



**Institute of Meteorology ,
Hydrology and Environment, Mongolia**

Recent climate feature and seasonal outlook for winter 2014/15 in Mongolia

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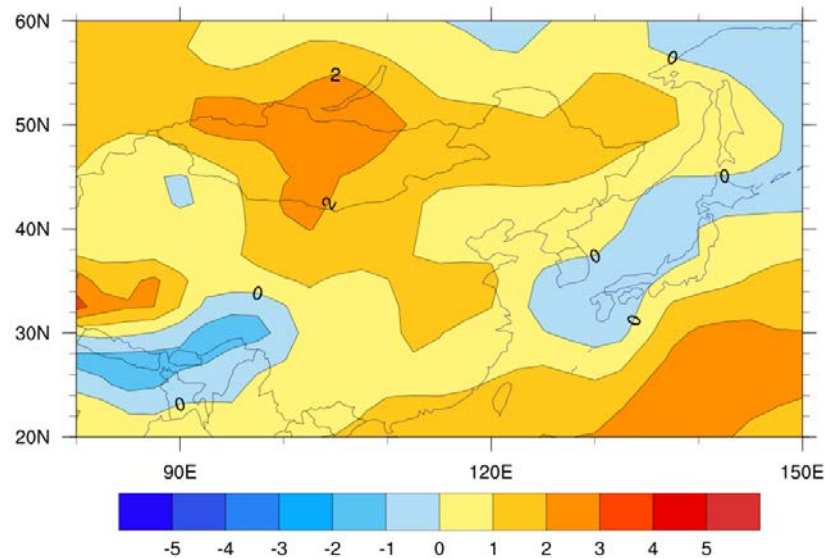
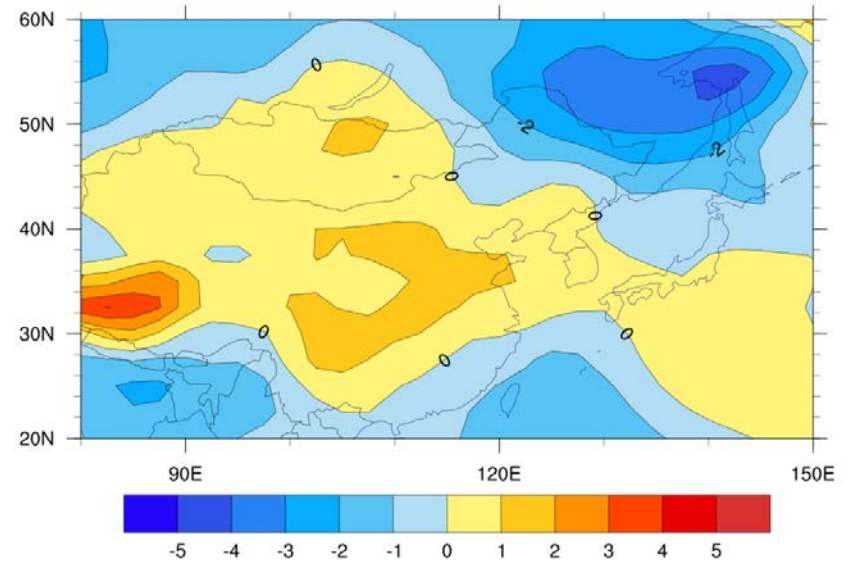
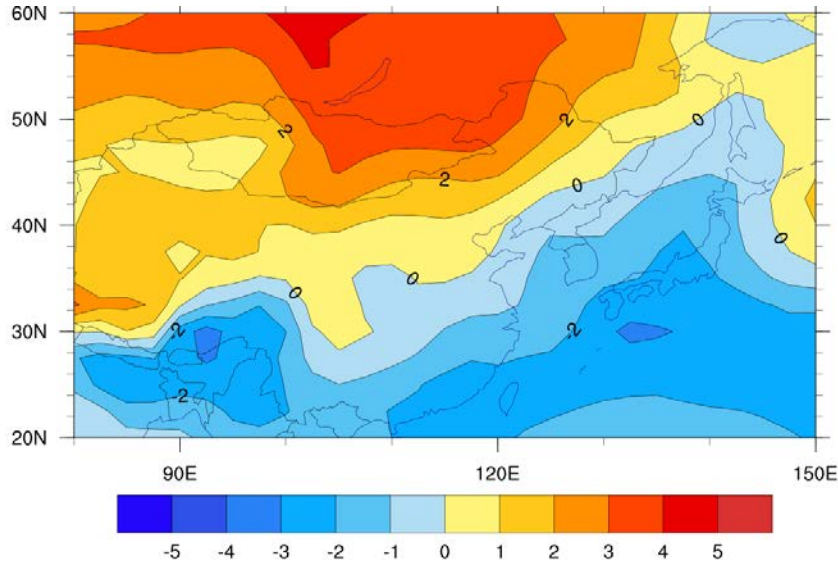
Tokyo, Japan
29-31 October 2014



Last summer climate review

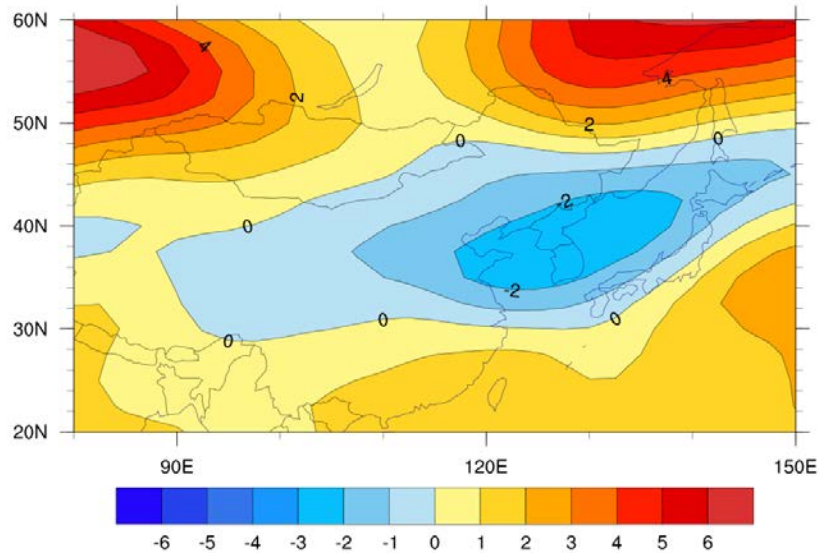
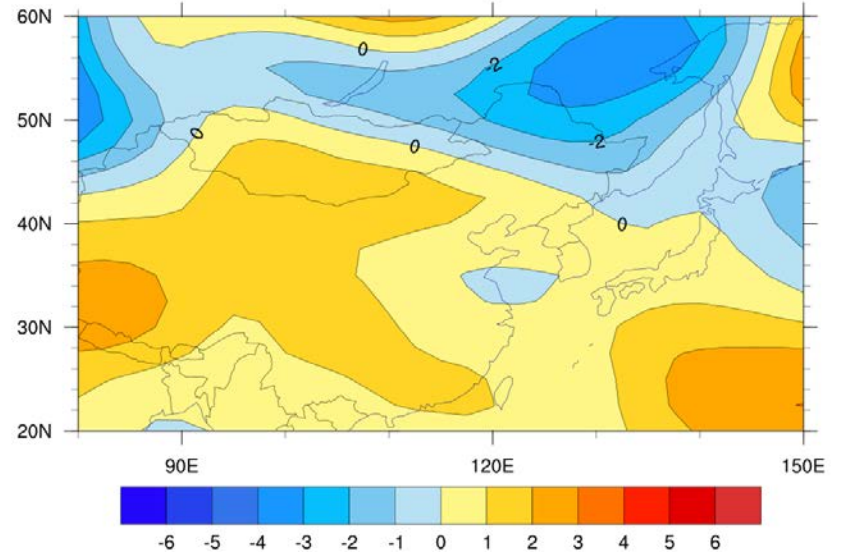
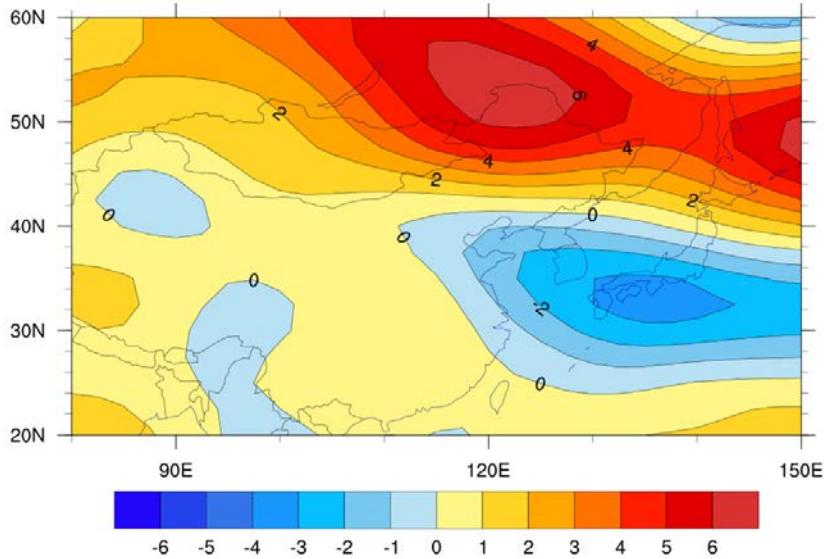


MSLP & Anomaly (JJA)





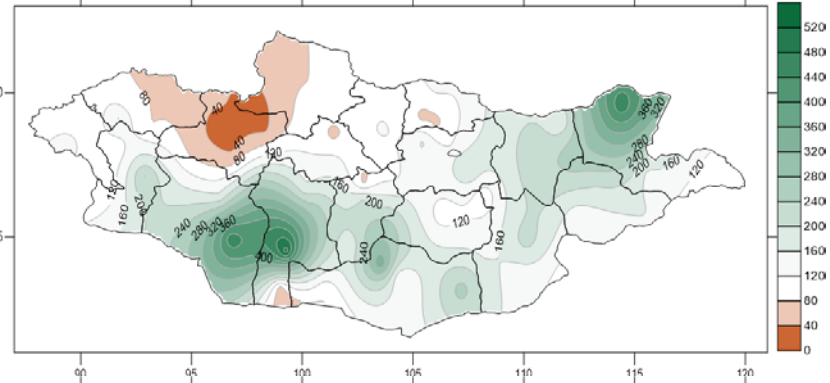
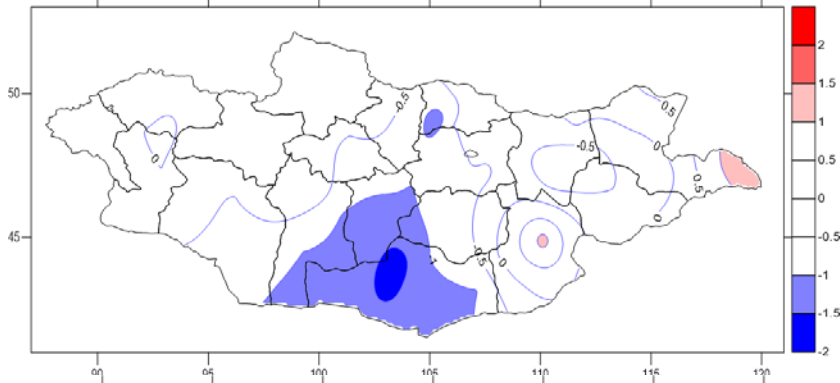
Anomaly of 500hPa (JJA)



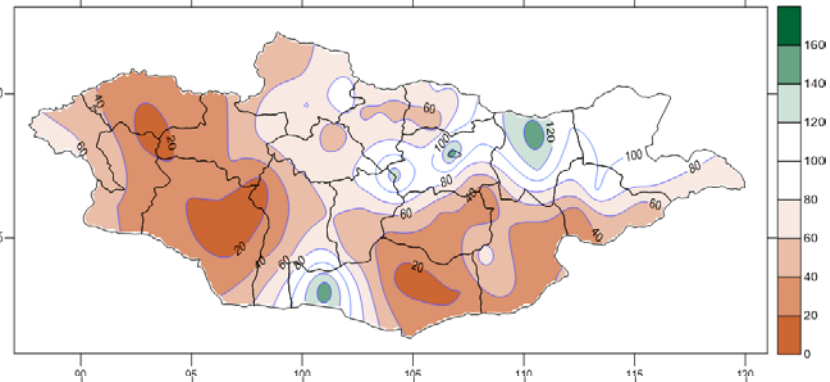
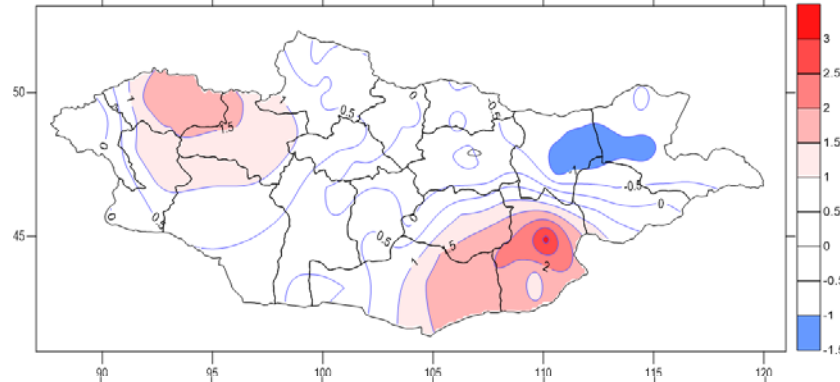


Temperature and Precipitation anomaly

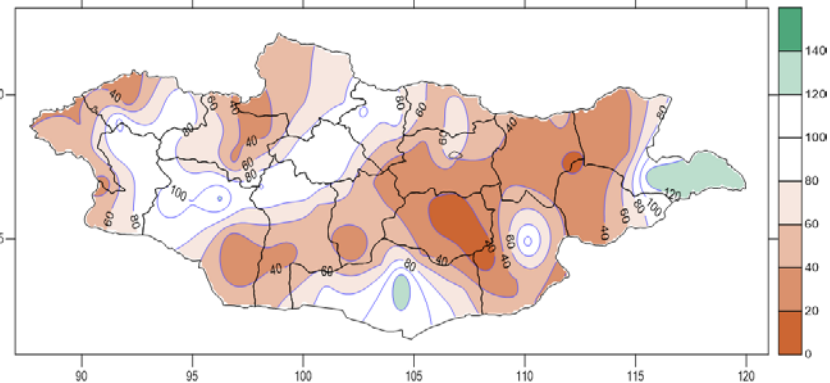
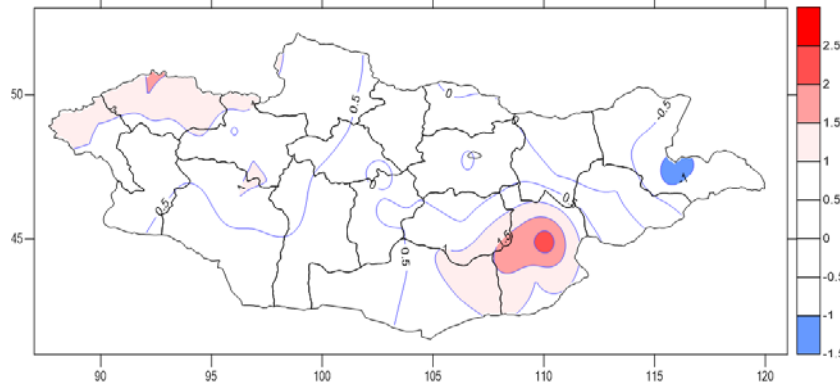
Jun



Jul

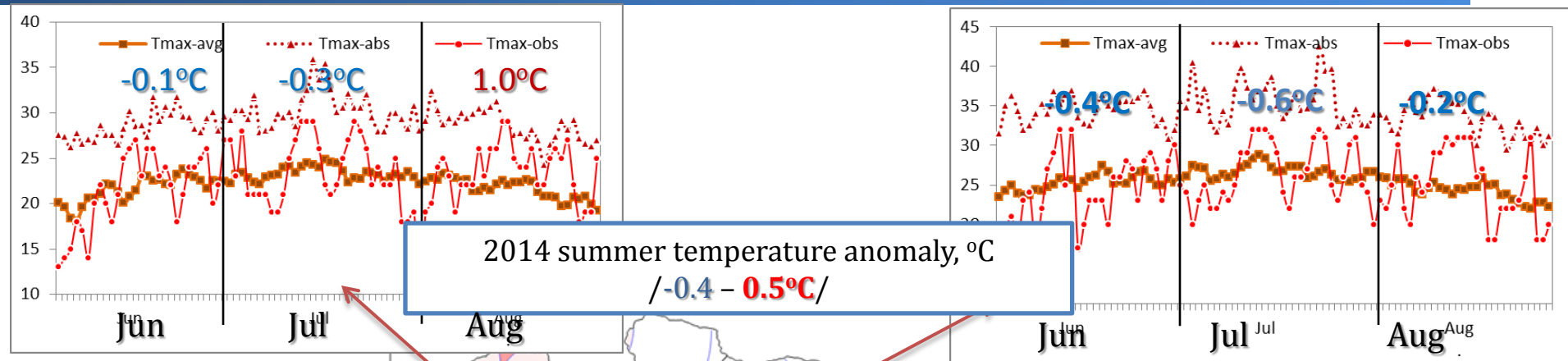


Aug

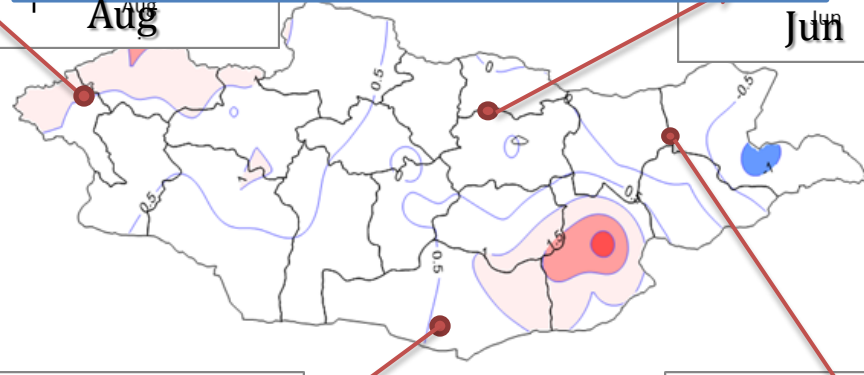




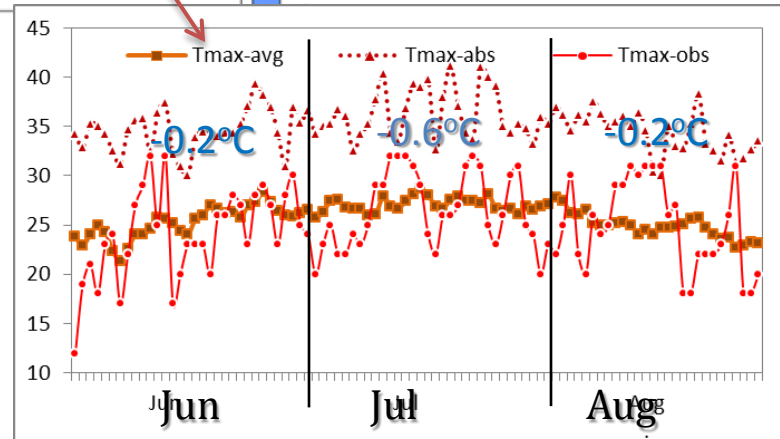
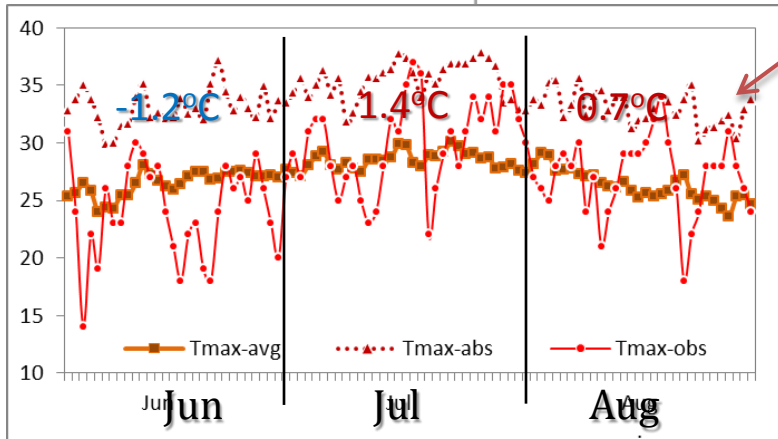
Temperature variation



$T=17.5^{\circ}\text{C}$

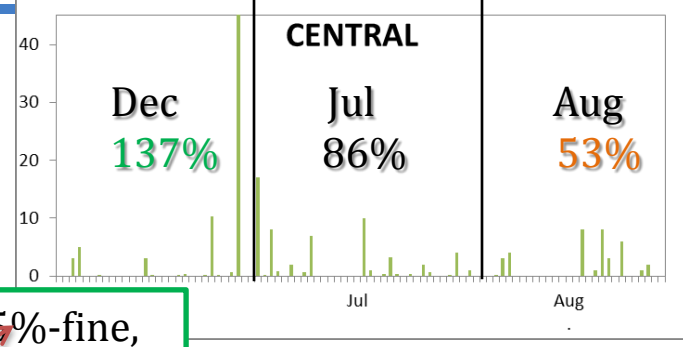
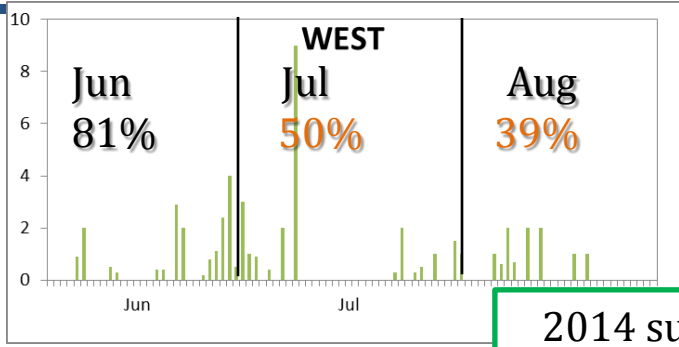


$\Delta T_{\text{avg}}=0.2^{\circ}\text{C}$





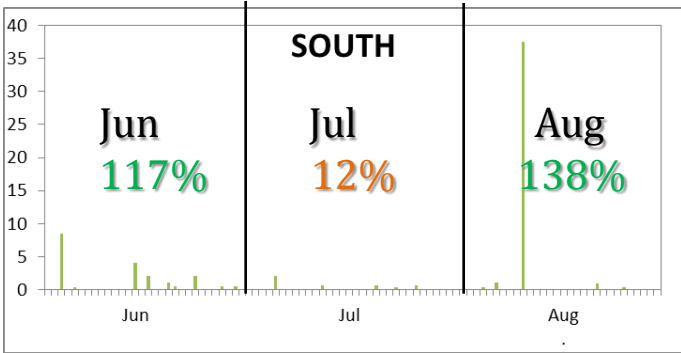
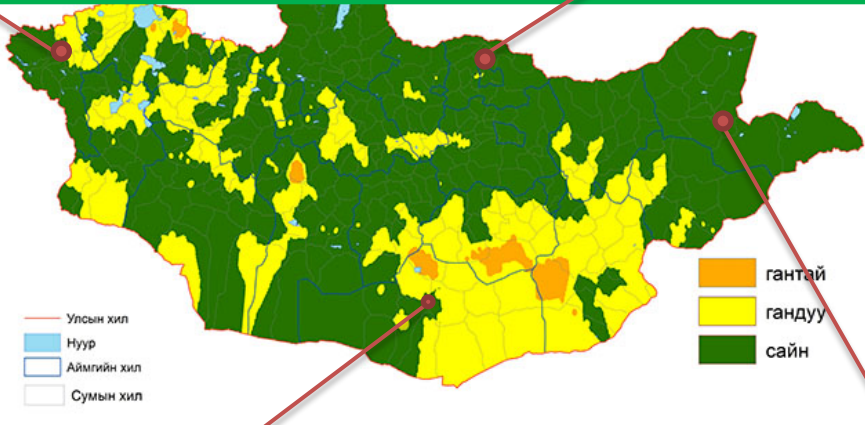
Precipitation variation



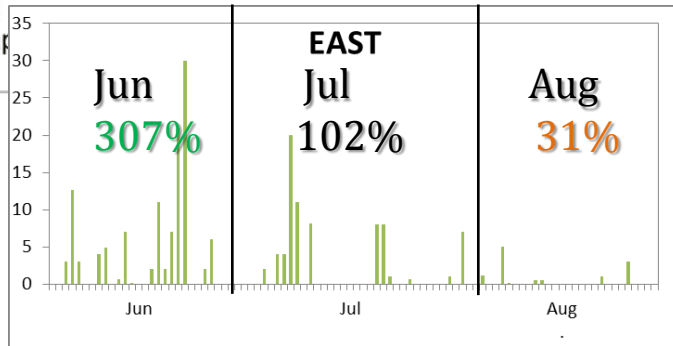
2014 summer pasture condition /55%-fine, 40%-droughty, 5 -drought/

$\Sigma R = 121.3\text{mm}$

$\Delta R_{\text{avg}} = 96.5\%$



3 дугаар зураг. Зуншилгын байдал, балл (2014 оны 8 дугаар сарын 10-ны байдлаар)





Notable event-squall line with Tornado

- Tornado (Nomgon)
 - 100m width
 - 10km long
 - More than 50m/c (F3 category)
 - Hail with more than 5cm diameter
- Damage
 - 2 mortalities
 - Many livestock
 - 1 billion tugru





Summary

- Temperature anomaly was near normal and ranged between -0.4 and 0.5°C .
- In general, near normal precipitation has observed almost all over the country. However, month to month variation was different. Precipitation in June was above normal and precipitation in Jul, Aug was below normal.
- As a result, 50 % pasture condition was fine over 55% of whole pasture land, droughty - 40% and drought - 5% .
- F3 category Tornado observed in central Mongolia and is first ever captured by video.



2014/2015 winter outlook



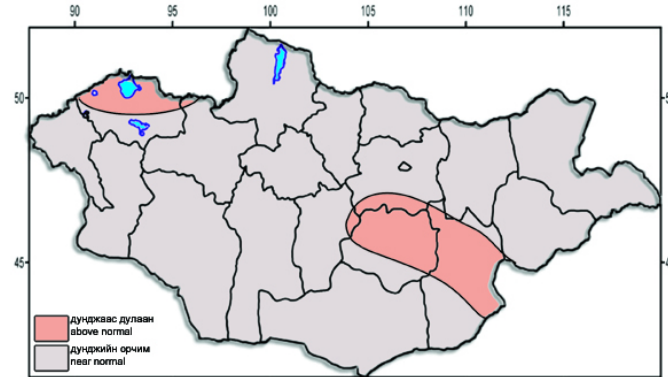
Methods

- Lagged –correlation method –lead time: 6 month
- “Extreme” statistical model - lead time: 6 month
- Statistical downscaling of TCC, GCM –lead time: 1 month
- Statistical downscaling of APCC, GCM - lead time: 1-3 month
- Forecast maps of other centers including TCC, KMA, IRI, ECMWF, NCEP, ...

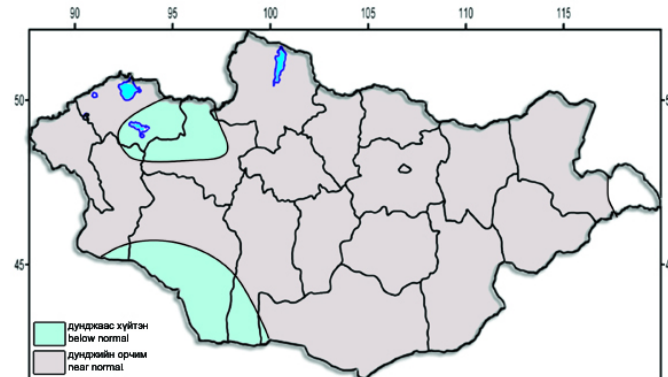


Temperature – WINTER 2014/2015

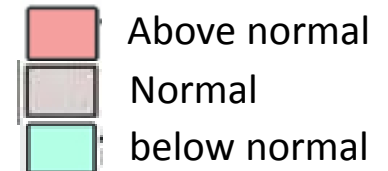
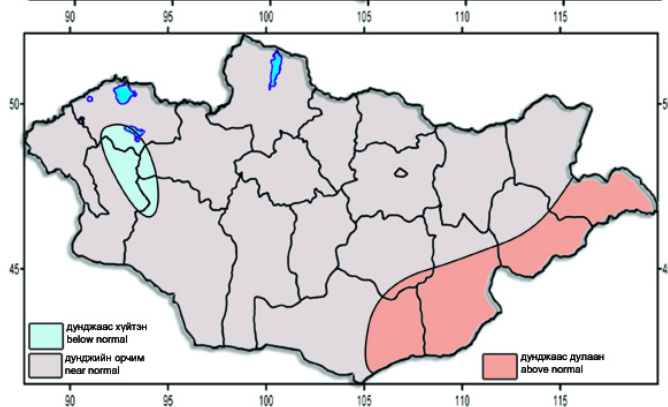
- December



- January



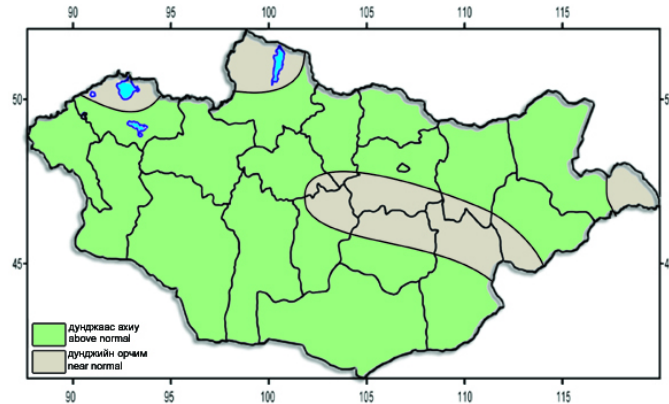
- February



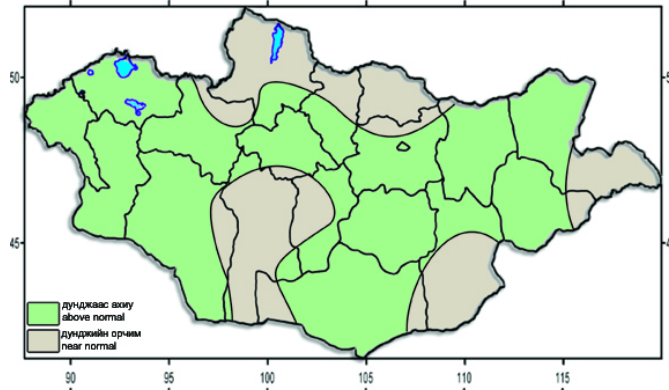


Precipitation –WINTER 2014/2015

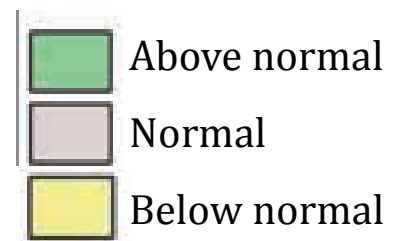
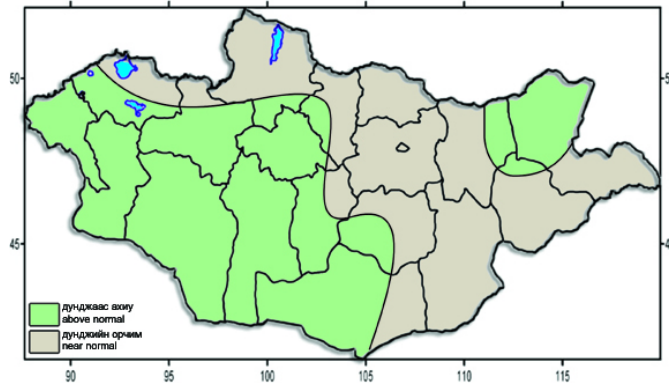
- December



- January



- February





Verification of last summer outlook

| Region | Month | Temperature Anomaly | | Precipitation ratio (%) | |
|--------|-------|---------------------|-----|-------------------------|-----|
| | | Fore | Obs | Fore | Obs |
| West | Jun | A | N | B/N/A | B/A |
| | Jul | A | A/N | N | B |
| | Aug | N/A | A/N | N | B/N |
| Center | Jun | A | N | N | N |
| | Jul | A | N | N | B/N |
| | Aug | N | N | N | N/B |
| East | Jun | N | N | N/A | A/N |
| | Jul | N | B/N | N/A | A/N |
| | Aug | N/A | N | N/B | B/A |
| Gobian | Jun | N/A | B | A/N/A | A/N |
| | Jul | A/N | N/A | N/A | N/B |
| | Aug | A/N | N/A | N/B | N/B |

- Last summer forecast verification T-63.2, R-57.4



Summary

- Temperature is expected to be mostly near normal during the winter.
- Precipitation – above normal throughout the country almost in all months.



THANK YOU FOR YOUR ATTENTION