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

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Structure of the Presentation

- **Introductory remarks.**
- **The key points that should be highlighted:**
 - **on climate issues,**
 - **on globalization impact,**
 - **on resource curse misfortune.**
- **Concluding remarks.**

Principal message from the climate change studies as basis for policy making:

- Present global warming in the long run would lead to the shift of climate zones with more dominance of arid and semi-arid areas in Mongolia.
- Vegetation zones will move to the north and semi desert and steppe zones will expand.
- Aboveground biomass will be diminished and pasture quality will be deteriorated.

GCM projections for the 21st century (AIACC, MARCC) :

- Dry and hot summers, milder but more snowy winters.
- Evapotranspiration is much higher than the projected slight increase in precipitation.
- The severity of extremes like drought might be doubled by 2080.

Projected impact on livestock :

- The area unfavorable for animal grazing would increase from the current 40 % to about **70 % by 2050**, and 80 % by 2080.
- Animal mortality estimated to reach about 12 % by 2020, **18-20 % by 2050** and 40-60 % by 2080
- **Decrease in animal productivity** (based on projected decrease of the ewe weight of animals due to shortened grazing time because of heat stresses)

Predicted future for pastoralism in Mongolia:

The increased extremes resulting from climate change serve a significant barrier to livestock sector development and this impediment would grow significantly over the next 80 years.

NO FUTURE FOR PASTORALISM IN MONGOLIA ?

This appeared to be a strong message for policy makers, who argued that:

If there is no future for the pasture based livestock husbandry, it needs to be transformed to a settled farming system.

There is a need to seek out an alternative way of life (for at least half of residents of Mongolia).

My question to audience:

Do you have any ideas on that?

Perception of the general public, including those who are directly faced with the challenge is a little bit different than of the policymakers.

Their attitude is that the traditional way of life in Mongolia associated with pastoralism could be the more **sound** and more **feasible** option in response to climate change, thanks to the high adaptive capacity of communities in Mongolia to the rapid changing living environment.

Again my question to the audience:

Do you agree with that?

The history lesson

The societies in Mongolia during the country's long history could overcome and survive high amplitude of social turbulence, economy turmoil and climate variability, thanks to their lifestyle based on pastoralism. Moreover it enabled to maintain a life sustaining system with a guaranteed provision of the Basic Human Needs (BHN), without stepping over thresholds up and down in life line.

Modern interpretation

Unfortunately, not every social system, even the most sophisticated in the modern interpretation, has inherited the above mentioned performances imperative to be called sustainable.

The arguments in favour of the traditional livestock system:

1) Pasture based livestock husbandry or pastoralism was the only way to sustain the net level of production for the BHNs in arid areas where vegetation cover had been patched and grass yield had been fluctuating in spatial and temporal scale, depending on various, mostly, unpredictable direct and indirect climate factors and changeable weather events.

- 2) It has served without failure for a long time as the principal component of the national economy;
- 3) It was life sustaining basis for the entire population of Mongolia for thousands of years;
- 4) It 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;

- 5) It will serve a great contribution to the cultural heritage of mankind being the last instance of classical nomadic civilization;
- 6) It can make priceless contribution to the 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 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, mostly thanks to the customary regulations within the demands of the BHN.

But:

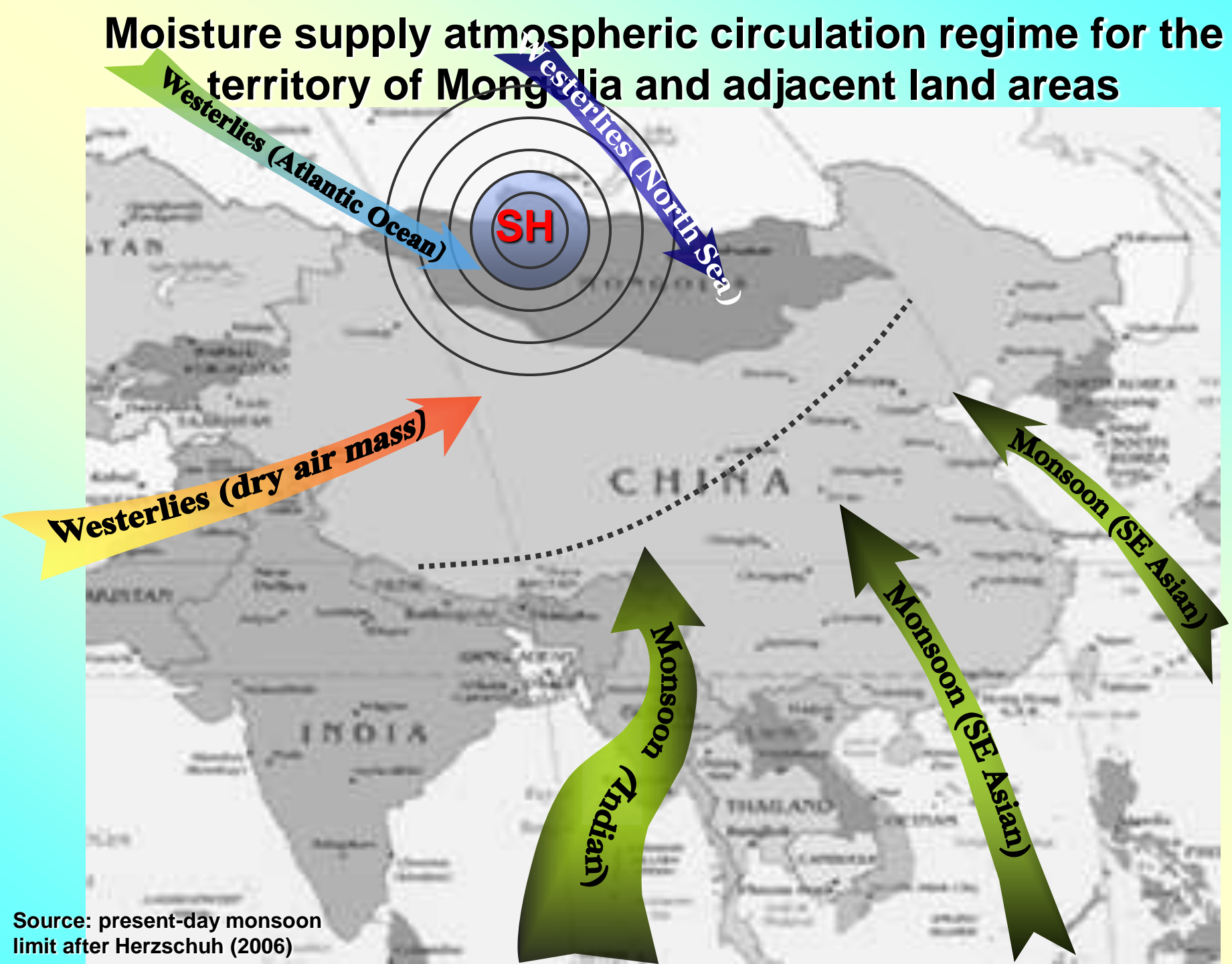
- The new features of the livestock in Mongolia, attributive to modern market economy, based on competition for a profit, might not be properly managed within the traditional scheme alone.

Another important issue is related to the **scientific conclusion** itself. Scientists could make reservation on possible options of the study outcome:

On global outcomes because of the existing **uncertainties with regard to the GCMs**.

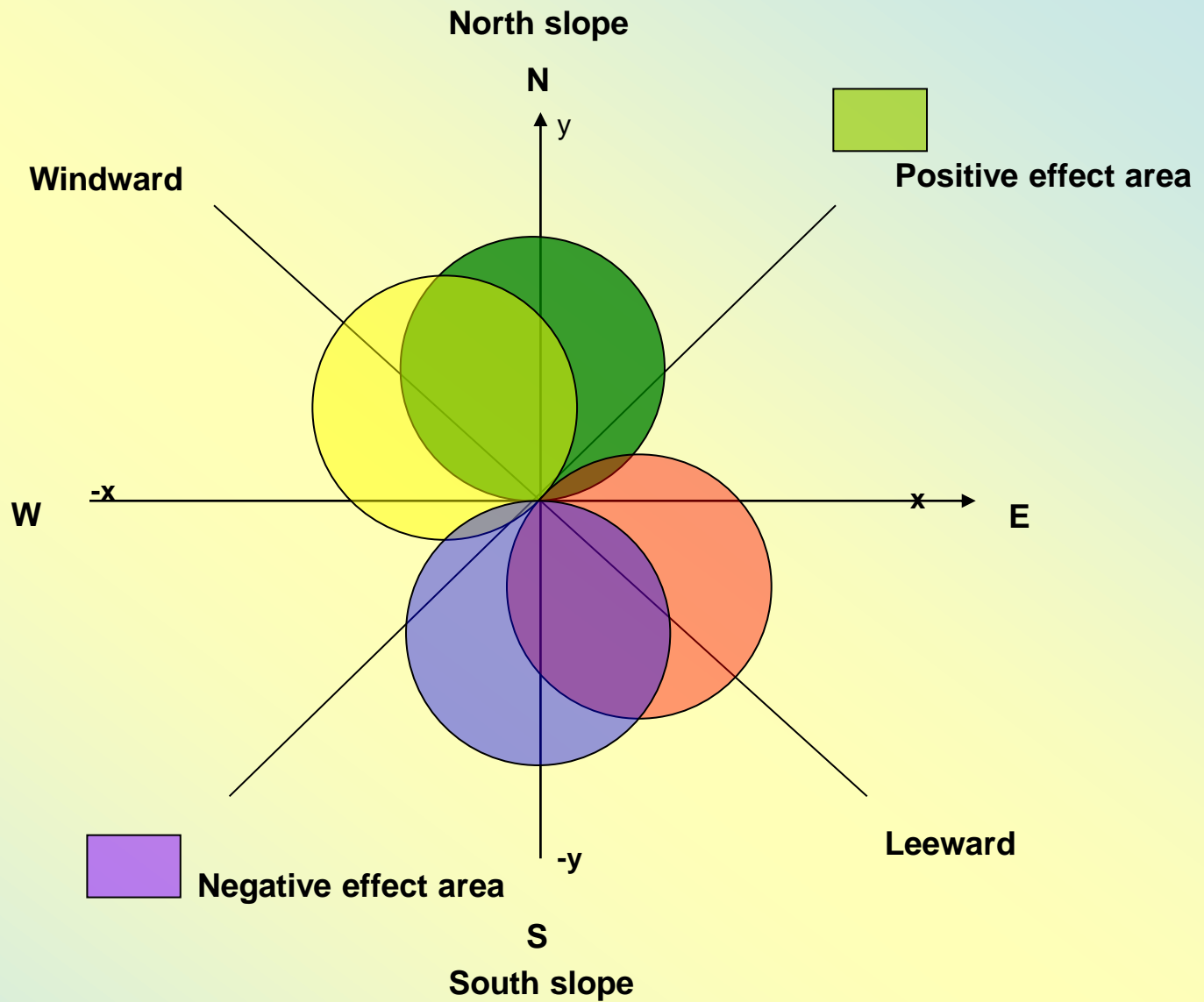
On regional outcomes because of **the pattern behavior** of the climate system, **mosaic peculiarity** of the land cover, and **mixed structure** of ecosystems with aggressive intervention of man managed systems where pastoralism plays a special role in case of Mongolia.

Moisture supply atmospheric circulation regime for the territory of Mongolia and adjacent land areas







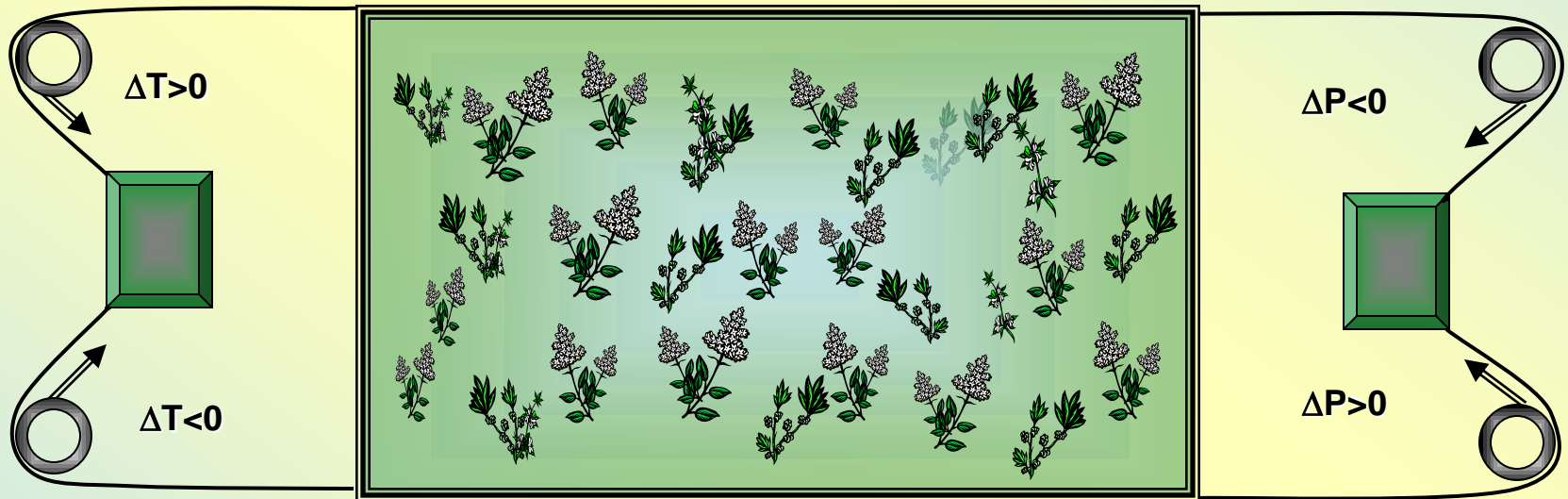


Scheme of “effect areas” in different parts of mountain (modeled as circles) depending on the orientation of given spots to the Sun and Wind
Projection of orographic effect of mountain on precipitation amount and evapotranspiration rate

Density of Vegetation cover (shrubs, patches of grass and etc.) as function of temperature and rainfall for given soil properties

$$D = f(T, P)$$

T, P are around the climate norm



$$\Delta P = \frac{P' - \bar{P}}{\bar{P}}$$

$$\Delta T = \frac{T' - \bar{T}}{\bar{T}}$$

In accordance with the current trend of climate variability the adverse impacts of climate change on livestock can be outlined as:

Traditional way of livestock husbandry can be threatened by multitude of factors such as global-warming-caused cold waves with heavy snow storms, an early establishment of long lasting and fixed snow coverage over the territory in winter.

These factors in combination with the increased soil moisture deficit, due to possible decrease in summer rainfall and intensified evapotranspiration, can prevail as pressures on livestock, with heat stress no longer being the single stress factor for animals.

Impact of globalization

Mongols as a nation who, once in history, promoted and maintained flow of people, goods, ideas, and knowledge between West and East as the “first wave” of globalization can themselves become victims from its modern “tsunami”?

What can be expected from globalization as advantages and disadvantages in Mongolia?

Side effect of globalization?

The concerns are raised in relation with globalization impacts from the possible **overturned effects of high tolerance** of “nomads” to any new elements in life sustaining systems, which might include non native, but more disturbing and life changing “cultural” elements. Mongols can compete with the world only by offering their own assets in maintenance of which they have inherent skills, and not copying others with whom they need to compete.

- **The rate of tolerance and acceptance** can be defined mostly by the aggressiveness of the invading, non native cultures rather than by its benefits for local communities. Alcoholism, drug addictions, gambling, highly commercialized “dirty” entertainment, cross border economic crimes, human trafficking and etc., are only a few examples of the side effects of globalization that could be more disturbing for “virgin” societies like in Mongolian case rather than the infrequent extreme weather events.

Serious concerns in economy sphere:

Unregulated FDI, mostly in mineral resource extracting sectors.

Example: Currently the world's "hot places" in terms of money laundering like Virgin Islands (UK), Bermuda are among the top 10 investors to Mongolia while Japan is listed at the bottom of the list despite the fact that Japan has been and still is a single top donor country for Mongolia.

Stratification and polarization in society

World wide respected and popular newspapers and magazines are also publishing articles about the opening of high class shops in Ulaanbaatar by the world leading companies, selling most expensive and luxury goods as a sign of Mongolian progress. In reality it is an indication of **income polarization** in the society rather than prosperity of the society.

Prosperity is not for everyone

At present, more than 35 percent of the population is living below the poverty line. Only a few ladies can shell out one thousand USD for a single bag in Louis Vuitton shop in UB while many women and mothers are still striving to pay one thousand tugrics (less than one USD) for milk for their children.

Serious concerns on new mentality of people:

Unhealthy competition among business people and entrepreneurs showing off their non productive assets like high rise office buildings, riding cars, ceremonial dressing etc, not by quality of products and services.

Best selling magazines are publishing materials about those individuals who bought a luxury car paying a half million USD, or those who paid half billion tugrics (a little bit less than half million USD) for single horse etc. as exiting news.

Mentality and incompetence

If a more active part of a society, as an engine for development, would be affected by a “mentality crisis” like it has been happening in Mongolia, it might lead to failures in policy making processes and incompetence of governing structures.

If it is the case the newly emerging challenges might generate additional challenges before they would be handled properly.

New wave of public brainwashing. Mongolia and Kuwait

The same rank of world wide popular newspapers are publishing material about the riches of Mongolia, predicting that it could or would soon be like Kuwait of Asia. Such kind of message , as a masked advertisement in order to increase the “value” of companies’ shares at the international market can play as the brain washing information for the public who accepts it literally.

What is recommended to do?

The globalization induced changes in society need to be harmonized with the natural capital and traditional cultural values in order to avoid possible “shocks” that might trigger negative “domino effects” shaking the sustainability of the entire society.

Globalization versus tradition?

What is tradition? Who needs tradition?

Traditional lifestyle is not merely a subject of identity for Mongols or subject for tourist attraction. It is the most accessible for everyone option for the BHN, based on the guaranteed available resources, as vast grasslands and available capacity in the form of traditional knowledge tested and shaped throughout thousands of years of the nation's existence.

- **Tradition** is not static nor “frozen” and unyielding. It has its own dynamism.

Best traditions can survive and continue to serve people when they are able to reconcile with evolution of natural environment and human history coping with challenges of societal development. In this sense, the tradition in Mongolia needs **innovation** and traditional lifestyle needs **diversification**.

Distortion in tradition, “mentality crisis”

- The lessons from around the world show that Traditions might not “serve” to benefit the communities if left without a necessary care at the level of society.
- During the transition period since 1990-ies Mongolia faced market distortions which occurred almost in every sector of its economy. Likewise, a sort of distortion in tradition or even “mentality crisis” was occurring in society as a nation wide phenomenon.

Some examples:

- Shift from full rejection of religion related ceremonies in the past to a full range of religion based life arrangements (for travel, medical treatments, business meetings etc.)
- Building of “subargans”, erection of “ovoos”, marking of trees as sacred everywhere by everyone without a serious reason, leaving “khadaks” everywhere (ovoos, trees, rocks, bridges and etc.) without clear understanding or indication of purpose and etc.

Falsification of tradition and traditional beliefs

Widespread shamanistic beliefs and rapid increased number of fortune tellers. Some of fortune tellers are trying to convince people that they are capable to manage their clients fortune, if...

It is well known from the ancient time that not every one can be trained as a shaman.

Many people are confused about the use of what, when and why? **Conventional wisdom, scientific knowledge, instructions of a shaman...**

Lesson from Mongolian transition

Any vacuum left beyond national policy, particularly during the transition period, can be filled by chaotic endeavors, including wrongdoings, mysticism masked by religion or tradition.

What can be done? **No idea.**

Can Mongolia benefit from Globalization?

- Answer is: YES.
- Smart policy combined with wisdom of people can make globalization work for the benefit of Mongolia. This world wide phenomenon can work even for revitalization of traditional way of life, but not for erasing it. Properly managed globalization process can inject new impulse to the traditional life sustaining system enabling it to become stronger to serve the people who created it in their not easy exercise of dealing with modern day's challenges.

Modern technology and know how

- modern communication technologies with wireless and mobile connections,
- renewable energy facilities with flexible energy supply opportunities;
- water purification equipment;
- internet access with remote education and healthcare services;
- modern compact machineries to process livestock products for family based and small scaled businesses;
- modern commercial networks promoting, providing access to markets in cities without having to migrate into urbanized areas and so on.

Alternatives or complementary endeavours

Crop cultivation based on indigenous knowledge, modern science and agro technology, as well as ecotourism would be essential options for diversification of income sources for local communities.

Convert negative impacts into positive ones

Smart policy at the national level and wisdom of people in everyday life can make difference, even **reversing** the negative effects of the global warming and globalization into positive ones.

Big opportunity but a big challenge

Everyone in Mongolia is expecting that the GDP would be doubled or tripled from exploration of the big mineral deposits. But not everyone might be aware that quite different nature of stresses on the society can be associated with the possible so called “resource curse”.

Resource curse risk

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 may not be able to avoid failures experienced by many other so-called “resource rich” developing countries who tend to “enjoy” an easy way to development relying on their natural wealth, particularly, mineral resources, rather than their human capacity.

- **One of major concern** is related to the cultivation of attitudes among population to live off the unearned income, such as “Grant of Motherland” or “Share of Treasure” etc. which are the very popular election promises made by politicians regarding the possible future dividends from the major mining explorations.

Can everyone in Mongolia benefit from the mining “boom”?

The policy makers in Mongolia today are talking about two “Tolgoi” (copper, gold and coal hills) which might significantly increase its GDP. In fact these mining explorations can provide certain job opportunities, however might not contribute too much to the improvement of everyone's life in this country as it is widely believed and expected.

Does Mongolia need risky alternatives for source of income?

Very risky and dangerous attitude is being nurtured by certain commercial minded people in this country to make easy money sacrificing the very life basis of the future generations by renting out the most fertile lands just for profit, by agreeing to store, bury in Mongolia toxic chemicals and nuclear waste generated outside of its borders.

Concluding Remarks

- At present Mongolia is facing multiple challenges in relation with the current and expected climate conditions. Human activities are making an increasing contribution to the destabilization of ecosystems in Mongolia.

Modern science and traditional knowledge

- Science based policy is needed in respect to a development paradigm of the country in order to prevent any collapse level degradation in ecosystems due to interference effect of human and natural systems.
- Mongolia has certain advantages, since it can benefit from its ecosystem services thanks to the dominance of natural and semi-natural ecosystems in the country and its people's unique lifestyle based on human mobility in the form of classical pastoralism.

Response option to climate change

Traditional pastoralism, enriched by the advancement of modern technology and knowledge and diversified, involving cropping, ecological tourism, and other income source related activities in complimentary and environmentally sound manners, can be the best possible option in the adaptation efforts to climate change strategy in order to minimize stress on society caused by global warming.

Handling the globalization impact

Globalization related stresses might have a more disturbing impact on Mongolian society in comparison with the effects of global warming, due to Mongolia's long lasting isolation in the past from a broad and wide spectrum of cultural domain in the world. Therefore, globalization induced changes in society need to be harmonized with natural capital and traditional cultural values to help avoid possible “shocks” that might trigger negative “domino effect” like consequences on local eco- and social systems.

Concluding remarks on adaptation strategy:

- High priority should be given to the **near** and **mid term** incremental changes with special focus on high impact events, such as change in precipitation patterns with the increase of its winter proportion and lesser frequency but higher intensity rains in summer.
- In the midterm plan, a focus has to be made on possible long-lasting aridity in some parts of the territory of Mongolia, with increased deficit of water for livelihood and production activities.

Adaptation strategy In the long term plan:

Some uncertain or low probability but high impact events should be kept in the field of vision, i.e., a complete shift of climate zones with intensified rate of desertification, which result in dramatic social consequences like mass displacement of people within and beyond their national border, including flow of people in both direction as ecological refugees.

- **International cooperation** is needed to identify the “tipping points” in relation with the aerosol impact on regional climate system due to intensified land use change. In some parts of Mongolia, focus of the study should be made on the role of the so called black carbon or other albedo effective aerosols in acceleration of glacier melting and its matching rate with possible above ‘normal’ accumulation of snow in winter season.

Additional remarks

- Mongolia has more than enough renewable and non exhaustible natural resources (land space with necessary attributes, natural beauty, solar and wind energy sources etc.) to support human life on a modern level of demand if it can mobilize its highly capable human resources. The available and profitable mineral resources can be explored for infrastructure development and additional capacity building in society.

- Traditionally, life in Mongolia was sustained on the tireless efforts of every member of society, on contribution of every member of family, both juniors and seniors. People in Mongolia had a saying that “ Every new family member will add own portion to family foodstuffs”.
- In other words, life sustainability in family, in community and in society was not linked to the number of human beings, to increase of population.

What is a guarantee for sustainability of life?

- Well maintained function of every single unit of society, starting from every individual household, had been a primary guarantee for sustainability of life in Mongolia through its long history.
- Revitalization and pursuing of this life sustaining principles would help Mongolia to avoid resource curse and determine its proper way toward to the sustainable path of development.

Would what happens in Mongolia have any regional implications?

Mongolia does not have enough economy potential, military “muscle”, political influence and other classical factors to be a real power or active player in the region. But Mongolia can be the best indicator of what is going on in Asia and even in the world due to its geopolitical position. This summer in August in just 1-2 week time many high ranking officials, including some heads of states visited Mongolia.

- **These countries** were China as direct emerging super economy neighbor, ROK as an active trade and investment partner, Finland as one of the most prospering members of the EU and USA as world leading economy power. Successes or failures of Mongolia in dealing with the above mentioned emerging challenges would reflect the cooperation policy trend of the partners of Mongolia, particularly, Russia and China as direct neighbors and USA, Japan, ROK, EU members as third neighbors in accordance with the Mongolian foreign policy concept.

Mongolia's ownership is key in dealing with the named challenges

Mongolia itself should be able to be the key actor in this exercise earning maximum dividends from its capable human resources, from its rich natural wealth and from favorable international cooperation, from synergy of all supporting factors in coping with newly emerging named challenges.



Final word of acknowledgement

I would like to express my deep
appreciation to the

Host of this Conference, namely, the
Science Council of Japan and other fine
co-organizers for the opportunity to
speak here and to listen and learn many
wisdoms from every participant of this
great event.

Thank you very much for
your kind attention!

どうも有難う御座いました