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Summer climate feature and seasonal outlook for winter 2015-2016 in Mongolia

The Third Session of the East Asia winter Climate Outlook Forum 3-5 November 2015, Seoul, the Republic of Korea

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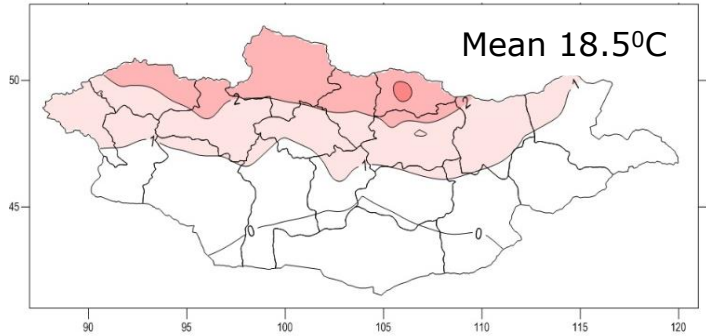
Outline

- Climate review in summer
 - Temperature and precipitation
 - Atmospheric circulation and notable event
- Seasonal outlook in winter 2015-2016
 - Approach to issue seasonal outlook
 - Outlook DJF

Temperature

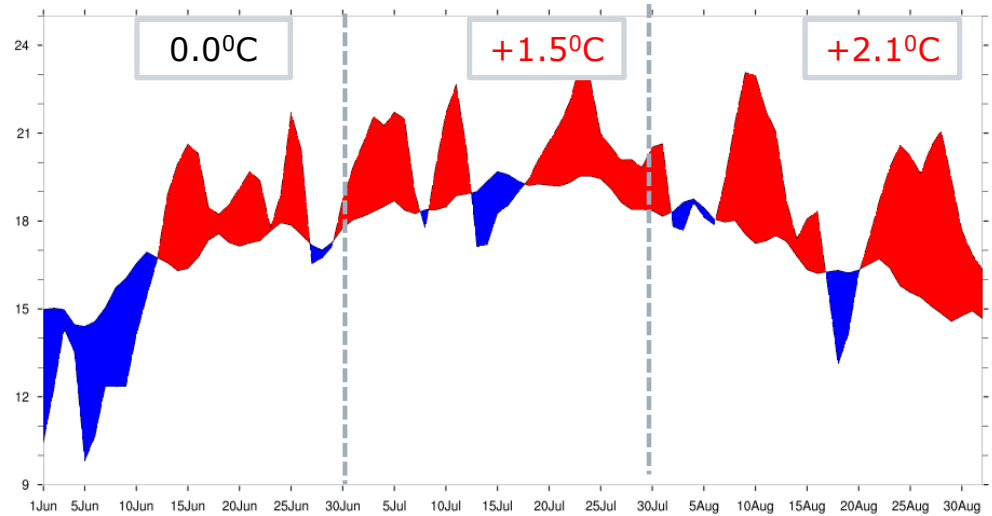
Anomaly **1.2°C**

Summer temperature anomaly, JJA 2015



- JJA temperature was above normal
- Spatial pattern corresponds to western, northwestern and central part of the country

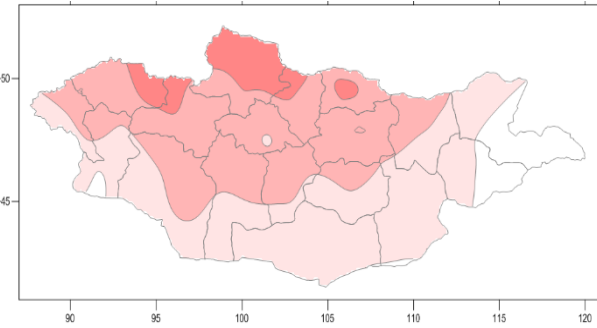
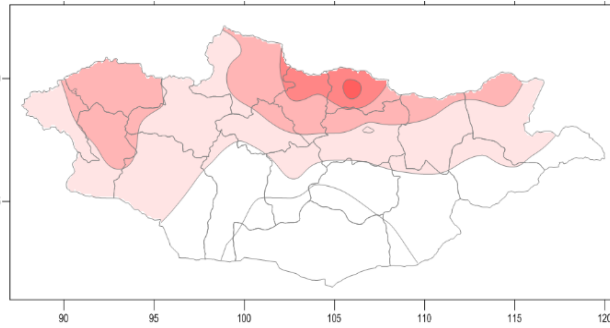
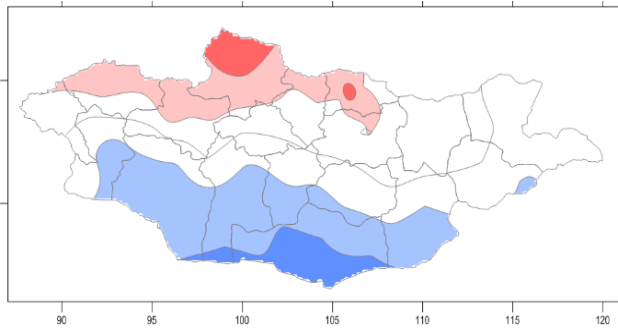
Daily mean temperature anomaly (°C)



June

July

August

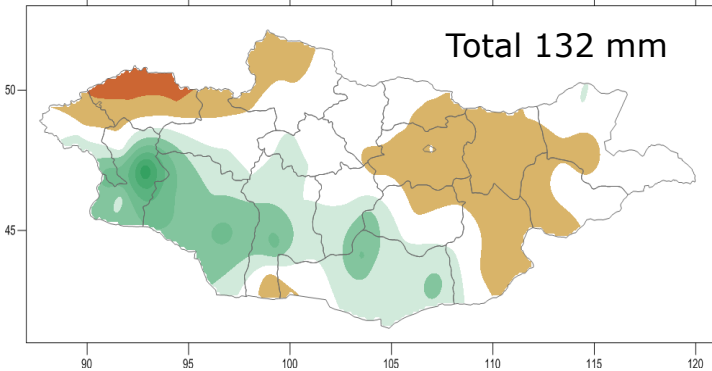


Precipitation

Precipitation -105.9%

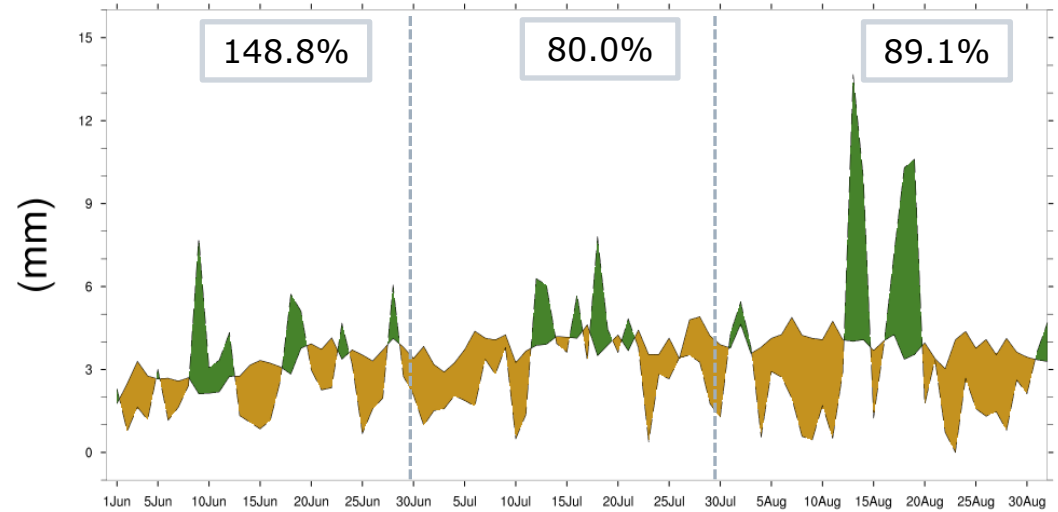
Summer precipitation anomaly, JJA 2015

Total 132 mm



- JJA precipitation was near normal.
- But spatial pattern shows above normal in southeastern and below normal in central part of the country

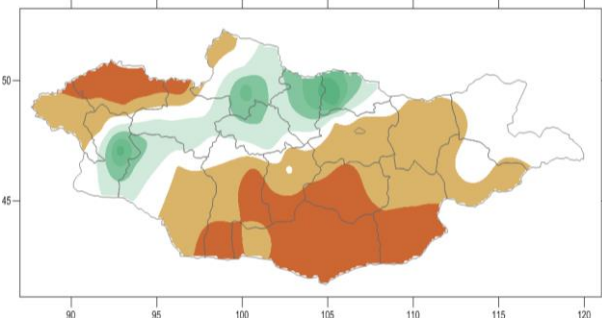
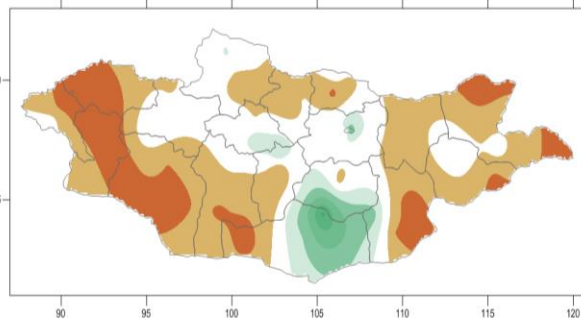
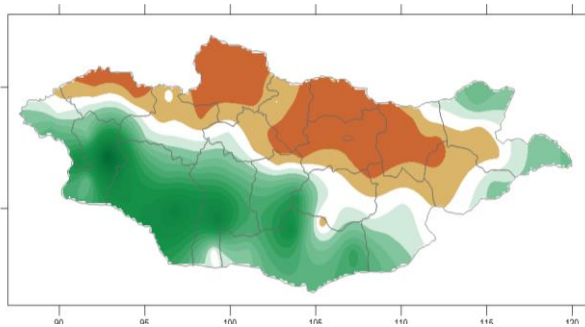
Daily mean precipitation anomaly, %



June ←

July ←

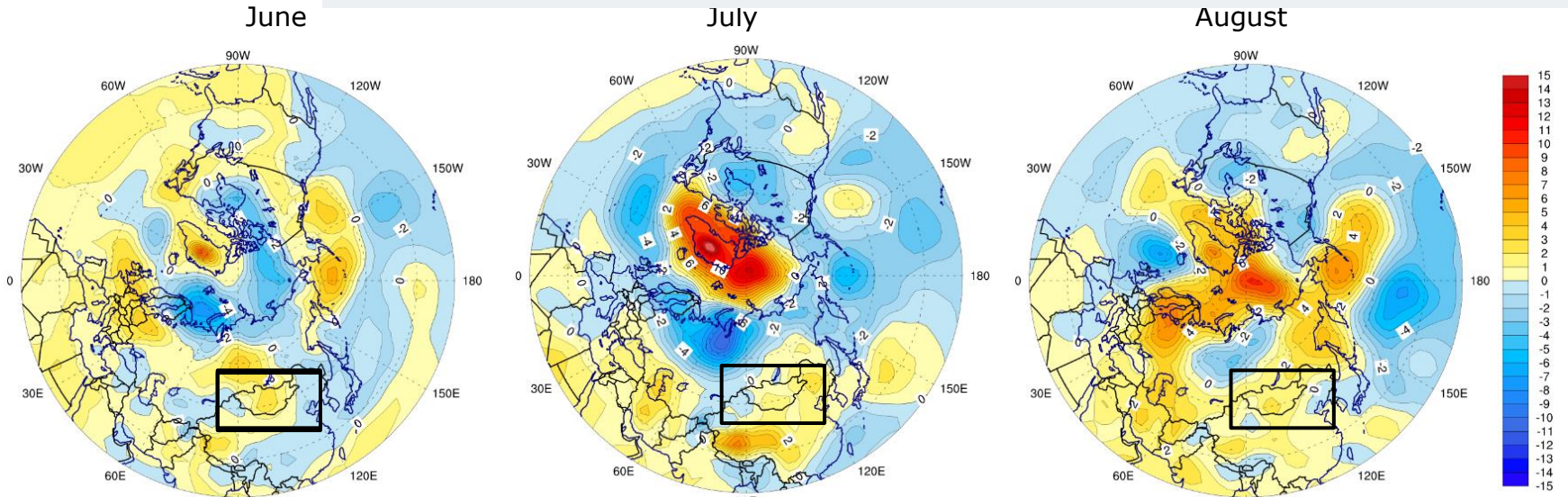
August



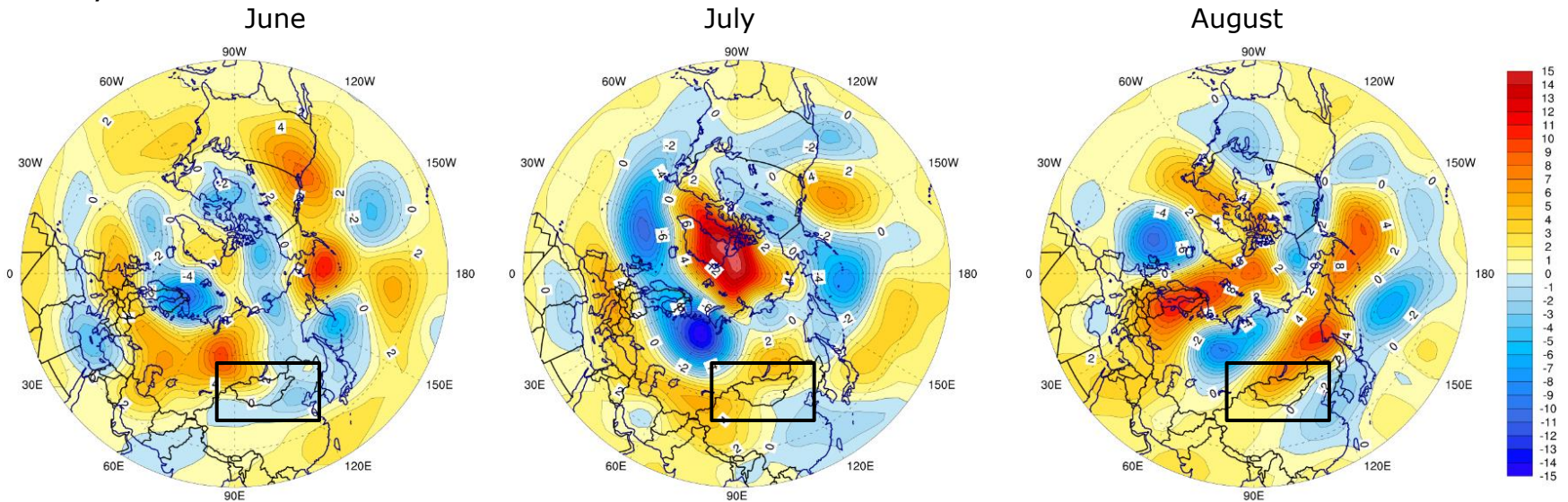
Atmospheric circulation and notable event

SLP, 2015

- Positive large anomaly persisted in JJA as dominantly in surface and upper level

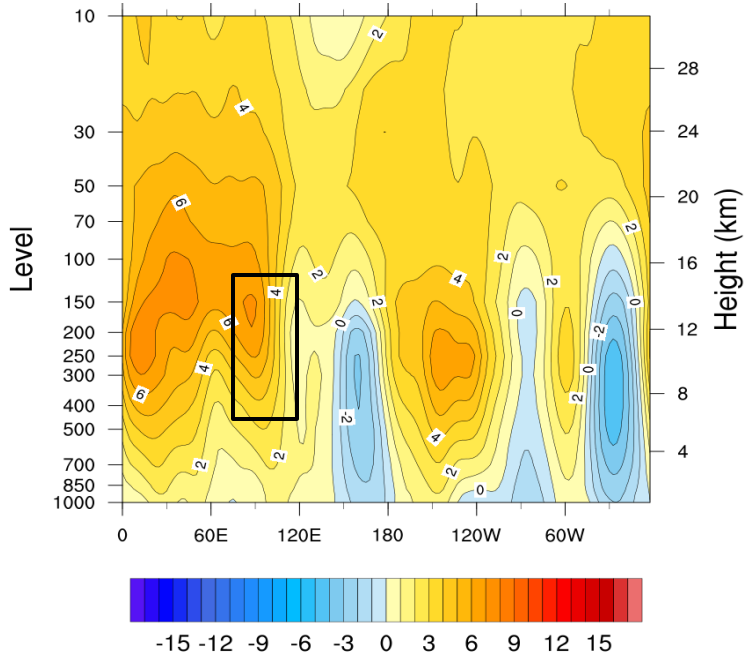


Z500, 2015



Atmospheric circulation and notable event

Anomaly of geopotential height in JJA
(41.0-52.0°)



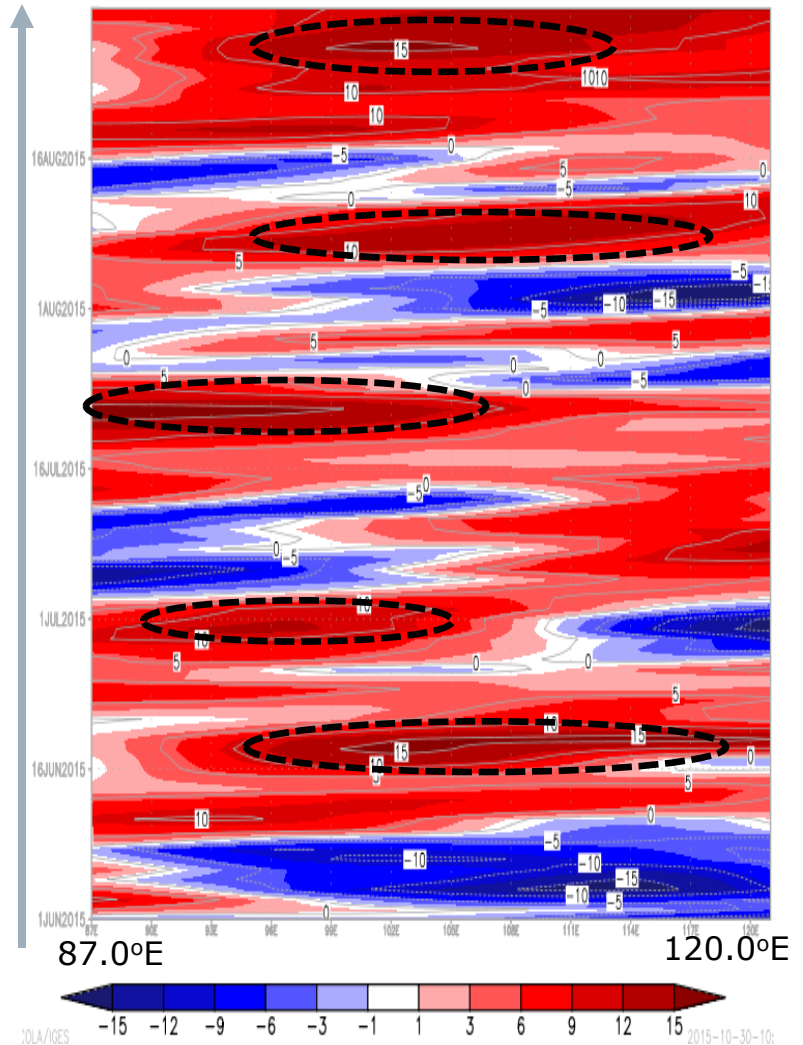
- Positive anomaly is dominated in low and upper troposphere
- Stationary warm anticyclone persisted for more than 5 days in the westerly wind belt
- Such blocking occurred 4-5 times during summer

August

July

June

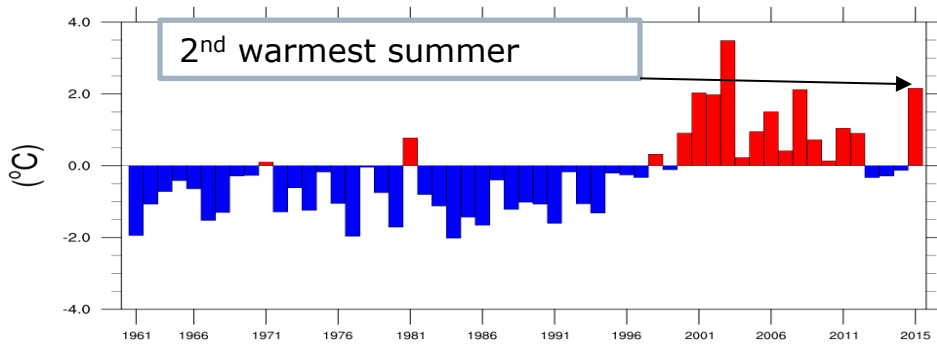
Time evolution of geopotential height anomaly, gpm



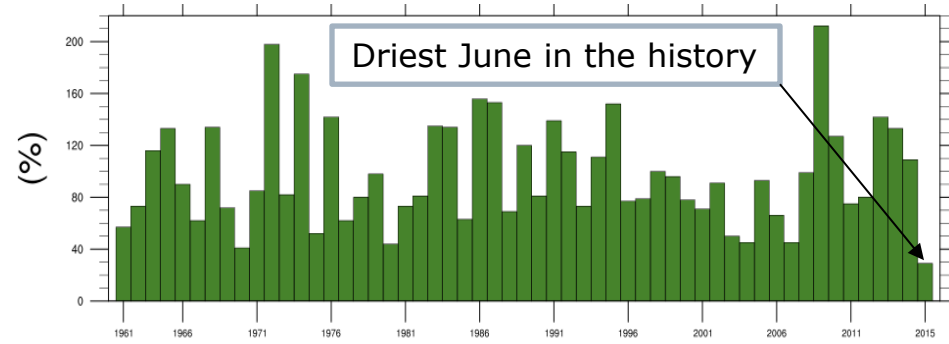
Notable event (Dry spell)

Long term trends 1961-20015

Temperature

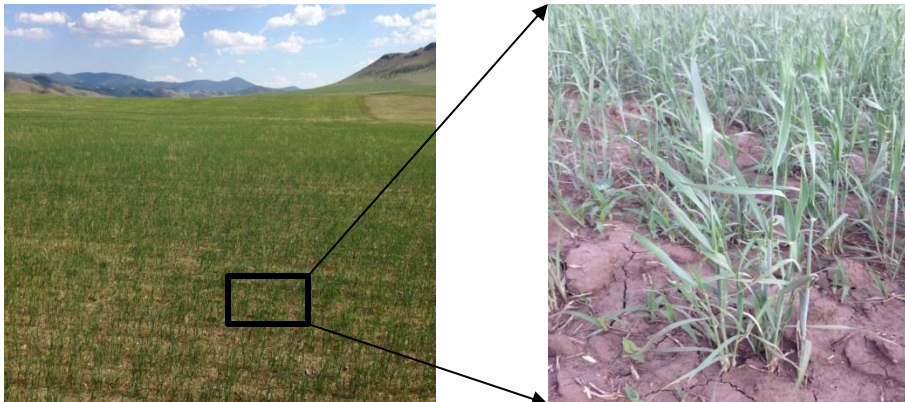


Precipitation

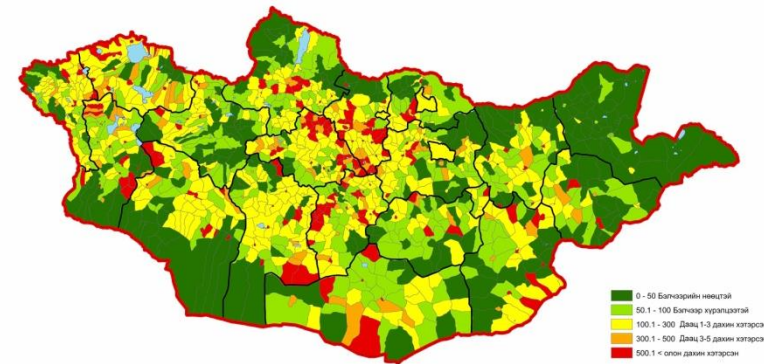


Economic loss and damage

Crop yield have reduced by nearly by 50%



Pasture carrying capacity exceeded



Summary

- In 2015 summer, mean temperature of Mongolia was 18.5°C, which was above normal (+1.2 °C)
- Summer precipitation was near normal 132mm.
- However, precipitation is below normal in central and eastern part of Mongolia due to stationary warm anticyclone

Seasonal outlook for winter 2015-2016

Statistic downscaling

- TCC GCM as predictor
- APEC MME as predictor

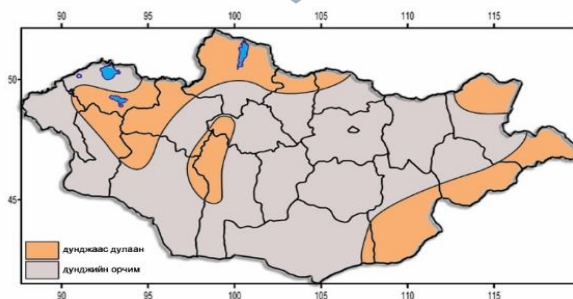
Forecast

NCEP, ECMWF, MetOffice, APCC,
BCC, TCC and IRI etc

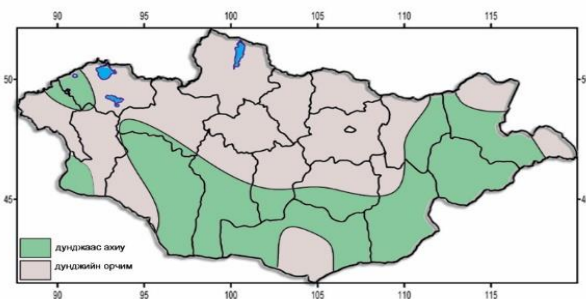
Forecast analysis

Local model

- Lagged correlation
- Extreme analogue



Monthly temperature

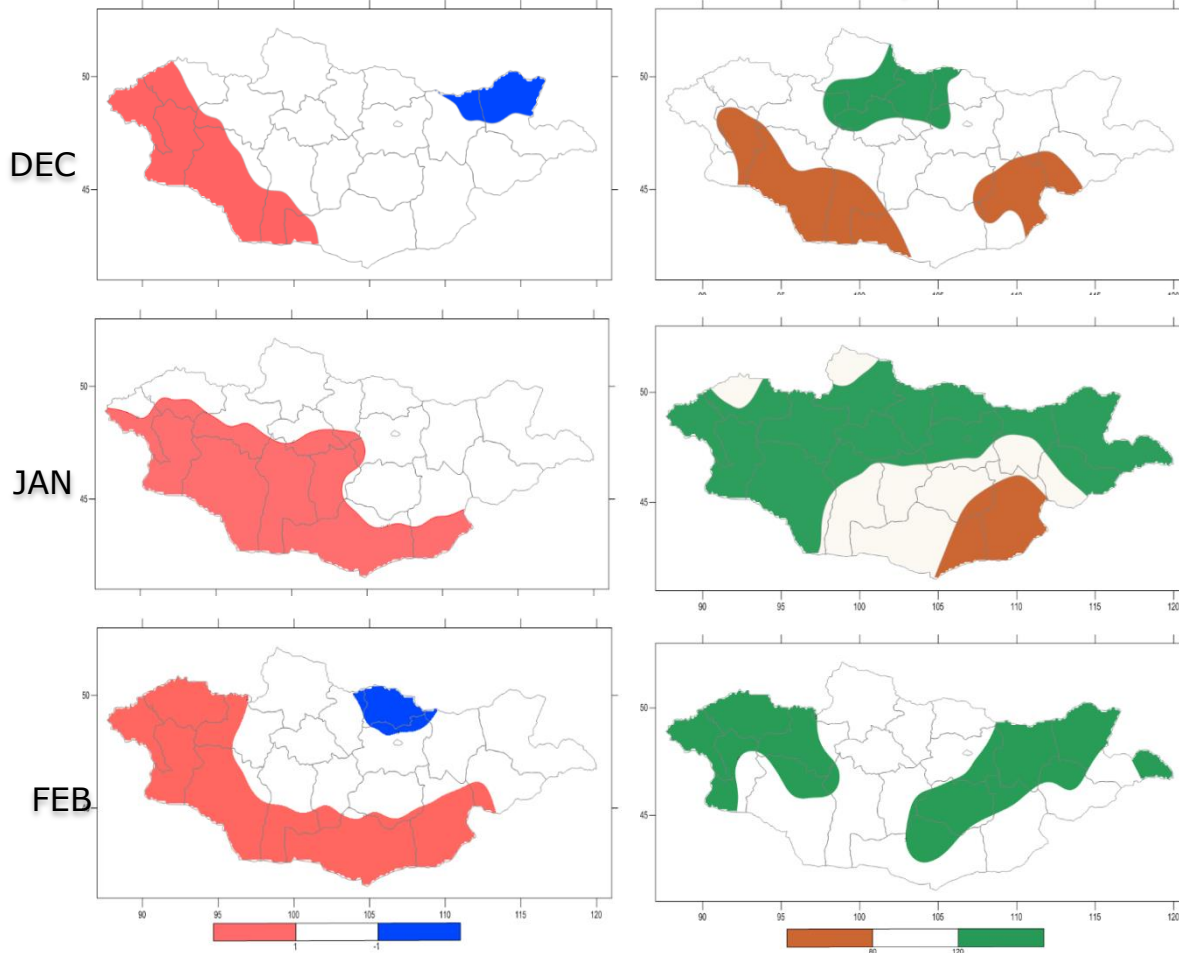


Monthly precipitation

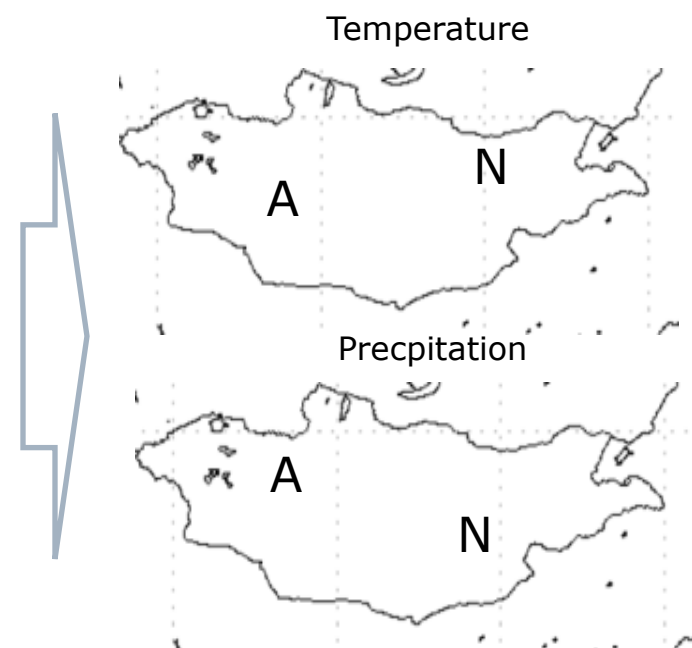
Seasonal outlook for winter 2015-2016

Temperature

Precipitation



DJF outlook



Summary

- Temperature expected to be **above normal** and **near normal**
- Precipitation will be **normal** and **above normal**

Thank you for your attention