

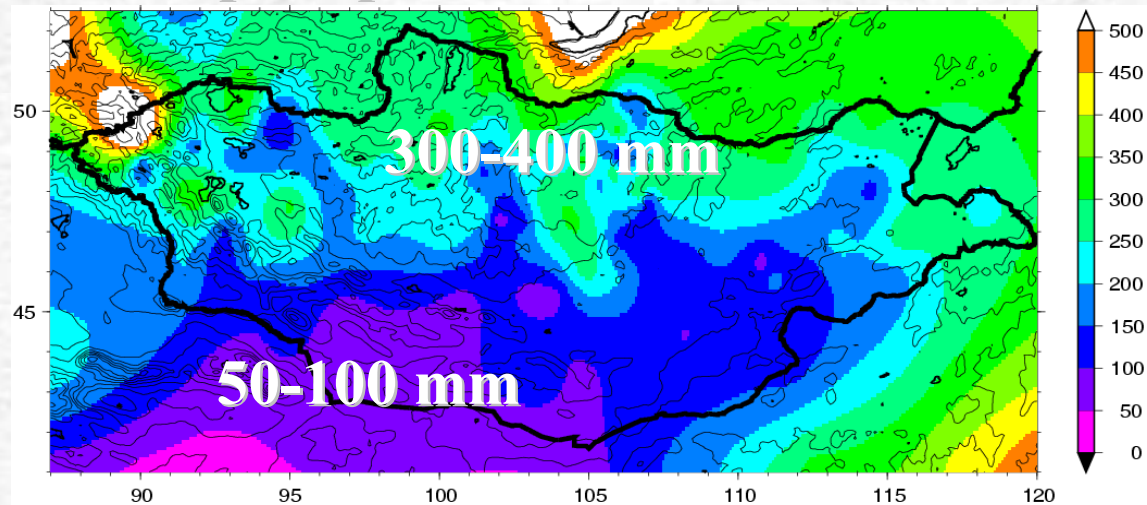
A plan of a New Research Program on Water Cycle in Mongolia Under the post-RAISE program

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Background:

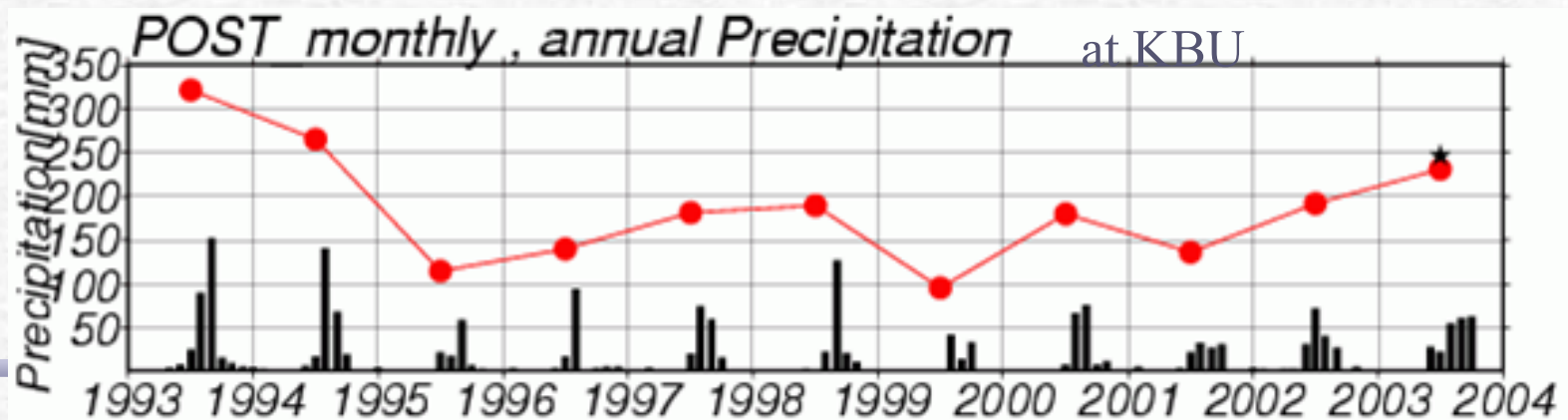
Large Precipitation Variability – time & space

Annual precipitation

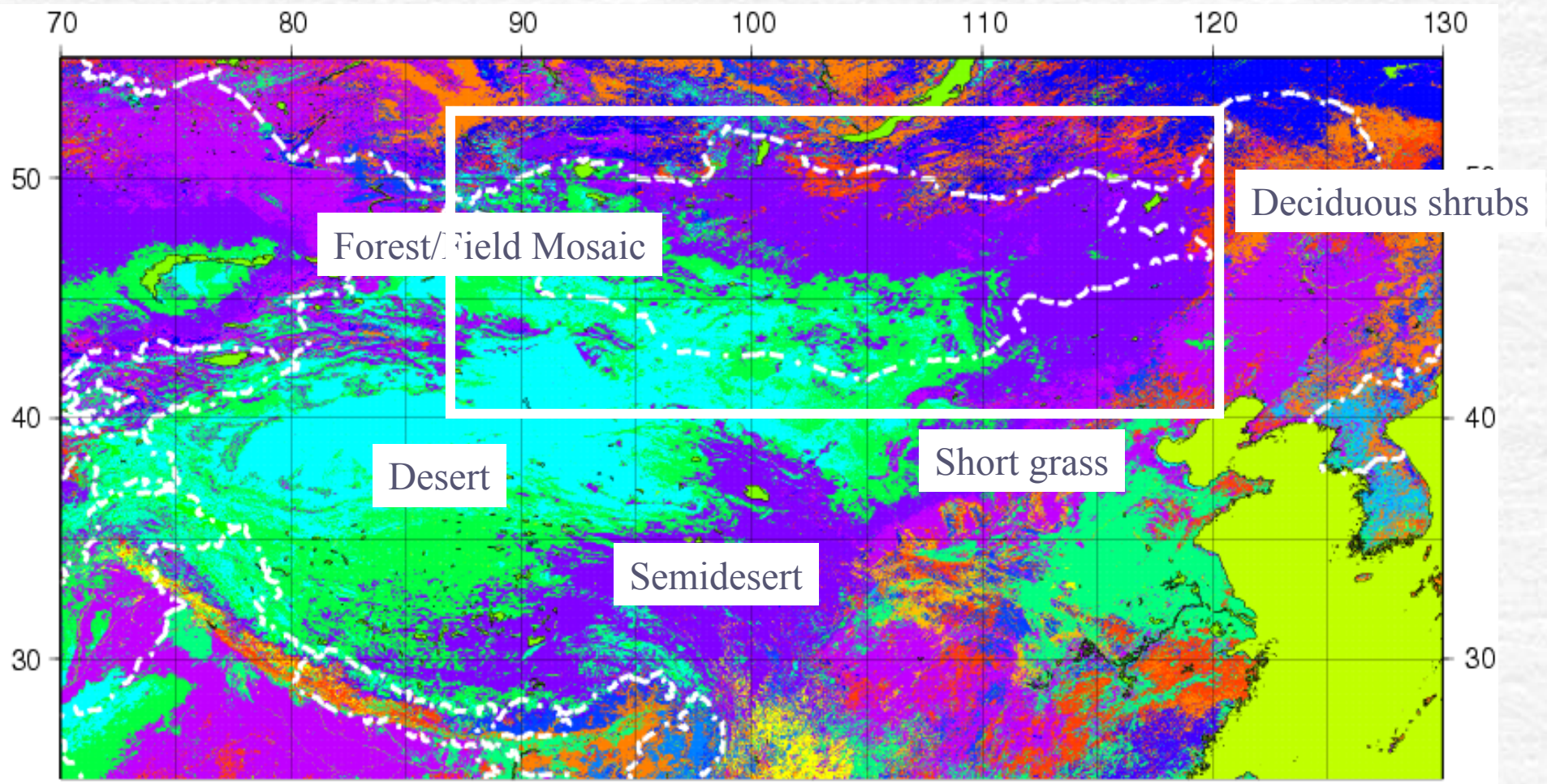


Large spatial variability

Large interannual variability



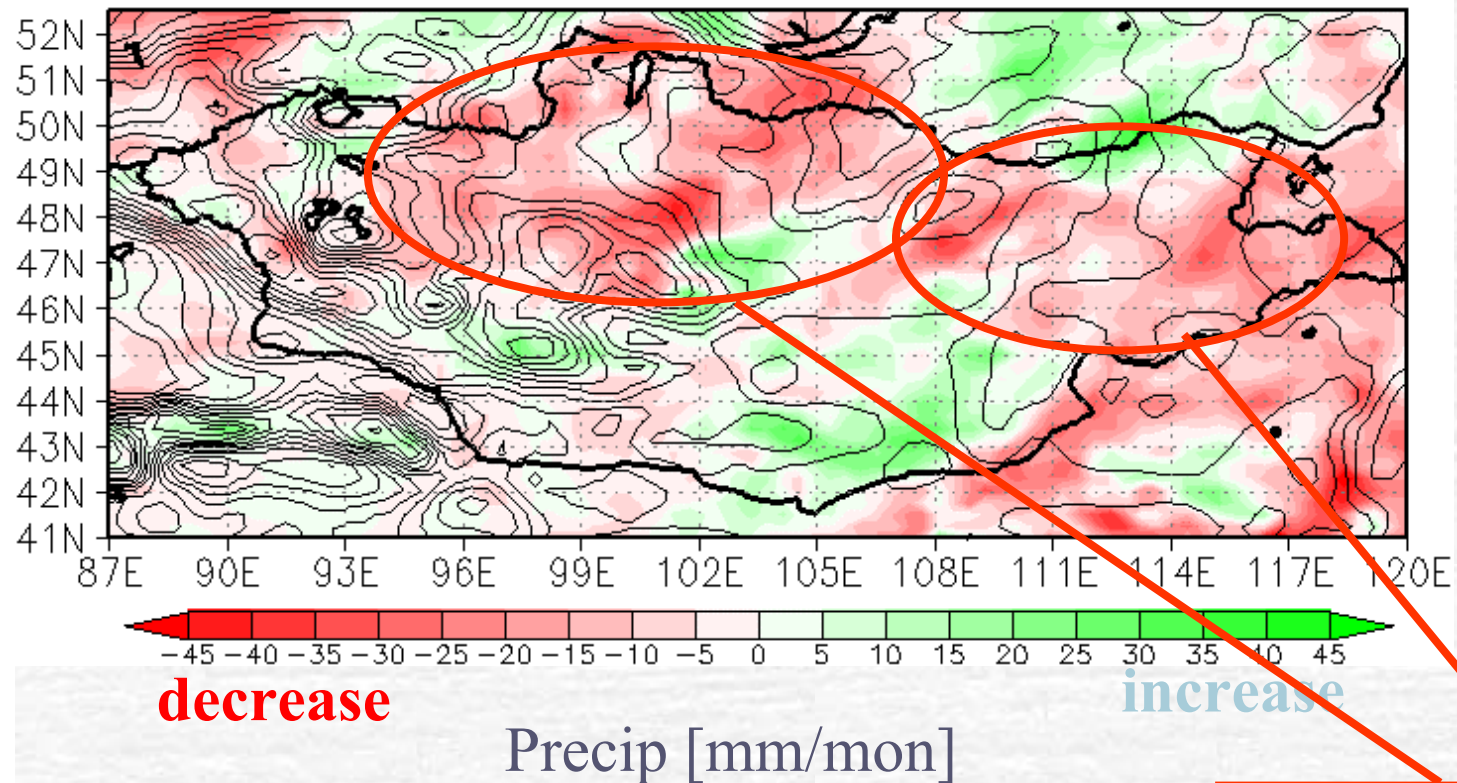
Background: Strong meridional transition of vegetation



“packed” eco-tone: vulnerability

Projected Future Precipitation

July



Method (2)

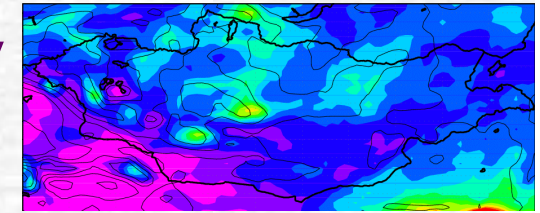
RCM.hindCTL

- RCM.hindWM
(2070s-1990s)

decreasing precipitation

Research Targets 1: Precipitation Variability

RCM hindcast (July)

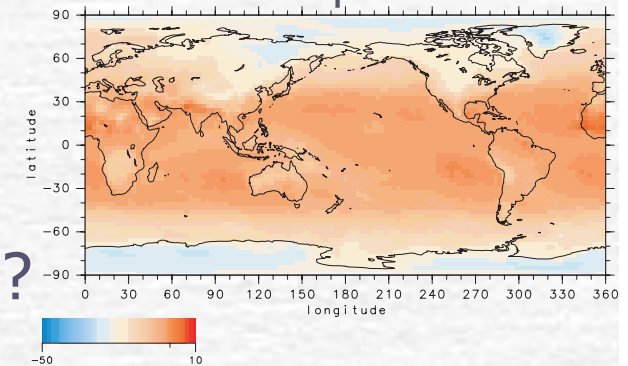


Precipitation variability

“Is it predictable?”

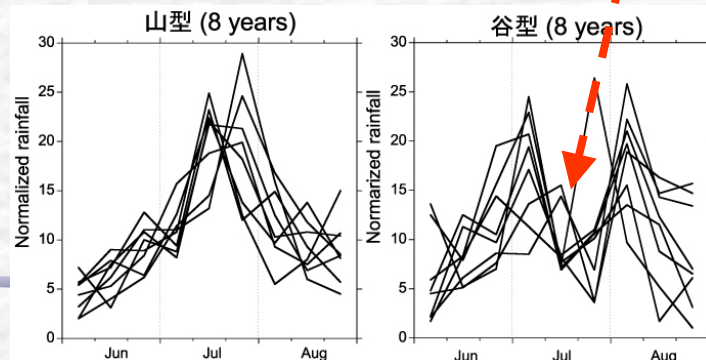
- At interannual & intra-annual scale
- Magnitude in future? Causes?
- Interrelation to the Asian monsoon?
- Water vapor from where?

stable Isotope research



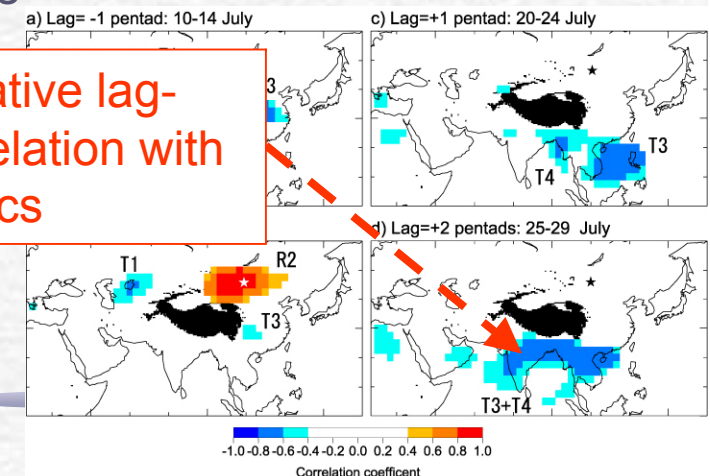
“break in rainy season

Intra-annual precipitation pattern



lag-correlation at z500

negative lag-correlation with tropics

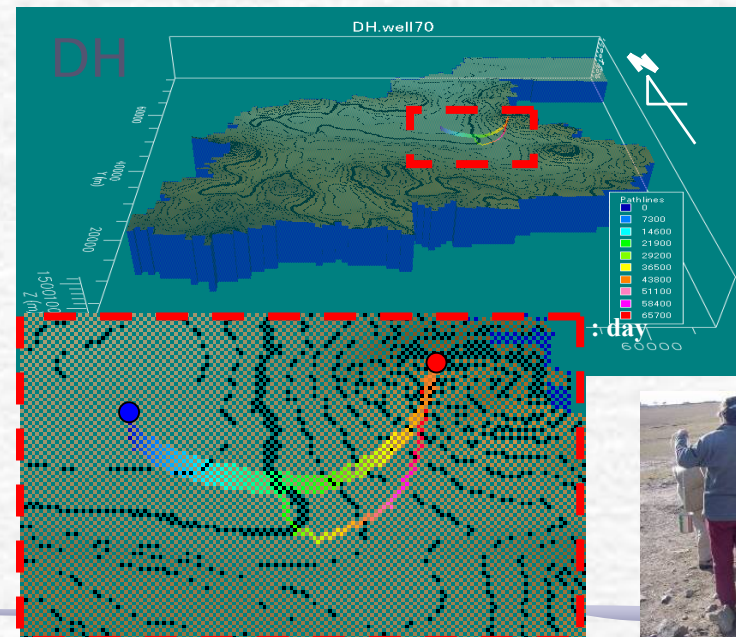
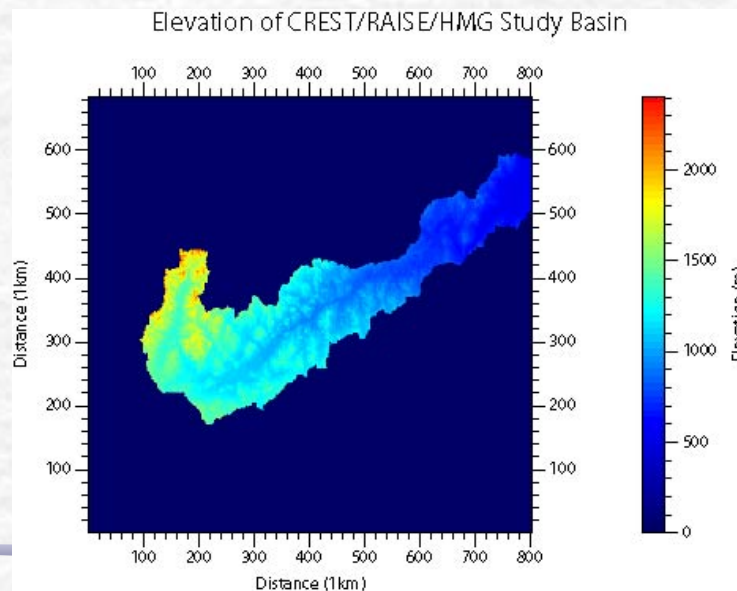


Research Targets 2: Groundwater and Water Resources

Impact of Precipitation Variability

“Is it Sustainable?”

- Groundwater monitoring, modeling
- Surface water monitoring, modeling

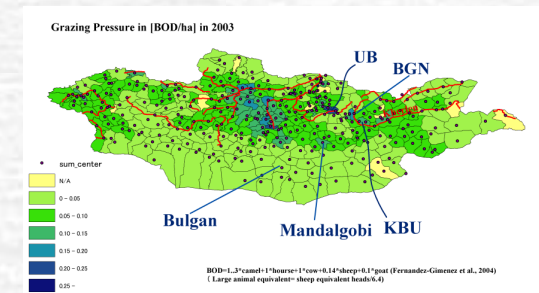


Research Targets 3: Vegetation

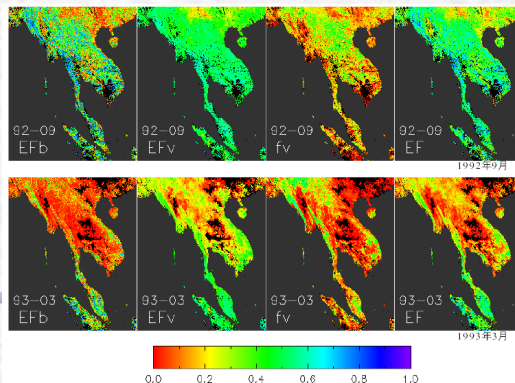
Impact of precipitation variability

“Is it vulnerable?”

- How large is it? : vegetation models.
- Impact of grazing? Desertification?
- Vegetation monitoring with satellite remote sensing
- Stochastic Ecohydrological modeling

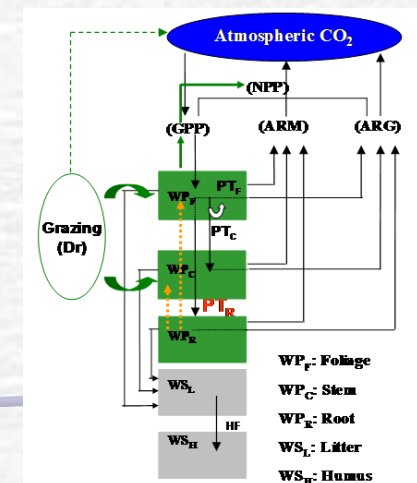


Grazing Pressure



Computed Evaporation
from AVHRR

Vegetation models/ land
surface models



And more to come

- Dust storm: one of the largest source of the dust storm (Kosa)
- etc.

Structures

GEWEX-GHP

MAHASRI

<post GAME project>

(Monsoon Asian Hydro-Atmosphere
Scientific Research and Prediction Initiative)

projects

programs

Regi
Com

Regio
Comp

Regi
Com

Regional
Components

post-RAISE program

This talk

Regional
Components
in
Northeastern
Asia

Plan is being planned

- Our ultimate goal
 - Constructing methodologies in Water Resources Assessment and Drought Warning System in semi-arid Asian countries.
- Anyone is welcomed