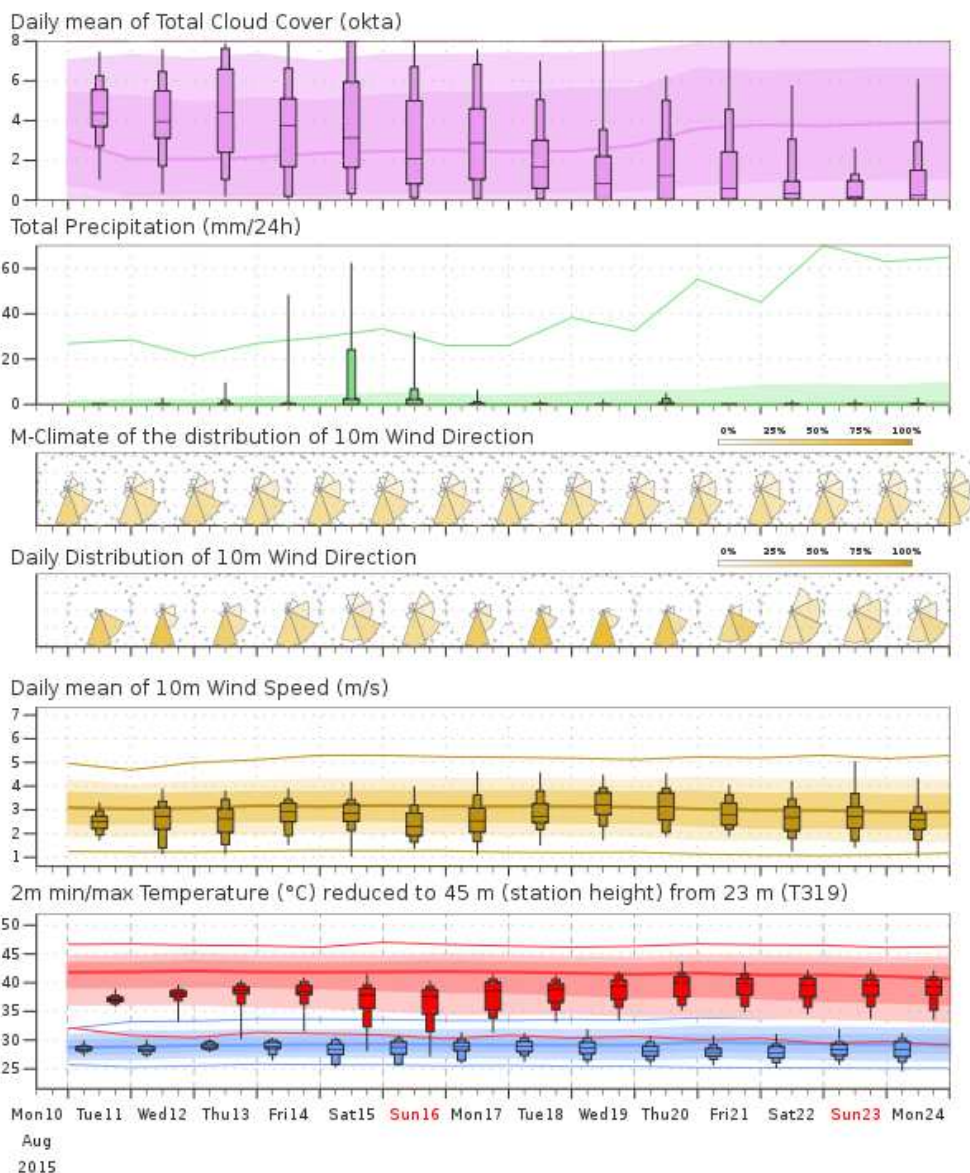
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**Fig 4:** 10/12Z EC Meteogram for Lārkāna, Sindh Province – Conditions remaining largely dry across southern Pakistan but there is the risk of isolated heavy showers/thunderstorms later in the week. Temperatures are below average currently, with only a gradual recovery towards normal expected later in the month.

ENS Meteogram  
 L<sup>09</sup>rk<sup>09</sup>na, Pakistan 27.8°N 68.4°E (EPS land point) 45 m  
 Extended Range Forecast based on ENS distribution Monday 10 August 2015 12 UTC



**M-Climate:** this stands for Model Climate. It is a function of lead time, date (+/-15days), and model version. It is derived by rerunning a 11 member ensemble over the last 20 years twice a week (1980 realisations). M-Climate is always from the same model version as the displayed ENS data.

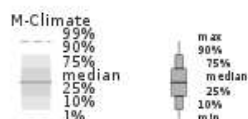
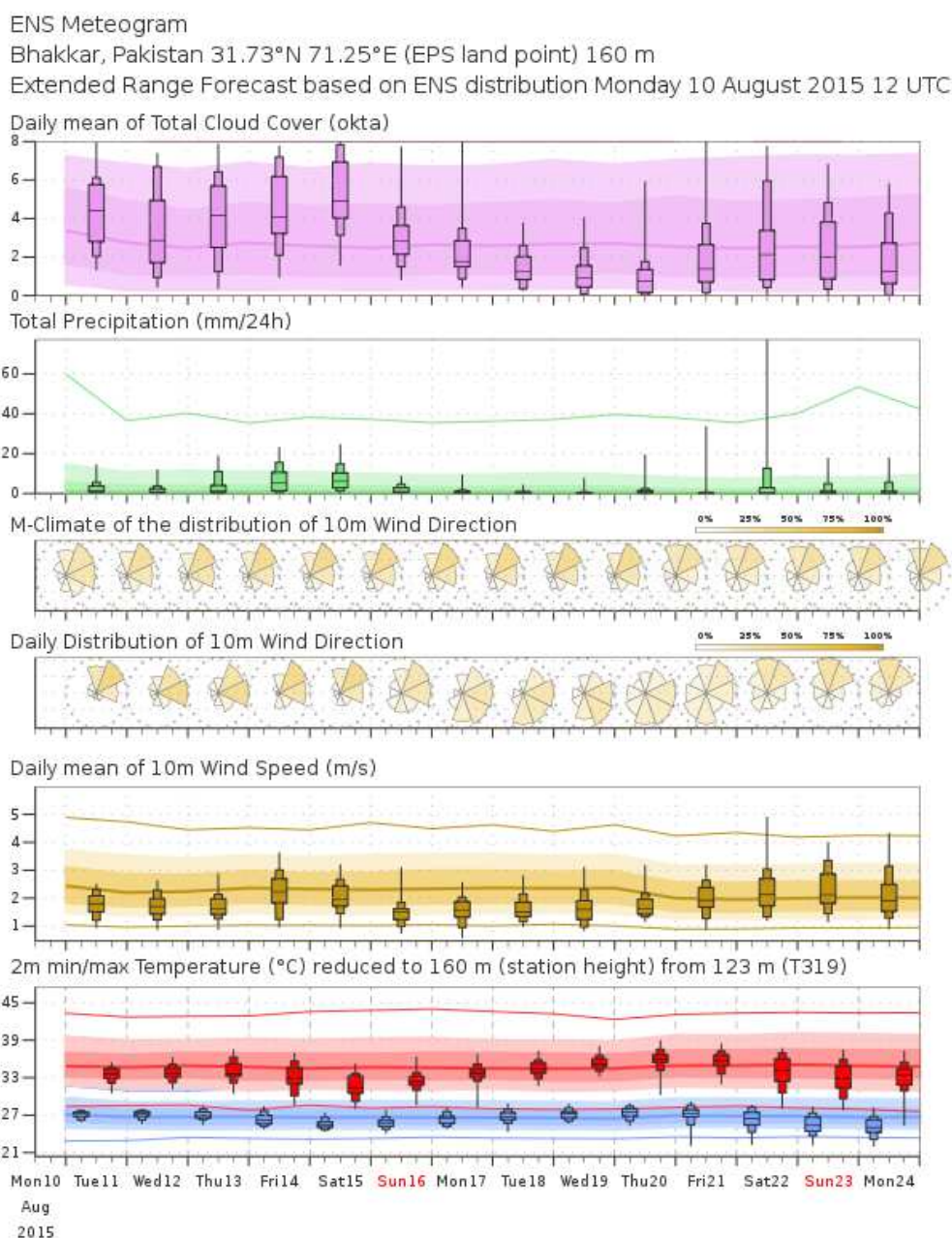
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**Fig 5: 10/12Z EC Meteogram for Bhakkar, Punjab** – There is a signal for increased rainfall across central Pakistan during the second half of this week, before a trend to drier conditions is anticipated next week with reducing amounts of cloud.



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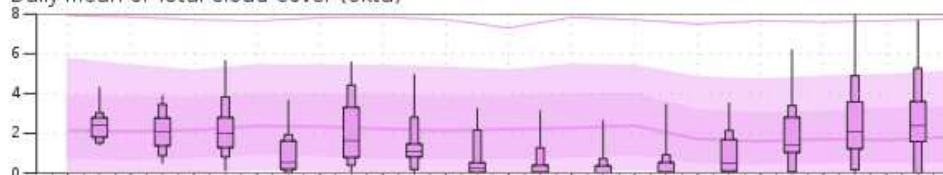
**Fig 6:** 10/12Z EC Meteogram for Chitral, Khyber Pakhtunkhwa – Temperatures are expected to remain around average this week, before rising slightly above average through next week. This may lead to a slight increase in snow melt and risk of glacial lake outburst floods compared to previous days.

ENS Meteogram

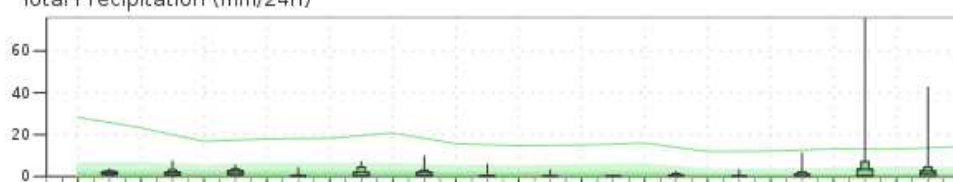
Chitral, Pakistan 35.66°N 72°E (EPS land point) 1518 m

Extended Range Forecast based on ENS distribution Monday 10 August 2015 12 UTC

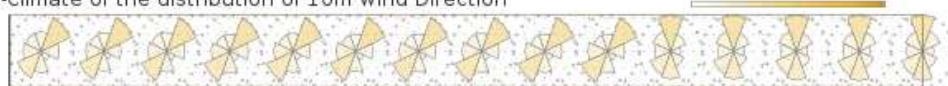
Daily mean of Total Cloud Cover (okta)



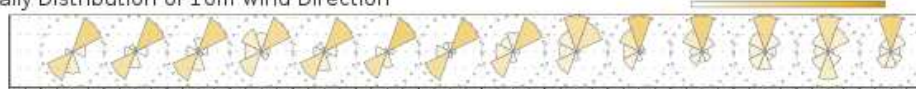
Total Precipitation (mm/24h)



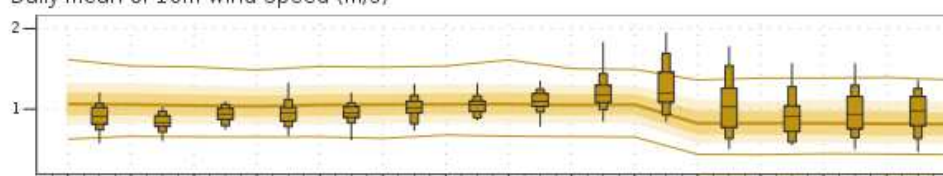
M-Climate of the distribution of 10m Wind Direction



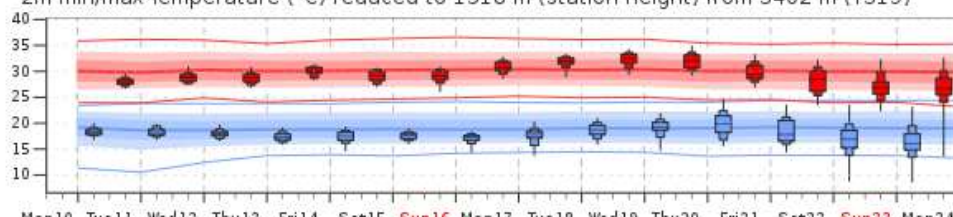
Daily Distribution of 10m Wind Direction



Daily mean of 10m Wind Speed (m/s)



2m min/max Temperature (°C) reduced to 1518 m (station height) from 3402 m (T319)



Mon10 Tue11 Wed12 Thu13 Fri14 Sat15 **Sun16** Mon17 Tue18 Wed19 Thu20 Fri21 Sat22 **Sun23** Mon24  
Aug  
2015



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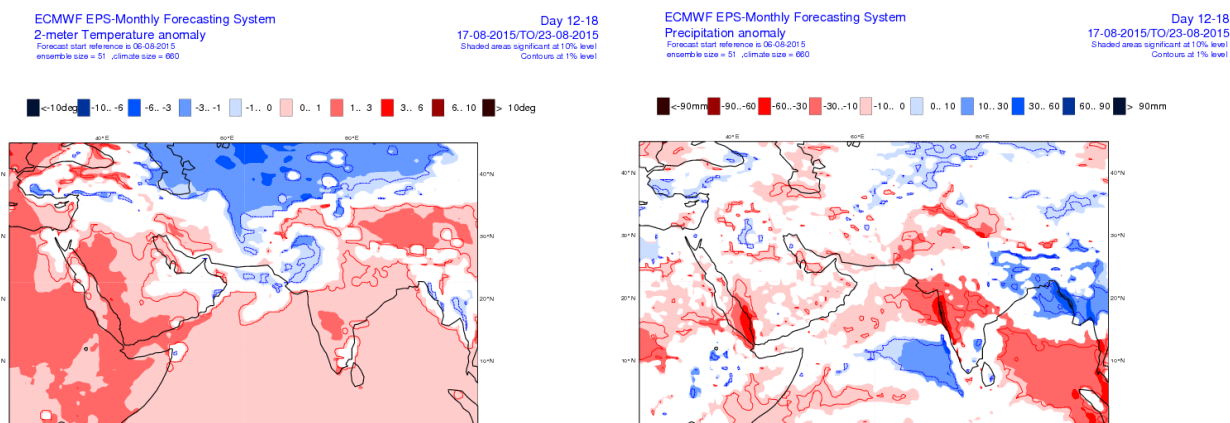
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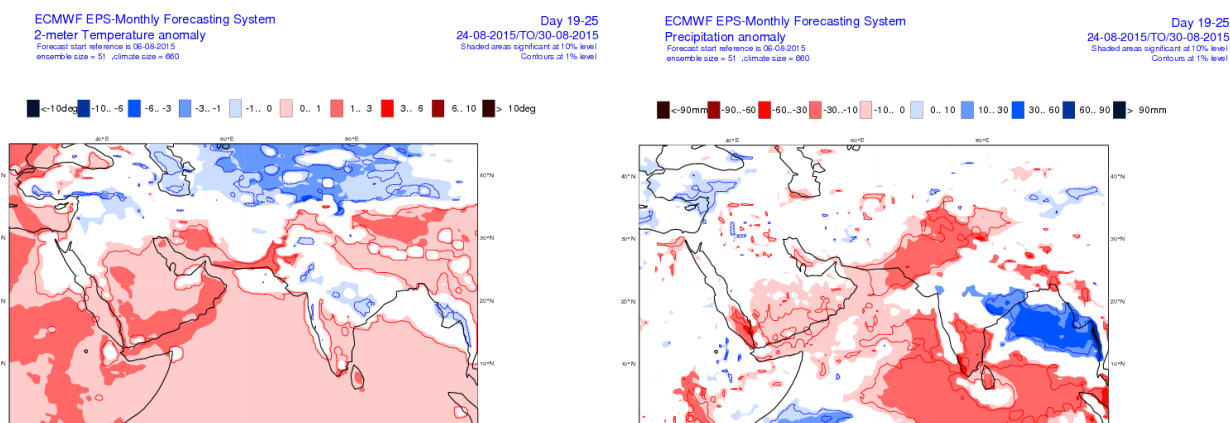
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**Fig 7: ECMWF Extended Forecast of anomalous surface temperature (left) and precipitation (right) for the next 3 weeks. Above average temperatures in northern Pakistan (Gilgit Baltistan, PAK and KP) are expected to continue into September, and recover to near normal elsewhere having been slightly below normal to date. There is a strong signal for below average rainfall by late August across Pakistan.**

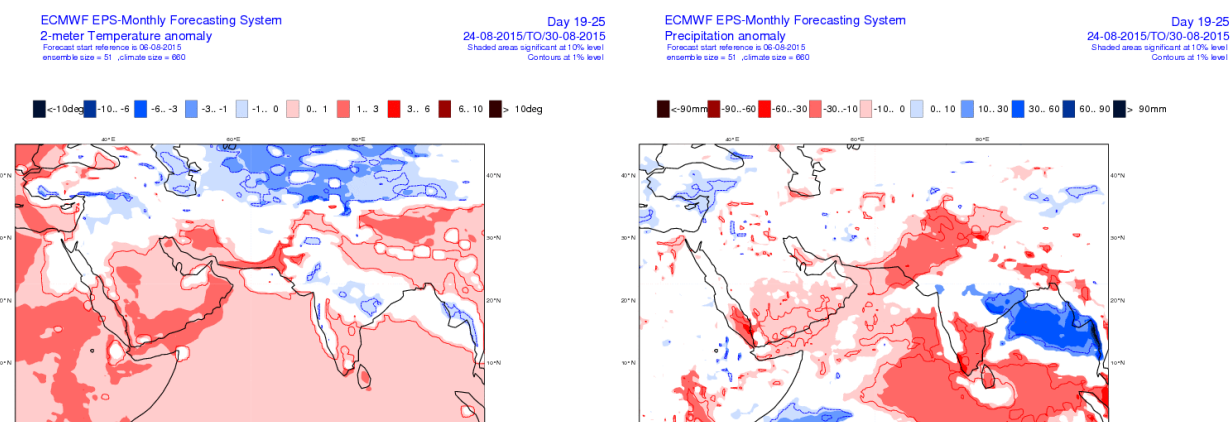
## 17 August to 23 August



## 24 August to 30 August



## 31 August to 6 September



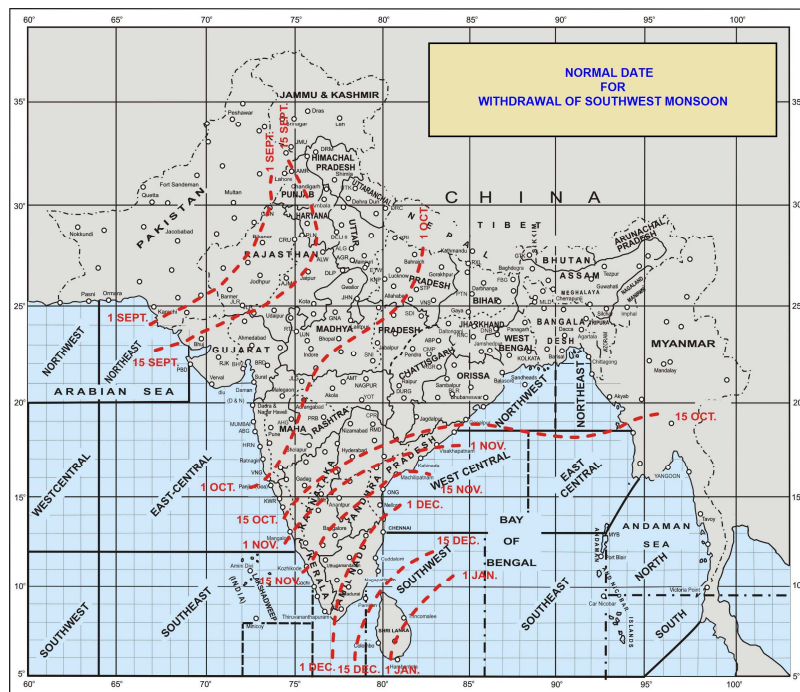
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**Fig 8:** Indian Met Department Normal Date for Withdrawal of SW Monsoon. Monsoon is climatically expected to the south of Pakistan in the south by the start of September and the north by the middle of the month. El Nino is now firmly established and would suggest a weaker (less rainfall) monsoon than normal. The Indian Met Department reports that this year's monsoon has followed this pattern ([http://www.imd.gov.in/Press Release](http://www.imd.gov.in/Press%20Release)). The EC Long Range forecast supports the signal for below average rainfall, particularly in southern Pakistan through September, October and November.



Issued at: 110600Z

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