

## **The emerging challenges for Mongolia associated with tripled stresses due to the global warming, globalization and possible “resource curse”.**

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A certain detailed discussion in this paper addressed the livestock sector as the most essential way to utilize natural resources in Mongolia, including the issue of “tragedy of commons” and dilemmas facing the traditional pastoralism in the context of global warming and globalization. Other emerging challenges for this country, covered in this paper, are the development paradigms, particularly, ways of national development based on natural resource exploitation or human capacity exploration, including a critical issue of the “resource curse”.

The present climate trends consistent with the GCM results have shown that the traditional way of livestock husbandry or pastoralism in Mongolia can be threatened by a multitude of climate factors. Cold waves with heavy snow storms, early establishment of long lasting and fixed snow coverage on the territory in winter, and other similar extreme events, occurred in the recent years, are attributed presumably to the global warming. These factors, in combination with the increased soil moisture deficit due to possible decrease in the summer rainfalls and intensified evapotranspiration (which might lead to degradation of vegetation cover) can prevail over other factors like heat stress pressure on animals, as it was singled out and emphasized in a number of studies. The desertification phenomenon might be attributed more to the land degradation (caused by intensified land use, wind and water erosion of soil and others) rather than the increase of general aridity of local climate due to the decreased total amount of precipitation. Current glacier melting rate also needs to be considered in a complex with the expected shift of precipitation toward the cold season. Nevertheless, the increased incidents of “white” and “iron” dzud<sup>1</sup> situations in winter seasons, following summer droughts would have serious negative impacts on the livestock as an economy sector and on the livelihood of the local communities with limited options for income sources for life.

Traditional way of life in Mongolia associated with pastoralism is considered as the sound and more feasible option in response to climate change, thanks to the high adaptive capacities of the local communities to

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<sup>1</sup>The word “dzud” is a Mongolian term used to describe the natural hazards or extreme weather events like heavy snow fall with longstanding snow coverage (white dzud), lack of snow which leads to diminishing of sources of water for animals (black dzud), continued cold wave or stagnation of air mass with low temperature (freezing dzud), covering of pasture field with snow by ice layer due to thawing of its surface (hoof or iron dzud). The term “dzud” is used when these above mentioned events lead to damage of property and significant loss of livestock, severely deteriorating livelihoods of the local communities, becoming disasters from natural hazards.

the rapidly changing living environment. On the other hand, concerns are raised in relation with the globalization impacts from the possible overturned effects of high tolerance of “nomads” to non native, but more disturbing and life changing “cultural” elements. Globalization induced changes in society need to be harmonized with natural capital and the traditional cultural values to help avoid the possible “shocks”, which in combination with climate change attributed stresses might trigger negative “domino effect” consequences on local ecosystems and correspondingly increasing vulnerability in a society.

The society in Mongolia during its long history, thanks to pastoralism, has been able to overcome and survive a high amplitude of social turbulence, economy turmoil and climate variability, and maintain a lifestyle with guaranteed delivery of Basic Human Needs (BHN). On the other hand, the legacy of the true traditional knowledge on livestock management in Mongolia was interrupted to some degree during the peak of socialist modernization, where persistent attempts were made to introduce the new high-outcome “industrial methods” in agriculture and the “civilized” or urbanized style of livelihood in rural areas.

Decollectivization in agriculture sector and privatization of livestock, since the start of transition to the market economy in Mongolia, has promoted reintroduction of traditional livestock management with a more efficient use of pastures and accordingly a decreased effect of overgrazing. However, the current Mongolian livestock is no longer a subsistence form of livestock breeding and it now has more pronounced features of the cash economy. Despite the above mentioned society induced disturbances the essence of the traditional livestock breeding in Mongolia is not obliterated yet thanks to its organic interlinkage with land features that created this unique form of life supporting system. It can be said that, the so-called “tragedy of commons” has not revealed itself within the traditional subsistence livestock husbandry in Mongolia in the past, thanks to customary regulations within the demands of BHN. On the other hand, the new features attributive to the modern market economy, based on competition for profit, might not be properly managed within the traditional scheme only. These negative messages mixed with fears of the increased adverse impact of natural hazards due to global climate change had certain influence on public attitude, including some politicians who argue that pastoralism has no future in Mongolia and it needs to transition to adequate form of settled farming. At the same time certain counter arguments can be put forward in favour of traditional livestock system. The pastoralism has high enough returns in terms of economic efficiency mobilizing in maximum the potential of ecosystem services of natural systems without interrupting their core functions. It can make a priceless contribution to natural heritage by preserving the gene pool of animals with high tolerance to harsh climate

conditions and by preserving a portion of grasslands where grazing exercise is still controlled by natural order.

It is a fact that Mongolia has been struggling to find a way toward a more accelerated development in its path of history as a nation during the last several decades. Current development is indicating that Mongolia, after all, may not be able to avoid the failures experienced by many other so-called “resource rich” developing countries who tend to “enjoy” the easy way to development relying on their natural wealth rather than their human capacity. A major concern is related to the cultivation of attitudes among population to live off an unearned income, such as “Grant of Motherland” or “Share of Treasure” etc., which are the very popular election promises made by the politicians regarding the possible future dividends from major mining explorations. Mongolia has more than enough renewable and non exhaustible natural resources (land space with necessary attributes, natural beauty, solar and wind energy sources and many others) to support human life at the modern level of demand if only it can mobilize its highly capable human resources. The available and profitable mineral resources can be explored for the infrastructure development and additional capacity building in the society. Only in that way Mongolia can avoid “resource curse” misfortune and determine its proper way toward to the sustainable path of development.