

ORDER OF THE MINISTER OF FOOD, AGRICULTURE AND LIGHT INDUSTRY

8th of June, 2018

No: A-105

Ulaanbaatar city

Approval of The Action Plan

In line with the Global Agenda of Sustainable Livestock under the framework of the Food and Agriculture Organization of the United Nations, and according to the article 12.3 of Law on Protection of Livestock Health and article 5.9 of Law on Genetic Fund of Livestock, followings are ordered:

1. Approve the “Action Plan of Mongolian Agenda for Sustainable Livestock” as attached to the annex of this order.

2. Assign the State Secretary /Mr. D.Enkhbat/ to approve the activity plans to implement the “Action Plan of Mongolian Agenda for Sustainable Livestock” nationwide, to support the implementation with technical, methodological and management guidance, and to inform the Minister about its implementation progress and results.

3. Oblige the State Secretary /Mr. D.Enkhbat/, director general of the Department of Policy Planning /M.Enkh-Amar/, and director general of the department of the Livestock Policy Coordination to reflect the objectives and activities into the annual socio-economic development guideline, and to reflect the required budget of the action plan into state and local budgets, and look for co-financing opportunities for this action plan with Global Agenda of Sustainable Livestock under the framework of the Food and Agriculture Organization of the United Nations, international organizations, donors with means of grants and loans.

4. Assign the director general of the Department of Internal Monitoring and Evaluation /D.Sovd/ to monitor the implementation progress of the action plan.

The Minister B.Batzorig

ACTION PLAN OF MONGOLIAN AGENDA FOR SUSTAINABLE LIVESTOCK

One. Framework and principles

- 1.1. Implementation of the sustainable pastureland¹ management, and adaptation to the climate change;
- 1.2. Improving the economic efficiency of the livestock sector;
- 1.3. Enhancing livestock health, food security and safety;
- 1.4. Improving the social inclusiveness in rural areas;
- 1.5. Strengthening partnership and participation.

Two. Goal and objectives

2.1. Goal

The goal of the MONGOLIAN AGENDA FOR SUSTAINABLE LIVESTOCK (MASL) action plan is to support the sustainable development of the Mongolian livestock sector as economically efficient while implementing sustainable pastureland management, enhancing food security and safety and social inclusiveness, and strengthening stakeholder partnerships and participation.

2.2. Objectives

- 2.2.1 To restore, rehabilitate and utilize pastureland and water resources sustainably and responsibly, to adapt to climate change, and to mitigate climate change impacts;
- 2.2.2 To improve the efficiency and productivity of livestock production in various livestock product value chains, and to develop export-oriented livestock production;
- 2.2.3 To develop veterinary and animal breeding services, and to improve food security and safety;
- 2.2.4 To support rural development, to reduce poverty and income inequality, and to improve the social service delivery and quality;
- 2.2.5 To develop partnerships between stakeholders including professional associations, research organizations, non-government organizations, herder organizations, cooperatives and international organizations, and to support public–private partnerships.

¹ Pastureland refers to the vast steppe, desert and forest areas where horses, cows, yaks, goats, sheep, camels and wildlife graze and browse on traditionally managed lands.

Three. Action plan

№	Activities	Timeline	Responsible organization	Implementing partner organizations	Budget (Billion MNT)
Objective 1: To restore, rehabilitate and utilize pastureland and water resources sustainably and responsibly, to adapt to climate change, and to mitigate climate change impacts					
1.1	Improve restoration, rehabilitation and sustainable utilization of the pastureland	2019-2020	Ministry of Food, Agriculture and Light Industry	Ministry of Construction and Urban Development	6.12
1.2	Establish “Sustainable livestock” revolving fund” in the local areas, which is replenished by pasture use fee.	2019-2020	Ministry of Food, Agriculture and Light Industry	Ministry of Finance	0.85
1.3	Establish a Pasture Management unit in the Ministry of Food, Agriculture and Light Industry	2018-2019	Ministry of Food, Agriculture and Light Industry	-	0.12
1.4	Conduct the scientific research and assessments on state of the pastureland and pastoral livestock sector	2019	Ministry of Food, Agriculture and Light Industry	Universities, research organizations	3.40
1.5	Embed development of innovations and technologies with support of research teams in research and development centers, which synchronize with local conditions and state of the pastureland and livestock husbandry	2018-2019	Ministry of Food, Agriculture and Light Industry	Universities, research organizations, National Agricultural Extension Center	1.71
1.6	Increase pastureland water supply	2018-2020	Ministry of Food, Agriculture and Light Industry	Herders organizations	6.82
1.7	Improve, irrigate and protect the hay making areas	2018-2020	Ministry of Food, Agriculture and Light Industry	Herders organizations	1.19
1.8	Support pastureland resting (without grazing) in the spring, and establishing improved reserve pastureland near to the winter and spring camps	2018-2020	Ministry of Food, Agriculture and Light Industry	Herders organizations	1.22
1.9	Develop management information system of livestock	2018-2020	Ministry of Food,	Universities, research	17.34

	sector, traceability system of livestock raw materials and products, and expand livestock registration system		Agriculture and Light Industry	organizations, professional organizations	
Sub-Total					38.77
Objective 2: To improve the efficiency and productivity of livestock production in various livestock product value chains, and to develop export-oriented livestock production					
2.1	Develop optimization model for sustainable livestock sector	2019	Ministry of Food, Agriculture and Light Industry	Ministry of Finance, Universities, research organizations	1.02
2.2	Conduct a feasibility study to reintroduce procurement system of livestock raw materials and products, and enable the legal environment for the system	2018-2019	Ministry of Food, Agriculture and Light Industry	Mongolian Commodity Exchange, Universities, research organizations	2.04
2.3	Support and advertise the creation of livestock products for targeted markets, and introduce and develop new technology based on the study of traditional production methods	2018-2020	Ministry of Food, Agriculture and Light Industry	National Agricultural Extension Center, Universities, Research organizations	4.08
2.4	Develop intensive livestock farming in peri-urban and crop area, take actions to supply major livestock products for human consumption regularly and sufficiently	2018-2020	Ministry of Food, Agriculture and Light Industry	National Agricultural Extension Center, Universities, Research organizations	0.34
2.5	Develop light industries to process livestock products, and support primary processing in local areas	2018-2020	Ministry of Food, Agriculture and Light Industry	Private sector, professional organizations	8.52
2.6	Conduct a study to launch 'Unique Mongolian' products, introduce and develop technology, create supply of equipment and tools for established product models, support the provision of packaging, and develop know-how	2018-2020	Ministry of Food, Agriculture and Light Industry	National Agricultural Extension Center, Universities, research organizations, professional organizations	6.12
Sub-Total					22.12
Objective 3: To develop veterinary and animal breeding services, and to improve food security and safety					
3.1	Establish a nationwide system on veterinary services, including activities on disease early diagnose and precaution, constantly	2018-2020	Ministry of Food, Agriculture and Light Industry	Veterinary and Animal Breeding Agency	3.43
3.2	Introduce appropriate medicine use for livestock, conduct training and disseminate information to the	2018-2020	Ministry of Food, Agriculture and Light	Veterinary and Animal Breeding Agency, General	1.71

	herders, take actions to reduce use of antibiotics, establish an unified database on veterinary pharmacy and drug sales		Industry	Agency for Specialized Inspection	
3.3	Improve efficiency and quality of livestock through introducing technology and equipment on technical services for veterinary and animal breeding, develop mechanization and automatization appropriate for pastoral livestock	2018-2020	Ministry of Food, Agriculture and Light Industry	Universities, research organizations, professional organizations	6.82
3.4	Establish measurement activities of animal productivity, support livestock husbandry in constant frequency that is adaptable to the local conditions, and support the demand driven livestock selection and breeding services	2018-2020	Ministry of Food, Agriculture and Light Industry	Universities, research organizations, professional organizations	2.72
3.5	Revise strategic plan of animal breeding services in Mongolia through extensive discussions among professional organizations	2018-2020	Ministry of Food, Agriculture and Light Industry	Universities, research organizations, professional organizations	1.19
3.6	Develop a project proposal on “possibilities to improve trading of genetic resource of Mongolian livestock” in partnership with the United Nations Committee for Animal Genetic Resources	2018-2020	Ministry of Food, Agriculture and Light Industry	National Center for Livestock Gene pool of Mongolia, Universities, research organizations, professional organizations	1.02
3.7	Conduct frequent research on food security and safety, nutrition and market study of livestock products, support policy on production, and take actions to reduce trade barriers	2018-2020	Ministry of Food, Agriculture and Light Industry	General Agency for Specialized Inspection, Customs General Administration of Mongolia	0.68
3.8	Develop standards of livestock products throughout its value chains, conduct feasibility research on standards, establish monitoring system on food security and quality	2018-2020	Ministry of Food, Agriculture and Light Industry	General Agency for Specialized Inspection, Universities, research organizations, professional organizations	1.73
Sub-Total					19.3
Objective 4: To support rural development, to reduce poverty and income inequality, and to improve the social service delivery and quality					
4.1	Develop and conduct field based and mass media training programmes, to improve the capacities of herders’, local professionals and officials in charge of livestock husbandry	2018-2020	Ministry of Food, Agriculture and Light Industry	Ministry of Education, Culture, Science and Sports, Universities, research organizations	1.53

4.2	Encourage young professionals and graduates to work in the rural areas, and provide scholarships during their study period	2019 -2020	Ministry of Food, Agriculture and Light Industry	Ministry of Education, Culture, Science and Sports, Universities, research organizations	2.04
4.3	Organize trainings for herders to provide up-to-date information and knowledge, for instance on topic of “Opportunities and ways to benefit from social welfare services”	2018-2020	Ministry of Food, Agriculture and Light Industry	Ministry of Education, Culture, Science and Sports, National Agricultural Extension Center, Universities, research organizations	11.22
4.4	Conduct trainings for young herders to learn from senior or experienced herders through learning methods of practical field demonstrations and distance learning	2018-2020	Ministry of Food, Agriculture and Light Industry	Ministry of Education, Culture, Science and Sports, Ministry of Labor and Social Protection, Herders organizations, local government administration offices	6.12
4.5	Develop policies for reducing income inequality, and supporting a prosperous rural middle class	2018-2020	Ministry of Food, Agriculture and Light Industry	Ministry of Labor and Social Protection	0.85
4.6	Support policies for securing and increasing job positions of assistant herders	2018-2019	Ministry of Food, Agriculture and Light Industry	Ministry of Education, Culture, Science and Sports, Ministry of Labour and Social Protection	1.19
Sub-Total					22.95
Objective 5: To develop partnerships between stakeholders including professional associations, research organizations, non-government organizations, herder organizations, cooperatives and international organizations, and to support public–private partnerships					
5.1	Establish system of mutually beneficial cooperation and partnership, and increase the investment to the livestock sector through improving the participation of all stakeholders	2018-2020	Ministry of Food, Agriculture and Light Industry	Ministry of Finance	0.12
5.2	Apply information technology and management information systems to monitor and evaluate the implementation and progress of the sustainable livestock sector; and to establish “Comprehensive data and research network of livestock sector”	2018-2020	Ministry of Food, Agriculture and Light Industry	Ministry of Education, Culture, Science and Sports, Information Technology Park	3.00
5.3	Support stakeholder partnerships to encourage young persons to work for the livestock sector, for instance making documentary movies and feature films	2018-2020	Ministry of Food, Agriculture and Light Industry	Ministry of Education, Culture, Science and Sports	6.82

5.4	Promote and advocate for the value and importance of the livestock sector to the public	2018-2020	Ministry of Food, Agriculture and Light Industry	National Agricultural Extension Center, Professional organizations	2.38
5.5	Establish a platform to deliver livestock extension services to all stakeholders through strong partnerships	2018-2020	Ministry of Food, Agriculture and Light Industry	National Agricultural Extension Center, Universities, research organizations, professional organizations	1.70
Sub-Total					14.02
GRAND TOTAL					117.16

Four. Criteria

№	Criteria	Measurement unit	Baseline (Year)	Target (in 2020)	Sources
Objective 1: To restore, rehabilitate and utilize pastureland and water resources sustainably and responsibly, to adapt to climate change, and to mitigate climate change impacts					
1.1	Number of livestock that exceeds the pastureland carrying capacity	Million Sheep Unit	25 (2017)	20	Ministry of Food, Agriculture and Light Industry (2018.05.01) Introduction to the proposal of the pastureland law
1.2	Percentage of area that is cleared of gerbils and grasshoppers to the total degraded pastureland area	1.2.1. Gerbils	5.77 (2016)	8	Ministry of Food, Agriculture and Light Industry (2017) Report of monitoring and evaluation of the implementation of the second stage of “Mongol Livestock” National Programme; National Statistics Office of Mongolia (2018) Mongolian Statistical Information Service, www.1212.mn
		1.2.2 Grasshoppers	0.5 (2016)	1	
		1.2.3 Total	6.26 (2016)	9	
1.3	“Sustainable livestock” revolving fund is established in the local areas, which is replenished by pasture use fee	Yes/No	No (2017)	Yes	Ministry of Food, Agriculture and Light Industry
1.4	“Management information system of livestock sector” is established and started the implementation	Yes/No	No (2017)	Yes	Ministry of Food, Agriculture and Light Industry
Objective 2: To improve the efficiency and productivity of livestock production in various livestock product value chains, and to develop export-oriented livestock production					
2.1	Gross livestock output per capita, estimated by production method	Million MNT	1.12 (2016)	1.2	National Statistics Office of Mongolia (2018) Mongolian Statistical Information Service, www.1212.mn
2.2	Gross livestock output per herder household, estimated by production method	Million MNT	21.76 (2016)	30	National Statistics Office of Mongolia (2018) Mongolian Statistical Information Service, www.1212.mn
2.3	Export of livestock products*	Million US\$	361.4	400	Customs General Administration of

			(2016)		Mongolia (2018) Statistics of foreign trade, National Statistics Office of Mongolia (2017) Agriculture sector-2016, page 14
2.4	Number of breeding livestock per zoo technician	Thousand head of breeding stock	67.7 (2017)	39.6	Veterinary and Animal Breeding Agency (2017) Annual report-2017**
Objective 3: To develop veterinary and animal breeding services, and to improve food security and safety					
3.1	Monthly average per capita consumption of some livestock foodstuff by adult equivalent		-	-	National Statistics Office of Mongolia (2018) Mongolian Statistical Information Service, www.1212.mn
	3.1.1 Meat, meat products (in terms of meat)	3.1.1.1 National average	8.6 (2017)	10	
		3.1.1.2 Urban	6.9 (2017)	8	
		3.1.1.3 Rural	10.7 (2017)	11	
	3.2.1 Milk, dairy products (in terms of milk)	3.2.1.1 National average	10.9 (2017)	12	
		3.2.1.1 Urban	7.2 (2017)	9	
3.2.1.1 Rural		15.5 (2017)	16		
3.2	Share of imported milk in domestically processed milk	%	28 (2016)	20	Customs General Administration of Mongolia (2018) Statistics of foreign trade
3.3	Number of occurrences of livestock infectious diseases	Number of soums were disease was registered, double counting	598 (2016)	300	National Statistics Office of Mongolia (2017) Mongolian Statistical Yearbook-2016
3.4	Recovery rate of animals affected by infectious diseases ***	%	80.5 (2016)	85	
3.5	Number of livestock per veterinarian	Thousand heads of livestock	39.2 (2017)	30	Veterinary and Animal Breeding Agency (2017) Annual Report-2017
Objective 4: To support rural development, to reduce poverty and income inequality, and to improve the social service delivery and quality					
4.1	Share of herders who paid social insurance fee in total number of herders	%	19.3 (2016)	40	National Statistics Office of Mongolia (2018) www.1212.mn
4.2	Rural poverty rate	%	39.4 (2016)	30	National Statistics Office of Mongolia (2017) Poverty profile-

					2016 (Research report of household socio-economic survey-2016)
4.3	Share of herder households, owning less than 200 heads of livestock, in total number of herder households	%	43 (2016)	30	National Statistics Office of Mongolia (2017) Mongolian Statistical Yearbook-2016
Objective 5: To develop partnerships between stakeholders including professional associations, research organizations, non-government organizations, herder organizations, cooperatives and international organizations, and to support public-private partnerships					
5.1	Total investment to the agriculture sector	Billion MNT	147.5	170	National Statistics Office of Mongolia (2017) Mongolian Statistical Yearbook-2016
5.2	Share of herders at age of 15-34 in total number of herders	%	34.8 (2016)	38	National Statistics Office of Mongolia (2017) Mongolian Statistical Yearbook-2016
5.3	“Comprehensive data and research network of livestock sector” is established	Yes/No	No (2017)	Yes	Ministry of Food, Agriculture and Light Industry

Note:

*Includes: 1) Live animals, animals origin products, 2) Animal and vegetable fat and oil, 3) Raw and processed hides, skins and fur and articles thereof, and 4) Textiles and textile articles.

**Implementation of “Law on genetic fund of livestock” will require to establish 1-2 new units in every soum, which will allow increase the number of zoo technicians hence there will be about 39.6 thousand breeding stock per zoo technician (Veterinary and Animal Breeding Agency, 2017).

*** This is calculated by the number of livestock that survived divided by the number of sick livestock and represented in percentage, using data reported by National Statistics Office of Mongolia (2017).

Situation Analysis of Livestock Sector in Mongolia

Compiled for

ACTION PLAN OF MONGOLIAN AGENDA FOR SUSTAINABLE LIVESTOCK

1. Background

In 2016, the livestock sector shared 10% of the GDP, 28% of the labour force, and 88% of the agricultural production, and 6.6% of the export, and provides income sources of 56% of rural households in Mongolia¹.

Even though, the number of livestock reached to record of 66.2 million heads in 2017, livestock sector has been challenged with pastureland degradation, reduction of productivity per head, livestock diseases, and herders' social problems.

2. Pastureland² degradation

The total area of pastureland in Mongolia is 110.5 million hectare but about 65% of the pastureland has been degraded in 2014³. The main cause of the pastureland degradation is the increase of number of livestock that has lower productivity and is inefficiently kept for long period. The total number of livestock in Mongolia in 2017 already overstocked than the carrying capacity of the pastureland by more than 25 million heads⁴. Exceeding carrying capacity of the pastureland causes to scarcer fodder resources in the grassland, increased vulnerability to the drought and *dzud* natural disasters, which cause to death of millions of livestock in a very short time.

Grazing the livestock on the pastureland before the maturity level of regrowth of grass cause the pastureland degradation; furthermore, reduction of number and distance of the herders' movements creates more pressure in central areas, leaving the far and remote pastureland under-utilized. The regrowth rate of the pastureland is decreasing in certain areas including water sources, rivers, lakes, springs, and near to the *soum* and *aimag* centers, or urban areas.

¹ NSO (2017) Statistical Yearbook of Mongolia-2016

² Pastureland refers to the vast steppe, desert and forest areas where horses, cows, yaks, goats, sheep, camels and wildlife graze and browse on traditionally managed lands.

³ Green Gold Project (2015) State of grassland health report

⁴ MOFALI (2018.05.01) Introduction of proposal of pastureland law

In Mongolia, pastureland issues were integrated into the updated version of the Land Law approved in 2002 by the parliament; however, there is no comprehensive legal document that integrates of the issues of the pastureland, and no government institute in charge of pastureland, which leads to low level of policy coherence and to lessen the opportunities to implement the sustainable pastureland management.

This can be seen from evidences that issues of land owning, possessing and utilization, and approval and implementation of pasture use plan are legislated under control of units of land affairs of local government; furthermore, land cadastre, cartography are legislated under control of Agency for Land Affairs, Geodesy and Cartography; evaluation of state of pastureland conditions is legislated under National Agency Meteorology and the Environmental Monitoring; and issue of reserve (*otor*) pastureland is legislated under control of MoFALI.

3. Reduction of the economic efficiency of the sector and reduction of the livestock productivity

The traditional theme of the livestock sector was increasing “Extensive production” or increasing number of livestock, but not focusing on increasing livestock ‘quality’ or productivity per head. The number of livestock increased that helped the economic growth, but this did not affect the increase of the growth of the productivity.

This is evidenced that value added per head of livestock was MNT 37.5 thousand in 1989, but it did not almost change in 2014⁵ or even reduced⁶. According to a study result in 2014, average live weight of the sheep was reduced 1-2 Kg and for cattle by around 30 Kg in last ten years⁷. Reduction of the productivity per livestock was also evidenced by the national statistics. For instance, in 1990, there were 6.85 million heads of small ruminants (sheep and goats) slaughtered for production of 132.3 thousand tons of meat and average carcass weight was 19.3 Kg per slaughtered small ruminant in Mongolia. However, in 2016, number of slaughtered small ruminants reached to 11.6 million heads for production of 193.1 thousand tons of meat, and average carcass weight reduced to 16.6 Kg or by 13.9% (compared to 1990) per slaughtered small ruminant in Mongolia.

⁵ <https://www.mongolbank.mn/documents/tovhimol/group10/10-19.pdf>

⁶ Interviews with herders and local authorities.

⁷ <http://old.eagle.mn/content/read/14408.htm>

In national average, daily milk output was 2.6 Litre, milked for 6.7 months a year per Mongolian local breed cow, and about 92.6% of milking cows used to be milked in 2010; however in 2015, daily milk output decreased to 2.1 litre, average milked months reduced to 5.9 months a year, and 86.4% of the milking cows were milked⁸. Furthermore, annual wool output per adult camel was 4,540 grams and 1,446 grams for sheep wool in 1998; but in 2015 camel wool output reduced to 4,381 grams and 1,103 grams for sheep wool.

Reduction of the livestock productivity could be explained by several factors including pastureland degradation, dryness, desertification, water scarcity and shrinking rivers and lakes, and climate change that are all natural causes (pastureland degradation is both caused by natural and human factors). On the other hand, human induced factors also affect to the reduction of the livestock productivity including livestock death due to limited and weak veterinary services, increased miscarriages, unregulated, unorganized and non-professional livestock breeding and selection services, and decrease of livestock mobility or grazing in remote and rich pastures.

The limited or low level of meat export also causes to herders' decision not to slaughter the livestock at young ages for meat production, which results in increasing number of livestock. The most critical factor for limiting the meat export from Mongolia to international markets is the spread of animal diseases; hence the international hygienic standards could not be met. Even the livestock diseases were registered and spread in Mongolia frequently, there are disease free zones or regions but they are not provably evidenced and announced in the world market, secondly the activities to build livestock traceability, to identify and approve the origin of the livestock and livestock product which originated from disease free regions.

Another cause to reduce the economic profitability of the livestock herders can be the under-developed and limited "Extension Service", and low level of understanding about importance of the service among the herders; there are some extension service providers that dependant on development projects rather financially independent organization financed by multi-sources. It is international practice that the extension service is to advise or even assist to combat with livestock diseases, organize livestock breeding and selections, overcome against natural disasters, e.g., drought and *dzud* (harsh winter and spring with coldness, heavy snow and or storm); furthermore it is to help the herder in the field, and disseminate information and conduct trainings among stakeholders.

4. Animal health and food security and safety

Livestock sector is important for securing human health and food and nutrition in the world. It is important for Mongolia to implement the existing objectives including National Security Concept of Mongolia, objectives of "Safe food-Healthy Mongolian" reflected in the Government Action Plan.

⁸ NSO (2017) Sample survey of the agriculture sector-2015: Summary results, http://www.1212.mn/BookLibraryDownload.ashx?url=Agricultural_sample_surveys_2016_mn.pdf&ln=Mn

Veterinary service is to improve the animal health, but this sector lack with finance. For instance, the approved budget to precautions or preventive measure against the potential diseases and to stop the spread of the diseases is significantly limited. Medicines, equipment and fuels or transportation budget are also limited for adequate operation of veterinary services in local areas. Though herders have great interest of having the veterinary service, but such service is costly for them. For example, annual cost of veterinary service per sheep is about MNT 50 thousand or higher, which make the sheep farming unprofitable⁹.

Apart from that, herders have been conducting the veterinary services by themselves, which is unprofessional. For instance, herders buy the medicines, vaccines, and tools from veterinary pharmacies and do the injections and small operations by themselves.

The risk of spreading livestock diseases has been increased due to the increased livestock density as of increase of number of livestock, and livestock mobility or migrations. For instance, 598 *soums* (double counting) were registered for livestock infectious diseases in 2016, which is 1.9 times higher compared to 2007. Meanwhile, number of livestock was increased by 1.5 times 2007-2016.

Mongolia has no registration or information system for approving or informing percentage of healthy livestock and percentage of meat produced in disease free regions. This, in fact, has been diminished the opportunities of expansion of Mongolian meat export. Due to this fact, the price of livestock reduced and interest of slaughtering livestock and producing meat is weakened.

Recently approved “Law on Protection of Livestock Health” is expected to renovate the system of veterinary sector. However, implementing the law will might be challenged by: 1) low level of understanding of the concept of the law among government official and veterinarians; 2) slow operations of developing new standards of veterinary, amending the existing regulations, and even lack of professional human capital to do such changes; 3) demonstrations from business owners of selling animal medicines and drugs and pharmacies (because by new law those activities are completely controlled by the state); 4) Reduction of livestock may conflict with increase of livestock export, or even increasing slaughter rate might be challenged by existing problems of low level of export to the international markets¹⁰.

Currently, the cost of animal disease diagnosing and taking actions on preventive measures against animal disease is not financed by the government, but by the herders, which actually causes to increase the spread of the diseases and to enable the environment of infection. Current state policy (or finance) of veterinary directs to post-disease treatment activities and disinfections or cutting the spread of diseases rather than pre-disease control, or early diagnosing and preventive measures. This could be explained low veterinary budget cost per

⁹ Focus Group Discussion on Sustainable Rangeland Development, N.Gankhuyag, director of Mongolian National Federation of Pasture User Groups

¹⁰ Focus group discussion on “Animal Health” on 24 April, 2018.

livestock. For instance, about 13.5 thousand heads of livestock were under control of one veterinarian in 1989; but it is increased to 39.2 thousand heads or by 3 times in 2017¹¹.

University graduates who qualified in veterinary have been limitedly working as their major in local area i.e. *bag*, *soum* and *aimag* level. For example, in 2011 there were 119 students graduated as veterinarians, but of which 74 (62.2%) were working as veterinarians in 2015¹². The main reasons of this phenomenon are less jobs, lower salary, and weaker working condition in the country side compared to urban areas. For instance, travelling distance to reach to the herders is far, infrastructure is underdeveloped and working environment is harsh, mostly working in outside with extreme climatic conditions for diagnosing the livestock or providing veterinary service; lastly the government support for the new graduates for settling in the countryside is low.

5. Animal breeding and selection services

Researchers agree that slaughtering age of the livestock is being delayed and herders tend to slaughter their livestock at old age. Therefore, reduction of livestock weight is also partially explained by that the animal breeding and selections service has not been conducted properly. In 1990, about 29.5% of the total number of the livestock were slaughtered for meat and hide production, but this reduced to 20.6% in 2016, which results in economic turnover of livestock is getting delayed thus the number of livestock increases.

“Law on Genetic Fund of Livestock”, that integrated the issues of animal health and animal breeding together, was approved In 1992; because of this integration, importance of animal breeding was weakened and coverage was diminished, demand of having zoo technicians is reduced, capacities of the professionals is reduced, and productivity of livestock reduced, and cross-breeding was uncontrolled, livestock persistence against natural harsh climatic conditions and body mass reduced, and livestock composition (optimum mixture of livestock types) is unbalanced¹³. In 1989, there were about 20.3 thousand heads of breeding stock per zoo technician¹⁴, but this reached to 67.7 thousand heads or increased by 3 times in 2017¹⁵.

Animal breeding and selection services are now being done by individual herders, which does not support professional service for generating or enhancing genes of livestock that is resistant to Mongolian climate, and has high productivity of meat, milk and hair output per head. Current system of animal breeding and selection service is worse because as the service is not conducted under planned chronology, and not tend to organize breeding nucleus flock, or implementing artificial insemination etc.

¹¹ NSO (1992) State census of number of livestock in 1991, <http://www.1212.mn/BookLibraryDownload.ashx?url=livestock1991.pdf&ln=Mn>,
Veterinary and animal breeding agency (2017) Annual progress report of VABA in 2016, page 6

¹² School of Veterinary of MULS (2015) Employment study of graduates of School of Veterinary, MULS in 1983-2014, unpublished and non-public data

¹³ Veterinary and animal breeding agency (2017) Annual progress report of VABA in 2016

¹⁴ NSO (1992) State census of number of livestock in 1991

¹⁵ Veterinary and animal breeding agency (2017) Annual progress report of VABA in 2016

The commodity price on the market is unified or irrelevant of the quality of the product (softness of the meat, proportion of fat and meat, or thinness, length, and colour of cashmere/wool etc), which is the biggest challenge of improving the quality of the animal breeds. In other words, because there is no pricing system for good quality livestock commodity, herders have no incentive to produce and supply good quality products, to raise productive livestock, hence have weak thinking of having animal breeding and selection services.

6. Farm succession

Young generation of herding communities is shrinking, and while 50% of the livestock production cost is labour cost¹⁶. In 1990, herders aged 15-34 years old shared 55.7% of total number of herders, but this is reduced to 34.8% or decreased by 37.5% in 2016¹⁷. Reduction of farm succession level and increasing youth migration from rural areas to urban induce the livestock sector of having shortage of manpower and future sustainability of the traditional nomadic herding system. The main reasons of youth migration to the urban areas are more jobs and higher monthly salary. For example, monthly household income in the urban areas was MNT 1.1 million per household, but which was MNT 0.896 million in 2017¹⁸. It means that monthly rural household income is 24.2% lower than the urban households.

There can be several reasons of diminishing interest of livestock herding among young generation. For instance, Parent herders do not want their kids to be herders because parents perceive that pastoral livestock herding is hard job. For that reason, the parents send their children to the urban areas, and let the kids to choose non-livestock related majors. Therefore, teenagers think that the herding livestock is not the modern lifestyle, hence living in the countryside as a herder has disadvantage of getting away from social and cultural environment in current world. This is due to the fact that social system, development of rural areas is less, income and livelihood level of livestock herders is low.

New phenomenon identified quite recently is that there are more and more young men in the rural areas, but fewer and fewer girls to get marry with them. This is explained that herders prefer paying more attention to their girls' education than the boys, rather prefer succeeding their herding by the boys. A study concluded that about 60% of the school dropped children in age of 8-15 was boys who are from poor and herder families in 2009¹⁹.

7. Social, economic, and educational issues of the herders

Even the number of livestock has been increased rapidly, most of the livestock is owned by very few number of people. For instance, herder households who own less than 200 heads of

¹⁶ G.Ganzorig, 2016, Doctor Degree dissertation

¹⁷ Calculations based on data of NSO (2001, 2017) Statistical Yearbook of Mongolia-2000 and 2016

¹⁸ http://www.1212.mn/BookLibraryDownload.ashx?url=HSES_tan_2017_4q.pdf&In=Mn

¹⁹ Steiner Hasmi, Hita, Gerelmaa Amgaabazar (2009) "Quality of Mongolian educational sector and equality", "Challenges and success of quality and equality-Case study" pp. 409-414, UNESCO https://www.eda.admin.ch/dam/countries/countries-content/mongolia/en/2015-Gender-Overview-%20Desk-Study-Mongolia_MN.pdf

livestock shared about 43% of total number of herder households, but their number of livestock only share about 12% of total number of livestock in Mongolia, in 2016 (did not account the number of livestock owned by other households who own livestock)²⁰.

Poverty rate in rural areas was 26.4% in 2014, but it is increased to 39.4% in 2016; and rural poverty rate has always been higher than the urban poverty rate²¹. In 2016, about 67.2% of the rural population have livestock, and of them 33.4% are poor²². In 2015, 9.7% of the herders paid their social insurance, but it was increased to 19% in 2016²³.

In 2016, the payment rate of social insurance was increase for herders, which is may be the results of the campaigns organized by health and social insurance government organizations, and government decision to lower the pension age of herders. However, payment rate of social insurance is much lower than the people who work in other sector. Even the pension they receive on hand is about MNT 258.2 thousand, which is comparatively lower because most of the herders do not pay the social insurance, and even if they do they pay much less²⁴.

One of the main challenges to herders' social security is the lack of cash. In order to increase their cash income by selling the cashmere, herders tend to increase number of goats more than the other livestock types, which results in pastureland degradation to get worse. When herders need cash, they lend money from the local banks with high interest rate, which is paid back once most of the cash income earned from selling cashmere in spring and meat in autumn. Because herders lack with cash, they cannot pay their monthly social insurance, then that lead to have low amount of pension once they get old.

Working condition of herders is dependent on natural and climatic situations and harshness, hence average life expectancy of the herders is lower than the urban people²⁵. The main diseases for herders are diseases of stomach, liver and gastric. In 2010, 12.7% of the children living in urban areas had Kids growth delay, but it was 20.3% in rural areas²⁶. Also, 40% of the cases of mother death during baby delivery was occurred in remote countryside among herder women in 2008²⁷. This, partially, can be explained that about 67% of the rural population live 50-80 Km far from the hospitals at *soum* centers²⁸.

²⁰ Calculations based on data of NSO (2017) Statistical Yearbook of Mongolia-2016

²¹ NSO (2017) Poverty-2016 (Result of household socio-economic survey-2016)

²² NSO (2017) Poverty-2016 (Result of household socio-economic survey-2016)

²³ http://www.1212.mn/BookLibraryDownload.ashx?url=social_welfare_2016.pdf&ln=Mn

²⁴ <http://erennews.mn/index.php?view=article&type=item&val=4630>

²⁵ <http://www.parliament.mn/n/5epo>

²⁶ http://www.1212.mn/tables.aspx?tbl_id=DT_NSQ_2800_067V1&Poverty_60_select_all=0&Poverty_60SingleSelect=_1_2&YearY_select_all=0&YearYSingleSelect=_2010_2000&viewtype=table

²⁷ https://www.unicef.org/mongolia/Mongolian_version_of_SITAN.pdf

²⁸ https://www.unicef.org/mongolia/Mongolian_version_of_SITAN.pdf

In 2013, 30.9% of people living in rural areas were educated higher than secondary school, but it is 62.5% in cities²⁹. This statistics shows that education level among rural population is lower than the people living in urban areas.

²⁹ NSO (2014) Mongolia: Census of social indicators – 2013, <http://www.ulaantuuz.mn/wp-content/uploads/2016/05/SISS2013.pdf>