

REINVENTING A “CLICYCLE” IN DAURIA

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Climate adaptation is not a new theme for Dauria.

Mongolian Nomadic tribes were adapted to temporal and spatial change in availability of water and other resources. Climate cycle is a driver behind major ecosystem processes: animal migration, succession of natural communities, drying and filling of lakes, advance and retreat of forest etc. We assume that natural cycling along with notable differences between sub-regions and sub-basins is the key in sustaining biodiversity and productivity of Dauria ecosystems.

Current mode of development, associated with stationary settlements/production facilities and linear growth in economic output is inevitably leading to severe competition for water and other resources at the time of drought.

This was actually our starting point for addressing this issue in the region – Argun transfer, potentially reinforced by Kherlen transfer, thus involving all three countries in competition for scarce water.

Human induced “Climate change” may make cycles even more pronounced and affect duration of phases, but is likely to bring problems similar to those already experienced by society poorly adapted to periodic drought. Meanwhile drought is nowadays perceived as “climate change scarecrow” and very questionable “water engineering solutions” are proposed to “protect environment and society” from climate change.....

In our understanding climate adaptation in Dauria has several key aspects which MUST be dealt with in transboundary setting:

- A. Coordinated use of regions scarce water resources. Argun-Hailaer, Khalkh, Kherlen, Uldz, Onon, Imalka rivers– virtually all notable basins of the Amur Headwaters are transboundary. Greatest potential threat – competition for water made the goal of national policies and demolishing transboundary wetlands to store waters on national territories. And this is in the making.
- B. Adaptation through the use of best water-saving technologies and appropriate resource-use practices. Here countries have different comparative advantages and have a lot to share. Mining seems to be one of most thirsty among growing economy sectors in all 3 countries.

- C. Development of nature reserve network that provides for migration and breeding of species in all phases of region-wide drought cycle and preserves key hydrological features and all important refugia. Understanding interplay of permafrost, fire regime, drought cycles, agriculture, infrastructure development in changing landscapes, with special attention to forest-steppe transition zone and freshwater ecosystems.
- D. Overarching communication strategy for Dauria that makes climate cycling and limitations/advantages it brings better understood by local people and considered by governments in key planning/decision-making. This is communication for “adaptation and enhancing resilience”.

Of course, many specific policy/economy/cultural issues will be tackled separately at national level, but without some common framework it would be difficult to protect biodiversity riches of Dauria in times of accelerated development and “climate change”.

Some Questions to be addressed in FFS and specially CC studies:

Dynamics/cycles (solid examples):

- Basic long-term climate data and hydrology data on cycles
- Animal and human migrations influenced by climate fluctuation ;
- cyclical change in communities and species composition;
- notable difference in hydrological cycles between subbasins and various wetland types;
- changes in permafrost and forest cover at steppe/forest fringe now and long ago;
- good adaptation measures for various aspects of “usual” climate cycle.

Dynamics of activities and impacts:

- how to measure availability of resource in various phases of the “clicycle”?
- different consequences of resource use in different phases

- various degree of competition between users in phases (gazelle vs. herders, waterbirds vs. fishermen, etc)
- Changing spatial concentration of activities and resulting change in impact and harassment(disturbance)
- Existing and possible adaptation/ mitigation to all collisions listed above;
- Measures for impact in cycling system
- Lessons from nomadic and other indigenous lifestyles/culture and reasons for collapse of these lifestyles (question needs better framing);

Add-on effects of “climate change” – status of knowledge.

- Expected changes in cycling – greater amplitude, longer drought phase (??? Or vice-versa),
- Expected and observed increase in run-off
- Expected increase in mean temperature
- Seasonality change
- Change in species and communities, ecosystem response
- Interplay with pollution, argi-impacts, whatever
- Permafrost area changes? Is it the first time?

Socio-economic reaction to climate change.

-What do people know and think/expect, for example:

- Storing water for bad times
- Expansion of new technologies to northern regions (rice-growing)
- Irrigation development
- Role of fire and human impacts in advancing cause of climate change
- Restoring nomadic patterns? In new context?
- “Climate change” influences through human activities – how changing human activities/policies further impact ecosystems and environmental conditions

WHAT IS ADAPTATION??? Proper/adequate socio-economic/management reaction to climate fluctuations???

- Adaptations of the nomadic past : what could be useful in future, how to “reinvent” nomadic culture?
- Contemporary adaptations
- Lessons from other regions—value of ready solutions?
- List of things NOT TO BE DONE – examples of bad policies/actions exacerbating the problem

CASE STUDIES (well developed stories on complex situations with adaptation and resilience as central theme)

1)Municipal water crisis in Aginskoye (former Aginsky Buriat Autonomy, Russia). Previously nomadic people develop their capital permanent settlement, but local river dries out (as it should happen once in a while).

2)Land-use at Torey Lakes depression (Russia-Mongolia) – known history of regular drought cycle.

3) Ecosystem and land-use dynamics in Argun-Erguna-Hailar valley (China-Russia) --

4) Dalai lake – Khalkh and Kherlen River Case study (China- Mongolia)—

5) Urban/ industrial water crisis in Manzhouli City (and Zabaikalsk) predetermined by location and development mode of this major border-crossing. Link between transboundary economic development policies and environmental security policies.