Country report

supporting the preparation of *The Second Report on the State of the World's Animal Genetic Resources for Food and Agriculture*, including sector-specific data contributing to *The State of the World's Biodiversity for Food and Agriculture* - 2013 -

Country: Kazakhstan

I. EXECUTIVE SUMMARY

Please provide an executive summary (not more than two pages) that will allow national and international stakeholders to gain a quick overview of the content of the country report.
The executive summary should contain information on:

- key trends and driving forces affecting animal genetic resources management in your country;
- strengths, weaknesses and gaps in capacity to manage animal genetic resources in your country;
- key constraints and challenges with respect to animal genetic resources management in your country;
- priorities and strategic directions for future action (focusing particularly on the next ten years).

Republic of Kazakhstan has very rich diversity of AnGR. It is rich with species based on definite breeds and pure breeds themselves.

Today, Kazakhstan has bred 17 breeds of cattle, 20 sheep breeds, 4 breeds of goats, 12 breeds of horses, 3 breeds of camels, 5 breeds of pigs and 12 breeds of farm birds.

It should be noted that from 1991 to 2000, during the formation of the economy of Kazakhstan as an independent state, the number of livestock related to genetic resources decreased almost twice. But since 2000 there has been steady growth of about 1% per year for all types of farm animals, also increasing their productivity.

The total number of cattle is 5.7 million, sheep and goats are more than 18.5 million, 1.6 million horses, 0.17 million camels, 1.3 million pigs and 34.0 million birds.

The main reason for increase of the number of genetic resources is that rural people understood that they can make high profits in this type of business and also due to the support from the government in the form of subsidies. This also contributes to population growth with an intense increase in food consumption of animal production.

Besides, there should be mentioned the significant pasture territories of Kazakhstan - 187 mln ha, almost 42% of which is being used effectively.

A significant proportion of livestock products are produced in private farms that leads to the loss of productivity and does not allow for the growing needs of the domestic market and as a consequence - leads to high production costs, reduced competitiveness and dependence on imports. Major producers of all kinds of meat are private households, which contains 82.4% of cattle, 70.2% of sheep and goats, 78.6% of pigs, 72% of horses and 47.6% of poultry. Indicators of productivity of agricultural animal concede at times.

Major causes of low productivity of Livestock in Kazakhstan are low proportion of breeding livestock (e.g. cattle beef - no more than 2.5%), lack of high-quality forage, and inadequate conditions of detention. Due to the fact that most of the livestock focused in households, the livestock industry has such characteristics as low genetic potential of animals and associated low productivity, lack of use of modern methods of feeding and other technologies that ensure efficiency and quality of products, lack of care of animal health. Also, the potential of natural pastures is not used, due to the unavailability of sources of drinking water for animals.

At the present time, The Agricultural Ministry of Republic of Kazakhstan is working on the improvement of animal genetic resources management. In particular the number of cattle and sheep in the country is increasing by subsidizing the breeding stock. In providing breeding there are introduced principles of selection and breeding work at the country level with developed animal husbandry. In particular, there are various breed associations at the legislative level up for cattle and sheep in Kazakhstan. Program is being implemented to improve the genetic characteristics of local non-tribal cattle both as domestic as foreign selection.

Nowadays livestock is expanding in organized agricultural farms. It is reducing the number of livestock in private households and raise breeding values of the cattle generally in the whole country.

Republic plans to create clearly established system to manage all genetic resources, taking into account the experience of countries with highly developed livestock. Particularly, it is planned to create associations for all types of animal breed, implantation of driving methods on assessment of genetic values, creating of favorable factors for feeding and developing of breeding animal and poultry. Thus, targeted genetic resources management plans to increase the proportion of breeding cattle population to 15-18%, sheep and goats and to 30%, horses to 10% and camels to 15%, pigs to 20%, poultry to 25%.

Besides, together with the development of animal genetic resources management, it is planned to establish programs for the conservation of endangered and indigenous breeds and species of animals by encouraging various non-governmental organizations, including international.

II. DATA FOR UPDATING THE PARTS AND SECTIONS OF *THE STATE OF THE WORLD'S ANIMAL GENETIC RESOURCES FOR FOOD AND AGRICULTURE*

FLOWS OF ANIMAL GENETIC RESOURCES

1. Studies of gene flow in animal genetic resources have generally concluded that most gene flow occurs either between developed countries or from developed countries to developing countries. Does this correspond to the pattern of gene flow into and out of your country?

For developed countries, exceptions to the usual pattern would include significant imports of genetic resources from developing countries. For developing countries, exceptions would include significant exports of genetic resources to developed countries, and/or significant imports and/or exports of genetic resources to/from other developing countries.

- (●) yes
- ( ) no
- ( ) yes but with some significant exceptions

1.1. If you answer “no” or “yes but with some significant exceptions”, please provide further details. Please include information on: which species are exceptions and which regions of the world are the sources and/or destinations of the respective genetic material.

2. Have there been any significant changes in patterns of geneflow in and out of your country in the last ten years?

- (●) yes
- ( ) no

2.1. If yes, please indicate whether this view is based on quantified data (e.g. import and export statistics collected by the government).

- (•) yes
- ( ) no

2.2. If yes, please provide references (preferably including web links) (if relevant, indicate which types of animal genetic resources are covered).

2.3. Please also describe the changes, indicating the species involved, the direction of the changes, and the regions of the world to and from which the patterns of imports and exports have changed.

3. Please describe how the patterns of geneflow described under Questions 1 and 2 affect animal genetic resources and their management in your country.

Note: Please answer this question even if the pattern of geneflow into and out of your country corresponds to the "usual" pattern described in the first sentence of Question 1 and/or has not changed significantly in the last ten years.

Purchase of valuable genetic material of cattle, sheep, pig, horse and poultry influence the productivity and genetic value of all country breeds. It allows to improve and create new genotypes of animals. Intensive import of specialised breed and sperm and embryos make an upgrowing influence on the statement of genetic resources management. Taking into account the fact that Kazakhstan mainly imports the broodstock, it will allow to increase the proportion of breed, and will positively affect the productivity of country breed in general.

LIVESTOCK SECTOR TRENDS

4. Please indicate the extent to which the following trends or drivers of change have affected or are predicted to affect animal genetic resources and their management in your country and describe these effects.

Note: Relevant impacts on animal genetic resources and their management might include, for example, changes in the type of animal genetic resources kept (e.g. different breeds or species), changes in the uses to which animal genetic resources are put, changes in the geographical distribution of different types of animal genetic resources, increases or decreases in the number of breeds at risk of extinction, changes in the objectives of breeding programmes, changes in the number or type of conservation programmes being implemented, etc. In the text sections, please briefly describe the changes. If possible, provide some concrete examples of the challenges or opportunities presented by the respective drivers and the actions taken to address these challenges or opportunities. If relevant, you may also indicate why a given driver is not affecting animal genetic resources and their management in your country. For a general discussion of drivers of change, please see The State of the World's Animal Genetic Resources for Food and Agriculture (Part 2, Section A) (http://www.fao.org/docrep/010/a1250e/a1250e00.htm).

Drivers of change	Impact on animal genetic resources and their management over last ten years	Future impact on animal genetic resources and their management (predicted for the next ten years)	Describe the effects on animal genetic resources and their management
Changing demand for livestock products (quantity)	high	high	Application in the selection of high pedigree animals whose production meet quality standards, will reduce the cost and increase the demand for its products.
Changing demand for livestock products (quality)	high	high	Demand for qualitative products derived from genetically superior animals will increase.

Drivers of change	Impact on animal genetic resources and their management over last ten years	Future impact on animal genetic resources and their management (predicted for the next ten years)	Describe the effects on animal genetic resources and their management
Changes in marketing infrastructure and access	medium	high	The share of domestic agriculture products will increase, the export will increase too.
Changes in retailing	medium	medium	In the inner market the needs for the products of different quality will depend on the financial availability of the costumer. Realization of products in packaged and processed form through the supermarkets will increase.
Changes in international trade in animal products (imports)	high	medium	The import of agricultural products will decrease.
Changes in international trade in animal products (exports)	low	high	The export of agricultural products will increase.
Climatic changes	none	none	The climate will not influence the genetic improvement of agricultural animal and poultry.
Degradation or improvement of grazing land	low	medium	Watering and improvement of pastures for genetically improved cattle.
Loss of, or loss of access to, grazing land and other natural resources	low	medium	The law-normative base in the use of pastures and feeding resources is needed.
Economic, livelihood or lifestyle factors affecting the popularity of livestock keeping	low	medium	Increase employment of suburban people.
Replacement of livestock functions	medium	medium	Genetic improvement of agricultural animals does not influence significantly the substitution functions of domestic cattle.
Changing cultural roles of livestock	low	medium	The role of domestic cattle will increase in organizing of cultural actions.
Changes in technology	low	high	The breeding of genetically improved cattle will cause the transfer of new technologies.
Policy factors	low	medium	Increased employment of suburban people in the agricultural sector will influence on the demographic group of urban people.
Disease epidemics	medium	low	Import of animals will change the veterinarian-sanitarian background.

OVERVIEW OF ANIMAL GENETIC RESOURCES

5. Please provide the number of locally adapted and exotic breeds kept in your country.

Data on the number of breeds is needed in order to calculate the percentage of breeds subject to the various management activities that are covered in this questionnaire. In line with the request of the Commission on Genetic Resources for Food and Agriculture at its Fourteenth Regular Session (CGRFA-14/13/Report, paragraph 31), FAO will implement the "locally adapted" vs. "exotic breed" classification system in the Domestic Animal Diversity Information System (DAD-IS). Once countries have fully updated their breed lists and classified all breeds in DAD-IS, it will be possible to use these data to obtain the numbers of breeds in each category.

Species	Locally adapted breeds	Exotic breeds
Cattle (specialized dairy)	4	2
Cattle (specialized beef)	5	7

Species	Locally adapted breeds	Exotic breeds
Cattle (multipurpose)	2	2
Sheep	16	3
Goats	3	1
Pigs	5	2
Chickens	0	12
Horses	4	8
Bactrian camels	2	1
Ducks	2	0
Geese	0	3

CHARACTERIZATION

To provide further details of your country's activities in the field of characterization, surveying and monitoring, please go to Strategic Priority Area 1 of the "Progress report on the implementation of the Global Plan of Action for Animal Genetic Resources 2007–2013" (below).

6. Please provide an overview of the current state of characterization in your country by indicating the extent to which the activities shown in the following table have been carried out.

Note: Please focus on characterization studies that have been conducted within the last ten years (baseline surveys of population size may have been conducted in the more distant past). Recall that some types of characterization study on your country's breeds may have been conducted outside your country. For the first two columns, please insert the number of breeds; for columns 3 to 8 please choose one of the following categories: none; low (approximately <33%); medium (approximately 33–67%); high (approximately >67%).

Species	Baseline survey of population size	Regular monitoring of population size	Phenotypic characterization	Molecular genetic diversity studies – within breed	Genetic diversity studies based on pedigree	Molecular genetic diversity studies – between breed	Genetic variance component estimation	Molecular genetic evaluation
Cattle (specialized dairy)	6	4	medium	low	medium	low	low	low
Cattle (specialized beef)	12	5	medium	low	medium	low	low	low
Cattle (multipurpose)	4	2	medium	low	medium	low	low	low
Sheep	19	16	medium	low	medium	low	low	low
Goats	4	3	medium	low	medium	low	low	low
Pigs	7	4	medium	low	medium	low	low	low
Chickens	12	0	medium	low	medium	low	low	low

Species	Baseline survey of population size	Regular monitoring of population size	Phenotypic characterization	Molecular genetic diversity studies – within breed	Genetic diversity studies based on pedigree	Molecular genetic diversity studies – between breed	Genetic variance component estimation	Molecular genetic evaluation
Horses	12	4	medium	low	medium	low	low	low
Bactrian camels	3	2	medium	low	medium	low	low	low
Ducks	2	2	medium	low	medium	low	low	low
Geese	3	0	medium	low	medium	low	low	low

INSTITUTIONS AND STAKEHOLDERS

To provide further details of your country's activities in the field of institutions and stakeholders, please go to Strategic Priority Area 4 of the "Progress report on the implementation of the Global Plan of Action for Animal Genetic Resources 2007–2013" (below).

7. Please indicate the state of your country's capacities and provisions in the following areas of animal genetic resources management.

	Score
Education	medium
Research	medium
Knowledge	medium
Awareness	medium
Infrastructure	low
Stakeholder participation	medium
Policies	medium
Policy implementation	medium
Laws	medium
Implementation of laws	high

8. Please provide further information regarding your country's capacities in each of the above-mentioned areas of management. If relevant, please indicate what obstacles or constraints your country faces in each of these areas and what needs to be done to address these constraints. You may also provide information on any particular successes achieved in your country in any of these areas and on the reasons for these successes.

	Description
Education	To enter the educational process discipline connected with the management of genetic resources, to organize appropriate seminars, courses, trainings etc.
Research	In arranging governmental programmes provide themes connected with the AnGR management, conservation and development of genetic diversity.
Knowledge	Organization of the system of knowledge distribution and practice abroad.
Awareness	Analyse similar projects and programs.
Infrastructure	To create offices, laboratories within institutes and private organizations.
Stakeholder participation	Joint research with scientists abroad.
Policies	Development of additional normative-legal documentation.
Policy implementation	Introduction of developments and results, got in the process of implementation into the agricultural practice.
Laws	Confirmation of appropriate legal acts.
Implementation of laws	Introduction of the system of control on the implementation of regulatory-legal acts.

9. What steps have been taken in your country to engage or empower the various stakeholders in animal genetic resources management (e.g. establishment of livestock keepers' organizations, development of biocultural community protocols)?

Note: Biocultural community protocol: a document that is developed after a community undertakes a consultative process to outline their core cultural and spiritual values and customary laws relating to their traditional knowledge and resources. For a discussion of the potential role of biocultural community protocols in the conservation of animal genetic resources, please see the guidelines In vivo conservation of animal genetic resources (http://www.fao.org/docrep/018/i3327e/i3327e.pdf).

To engage stakeholders to participate in the management of animal genetic resources in Kazakhstan in recent years under the auspices of the Ministry of Agriculture passes the formation of the unified state register base of breeding animals begins functioning associations of breeds.

BREEDING PROGRAMMES

Note: Breeding programmes: systematic and structured programmes for changing the genetic composition of a population towards a defined breeding goal (objective) to realize genetic gain (response to selection), based on objective performance criteria. Breeding programmes typically contain the following elements: definition of breeding goal; identification of animals; performance testing; estimation of breeding values; selection; mating; genetic gain and transfer of genetic gain. Breeding programmes are usually operated either by a group of livestock breeders organized in a breeders' association, community-based entity or other collective body; by a large commercial breeding company; or by the government.

To provide further details of your country's activities in the field of breeding programmes, please go to Strategic Priority Area 2 of the "Progress report on the implementation of the Global Plan of Action for Animal Genetic Resources 2007–2013" (below).

10. Who operates breeding programmes in your country?

Note: the objective of this question is to identify which stakeholders lead or organize the breeding programmes that exist in your country. Stakeholder participation in the implementation of the various elements of breeding programmes is covered under Question 15. If you wish to provide further information on the activities of the various stakeholder groups (including collaborative activities on an international scale), please provide it in the text section of Question 15.

Species	Government	Livestock keepers organized at community level	Breeders' associations or cooperatives	National commercial companies	External commercial companies	Non-governmental organizations	Others
Cattle (specialized dairy)	yes	yes	yes	yes	yes	yes	no
Cattle (specialized beef)	yes	yes	yes	yes	yes	yes	no
Cattle (multipurpose)	yes	yes	yes	yes	yes	yes	no
Sheep	yes	yes	yes	yes	yes	yes	no
Goats	yes	yes	yes	yes	yes	yes	no
Pigs	yes	yes	yes	yes	yes	yes	no
Chickens	yes	yes	yes	yes	yes	yes	no
Horses	yes	yes	yes	yes	yes	yes	no
Bactrian camels	yes	yes	yes	yes	yes	yes	no
Ducks	yes	yes	yes	yes	yes	yes	no
Geese	yes	yes	yes	yes	yes	yes	no

10.1. If you choose the option "others", please indicate what kind of operator(s) this refers to.

none

11. For how many breeds in your country are the following activities undertaken?

Note: Please do not include activities that are only undertaken for experimental purposes, i.e. include only activities that directly serve or involve livestock keepers. However, please include activities even if they do not at present form part of a breeding programme. The intention is to obtain an indication of whether the "building blocks" of a breeding programme are available or being developed in your country. Loc = Locally adapted breeds; Ex = Exotic breeds.

Species	Tools															
	Animal identification		Breeding goal defined		Performance recording		Pedigree recording		Genetic evaluation (classic approach)		Genetic evaluation including genomic information		Management of genetic variation (by maximizing effective population size or minimizing rate of inbreeding)		Artificial insemination	
	Loc	Ex	Loc	Ex	Loc	Ex	Loc	Ex	Loc	Ex	Loc	Ex	Loc	Ex	Loc	Ex
Cattle (specialized dairy)	4	2	4	2	4	2	4	2	4	2	0	0	0	0	4	2
Cattle (specialized beef)	5	7	5	7	5	7	5	7	5	7	0	0	0	0	5	7
Cattle (multipurpose)	2	2	2	2	2	2	2	2	2	2	0	0	0	0	2	2
Sheep	16	3	16	3	16	3	16	3	16	3	0	0	0	0	16	3
Goats	3	1	3	1	3	1	3	1	3	1	0	0	0	0	3	1
Pigs	5	2	5	2	5	2	5	2	5	2	0	0	0	0	5	2
Chickens	0	12	0	12	0	12	0	12	0	12	0	0	0	0	0	12
Horses	4	8	4	8	4	8	4	8	4	8	0	0	0	0	4	8
Bactrian camels	2	1	2	1	2	1	2	1	2	1	0	0	0	0	2	1
Ducks	2	0	2	0	2	0	2	0	2	0	0	0	0	0	2	0
Geese	0	3	0	3	0	3	0	3	0	3	0	0	0	0	0	3

12. Please indicate how many of the breeds in your country are subject to breeding programmes applying the following breeding methods.

Note: Loc = Locally adapted breeds; Ex = Exotic breeds.

Species	Breeding method			
	Straight/pure-breeding only		Straight/pure-breeding and cross-breeding	
	Loc	Ex	Loc	Ex
Cattle (specialized dairy)	4	2	4	2
Cattle (specialized beef)	5	7	5	7
Cattle (multipurpose)	2	2	2	2
Sheep	16	3	16	3
Goats	3	1	3	1
Pigs	5	2	5	2
Chickens	0	12	0	12
Horses	4	8	4	8
Bactrian camels	2	1	2	1
Ducks	2	0	2	0
Geese	0	3	0	3

13. Please indicate the state of research and training in the field of animal breeding in your country.

Species	Training	Research
Cattle (specialized dairy)	medium	medium
Cattle (specialized beef)	medium	medium
Cattle (multipurpose)	medium	medium
Sheep	medium	medium
Goats	medium	medium
Pigs	medium	medium
Chickens	medium	medium
Horses	medium	medium
Bactrian camels	medium	medium
Ducks	medium	medium
Geese	medium	medium

14. Please indicate the extent to which livestock keepers in your country are organized for the purposes of animal breeding.

Species	Organization of livestock keepers
Cattle (specialized dairy)	low
Cattle (specialized beef)	low
Cattle (multipurpose)	low
Sheep	low
Goats	low
Pigs	low
Chickens	low

Species	Organization of livestock keepers
Horses	low
Bactrian camels	low
Ducks	low
Geese	low

15. Please indicate the level of stakeholder involvement in the various elements of breeding programmes in your country.

Note: If your country has different types of breeding programme, the level of involvement of the various stakeholders may vary from one type of programme to another. In answering this question please try to indicate the overall degree of involvement of the various stakeholder groups.

Cattle (specialized dairy)	Government	Research organizations	Breeders' associations or cooperatives	Individual breeders/livestock keepers	National commercial companies	External commercial companies	Non-governmental organizations	Others
Setting breeding goals	medium	high	high	low	medium	high	none	none
Animal identification	high	medium	medium	low	medium	medium	none	none
Recording	high	medium	medium	low	medium	medium	none	none
Provision of artificial insemination services	medium	medium	high	low	medium	high	none	none
Genetic evaluation	medium	high	medium	low	none	medium	none	none

Cattle (specialized beef)	Government	Research organizations	Breeders' associations or cooperatives	Individual breeders/livestock keepers	National commercial companies	External commercial companies	Non-governmental organizations	Others
Setting breeding goals	medium	high	high	low	medium	high	none	none
Animal identification	high	medium	medium	low	medium	medium	none	none
Recording	high	medium	medium	low	medium	medium	none	none
Provision of artificial insemination services	medium	medium	high	low	medium	high	none	none
Genetic evaluation	medium	high	medium	low	none	medium	none	none

Cattle (multipurpose)	Government	Research organizations	Breeders' associations or cooperatives	Individual breeders/livestock keepers	National commercial companies	External commercial companies	Non-governmental organizations	Others
Setting breeding goals	medium	high	high	low	medium	high	none	none
Animal identification	high	medium	medium	low	medium	medium	none	none
Recording	high	medium	medium	low	medium	medium	none	none
Provision of artificial insemination services	medium	medium	high	low	medium	high	none	none
Genetic evaluation	medium	high	medium	low	none	medium	none	none

Sheep	Government	Research organizations	Breeders' associations or cooperatives	Individual breeders/livestock keepers	National commercial companies	External commercial companies	Non-governmental organizations	Others
Setting breeding goals	medium	high	high	low	medium	high	none	none
Animal identification	high	medium	medium	low	medium	medium	none	none
Recording	high	medium	medium	low	medium	medium	none	none
Provision of artificial insemination services	medium	medium	high	low	medium	high	none	none
Genetic evaluation	medium	high	medium	low	none	medium	none	none

Goats	Government	Research organizations	Breeders' associations or cooperatives	Individual breeders/livestock keepers	National commercial companies	External commercial companies	Non-governmental organizations	Others
Setting breeding goals	medium	high	high	low	medium	high	none	none
Animal identification	high	medium	medium	low	medium	medium	none	none
Recording	high	medium	medium	low	medium	medium	none	none
Provision of artificial insemination services	medium	medium	high	low	medium	high	none	none
Genetic evaluation	medium	high	medium	low	none	medium	none	none

Pigs	Government	Research organizations	Breeders' associations or cooperatives	Individual breeders/livestock keepers	National commercial companies	External commercial companies	Non-governmental organizations	Others
Setting breeding goals	medium	high	high	low	medium	high	none	none
Animal identification	high	medium	medium	low	medium	medium	none	none
Recording	high	medium	medium	low	medium	medium	none	none
Provision of artificial insemination services	medium	medium	high	low	medium	high	none	none
Genetic evaluation	medium	high	medium	low	none	medium	none	none

Chickens	Government	Research organizations	Breeders' associations or cooperatives	Individual breeders/livestock keepers	National commercial companies	External commercial companies	Non-governmental organizations	Others
Setting breeding goals	medium	high	high	low	medium	high	none	none
Animal identification	high	medium	medium	low	medium	medium	none	none
Recording	high	medium	medium	low	medium	medium	none	none
Provision of artificial insemination services	medium	medium	high	low	medium	high	none	none
Genetic evaluation	medium	high	medium	low	none	medium	none	none

Horses	Government	Research organizations	Breeders' associations or cooperatives	Individual breeders/livestock keepers	National commercial companies	External commercial companies	Non-governmental organizations	Others
Setting breeding goals	medium	high	high	low	medium	high	none	none
Animal identification	high	medium	medium	low	medium	medium	none	none
Recording	high	medium	medium	low	medium	medium	none	none
Provision of artificial insemination services	medium	medium	high	low	medium	high	none	none
Genetic evaluation	medium	high	medium	low	none	medium	none	none

Bactrian camels	Government	Research organizations	Breeders' associations or cooperatives	Individual breeders/livestock keepers	National commercial companies	External commercial companies	Non-governmental organizations	Others
Setting breeding goals	medium	high	high	low	medium	high	none	none
Animal identification	high	medium	medium	low	medium	medium	none	none
Recording	high	medium	medium	low	medium	medium	none	none
Provision of artificial insemination services	medium	medium	high	low	medium	high	none	none
Genetic evaluation	medium	high	medium	low	none	medium	none	none

Ducks	Government	Research organizations	Breeders' associations or cooperatives	Individual breeders/livestock keepers	National commercial companies	External commercial companies	Non-governmental organizations	Others
Setting breeding goals	medium	high	high	low	medium	high	none	none
Animal identification	high	medium	medium	low	medium	medium	none	none
Recording	high	medium	medium	low	medium	medium	none	none
Provision of artificial insemination services	medium	medium	high	low	medium	high	none	none
Genetic evaluation	medium	high	medium	low	none	medium	none	none

Geese	Government	Research organizations	Breeders' associations or cooperatives	Individual breeders/livestock keepers	National commercial companies	External commercial companies	Non-governmental organizations	Others
Setting breeding goals	medium	high	high	low	medium	high	none	none
Animal identification	high	medium	medium	low	medium	medium	none	none
Recording	high	medium	medium	low	medium	medium	none	none
Provision of artificial insemination services	medium	medium	high	low	medium	high	none	none
Genetic evaluation	medium	high	medium	low	none	medium	none	none

15.1. If you choose the option "others", please indicate what kind of operator(s) this refers to.

none

15.2. Please provide further information on the roles that the stakeholders identified in the table play in the implementation of the various activities. If relevant, please also provide further information on the organizational roles played by the stakeholders identified in Question 10.

The government of the Republic of Kazakhstan has an administrative and financial resources for supporting and sponsoring all the selection programs. Research organizations carry scientific researches defined by the Agricultural Ministry of the Republic of Kazakhstan on the base of which all the methods and instructions, recommendations are worked out. On the base of Breeders' associations and cooperatives there are carried researches, approbied new selection programmes and technologies. Individual breeders are busy with creating of private selective methods, plans of selective breeding work. National commercial companies are financing and importing selective material (import breeds from other countries).

16. Does your country implement any policies or programmes aimed at supporting breeding programmes or influencing their objectives?

Species	Policies or programmes
Cattle (specialized dairy)	yes
Cattle (specialized beef)	yes
Cattle (multipurpose)	yes
Sheep	yes
Goats	yes
Pigs	yes
Chickens	yes
Horses	yes
Bactrian camels	yes
Ducks	yes
Geese	yes

16.1. Please describe these policies or programmes, indicating whether or not they include any measures specifically aimed at supporting breeding programmes for locally adapted breeds or any measures specifically aimed at supporting breeding programmes for exotic breeds (including breed-replacement programmes). Please indicate whether different types of programme are promoted in different production systems (and describe the differences).

Species	Description of policies or programmes
Cattle (specialized dairy)	Agro-Business 2020, master-plans on developing industries 2020
Cattle (specialized beef)	Agro-Business 2020, master-plans on developing industries 2020, developing export potential of the beef
Cattle (multipurpose)	Agro-Business 2020, master-plans on developing industries 2020
Sheep	Agro-Business 2020, master-plans on developing industries 2020
Goats	Agro-Business 2020, master-plans on developing industries 2020
Pigs	Agro-Business 2020, master-plans on developing industries 2020
Chickens	Agro-Business 2020, master-plans on developing industries 2020
Horses	Agro-Business 2020, master-plans on developing industries 2020
Bactrian camels	Agro-Business 2020, master-plans on developing industries 2020
Ducks	Agro-Business 2020, master-plans on developing industries 2020
Geese	Agro-Business 2020, master-plans on developing industries 2020

17. Please describe the consequences of your country's breeding policies and programmes, or lack of breeding policies and programmes, for your country's animal genetic resources and their management.

Species	Description of consequences
Cattle (specialized dairy)	Agribusiness strategy would increase the productivity of livestock and agricultural animals and birds, as well as measures to support industries in the financial and organizational plans. The strategy also envisages the development of exotic species, the implementation of various programs under production conditions.
Cattle (specialized beef)	Agribusiness strategy would increase the productivity of livestock and agricultural animals and birds, as well as measures to support industries in the financial and organizational plans. The strategy also envisages the development of exotic species, the implementation of various programs under production conditions.
Cattle (multipurpose)	Agribusiness strategy would increase the productivity of livestock and agricultural animals and birds, as well as measures to support industries in the financial and organizational plans. The strategy also envisages the development of exotic species, the implementation of various programs under production conditions.
Sheep	Agribusiness strategy would increase the productivity of livestock and agricultural animals and birds, as well as measures to support industries in the financial and organizational plans. The strategy also envisages the development of exotic species, the implementation of various programs under production conditions.
Goats	Agribusiness strategy would increase the productivity of livestock and agricultural animals and birds, as well as measures to support industries in the financial and organizational plans. The strategy also envisages the development of exotic species, the implementation of various programs under production conditions.
Pigs	Agribusiness strategy would increase the productivity of livestock and agricultural animals and birds, as well as measures to support industries in the financial and organizational plans. The strategy also envisages the development of exotic species, the implementation of various programs under production conditions.
Chickens	Agribusiness strategy would increase the productivity of livestock and agricultural animals and birds, as well as measures to support industries in the financial and organizational plans. The strategy also envisages the development of exotic species, the implementation of various programs under production conditions.
Ducks	Agribusiness strategy would increase the productivity of livestock and agricultural animals and birds, as well as measures to support industries in the financial and organizational plans. The strategy also envisages the development of exotic species, the implementation of various programs under production conditions.
Geese	Agribusiness strategy would increase the productivity of livestock and agricultural animals and birds, as well as measures to support industries in the financial and organizational plans. The strategy also envisages the development of exotic species, the implementation of various programs under production conditions.

18. Please describe the main constraints to the implementation of breeding programmes in your country and what needs to be done to address these constraints. You may also provide information on any particular successes achieved in your country with respect to the establishment and operation of breeding programmes and on the factors that have contributed to these successes.

Major constraints for the implementation of breeding programs are:

1. concentration of the main herd in private farms, which does not allow to maintain the proper level of agricultural animal breeding
2. unwillingness of the majority of farmers to conduct breeding work on breeding plan (especially private farms)
3. insufficient coverage of registration of animals in the national database, lack of stimulating factors
4. lack of well-organized system of delivery of genetic material to import. insufficient coverage of pedigree herds in artificial insemination
5. main limitations of implementing breeding programs in Kazakhstan: lack of a unified state program on identification of breeding animals. In recent years it has been established within the framework of a program created by associations:

needs to be studied and applied in a common plan practice of agricultural zoning breed animals. The most important limitation is the lack of breeding programs themselves.

19. Please describe future objectives, priorities and plans for the establishment or further development of breeding programmes in your country.

Species	Description of future objectives, priorities and plans
Cattle (specialized dairy)	Works on the concentration of the main herd in the large collective farms, which will lead to the proper level of selection work. Government support for large collective farms. Organization of well-organized system for the use of imported genetic material. Maximum coverage of breeding herd with artificial insemination. Development and implementation of clearly established system of tribal security by industry.
Cattle (specialized beef)	Works on the concentration of the main herd in the large collective farms, which will lead to the proper level of selection work. Government support for large collective farms. Organization of well-organized system for the use of imported genetic material. Maximum coverage of breeding herd with artificial insemination. Development and implementation of clearly established system of tribal security by industry.
Cattle (multipurpose)	Works on the concentration of the main herd in the large collective farms, which will lead to the proper level of selection work. Government support for large collective farms. Organization of well-organized system for the use of imported genetic material. Maximum coverage of breeding herd with artificial insemination. Development and implementation of clearly established system of tribal security by industry.
Sheep	Works on the concentration of the main herd in the large collective farms, which will lead to the proper level of selection work. Government support for large collective farms. Organization of well-organized system for the use of imported genetic material. Maximum coverage of breeding herd with artificial insemination. Development and implementation of clearly established system of tribal security by industry.
Goats	Works on the concentration of the main herd in the large collective farms, which will lead to the proper level of selection work. Government support for large collective farms. Organization of well-organized system for the use of imported genetic material. Maximum coverage of breeding herd with artificial insemination. Development and implementation of clearly established system of tribal security by industry.
Pigs	Works on the concentration of the main herd in the large collective farms, which will lead to the proper level of selection work. Government support for large collective farms. Organization of well-organized system for the use of imported genetic material. Maximum coverage of breeding herd with artificial insemination. Development and implementation of clearly established system of tribal security by industry.
Chickens	Works on the concentration of the main herd in the large collective farms, which will lead to the proper level of selection work. Government support for large collective farms. Organization of well-organized system for the use of imported genetic material. Maximum coverage of breeding herd with artificial insemination. Development and implementation of clearly established system of tribal security by industry.
Horses	Works on the concentration of the main herd in the large collective farms, which will lead to the proper level of selection work. Government support for large collective farms. Organization of well-organized system for the use of imported genetic material. Maximum coverage of breeding herd with artificial insemination. Development and implementation of clearly established system of tribal security by industry.
Bactrian camels	Works on the concentration of the main herd in the large collective farms, which will lead to the proper level of selection work. Government support for large collective farms. Organization of well-organized system for the use of imported genetic material. Maximum coverage of breeding herd with artificial insemination. Development and implementation of clearly established system of tribal security by industry.
Ducks	Works on the concentration of the main herd in the large collective farms, which will lead to the proper level of selection work. Government support for large collective farms. Organization of well-organized system for the use of imported genetic material. Maximum coverage of breeding herd with artificial insemination. Development and implementation of clearly established system of tribal security by industry.

Species	Description of future objectives, priorities and plans
Geese	Works on the concentration of the main herd in the large collective farms, which will lead to the proper level of selection work. Government support for large collective farms. Organization of well-organized system for the use of imported genetic material. Maximum coverage of breeding herd with artificial insemination. Development and implementation of clearly established system of tribal security by industry.

CONSERVATION

To provide further details of your country's activities in the field of conservation, please go to Strategic Priority Area 3 of the "Progress report on the implementation of the Global Plan of Action for Animal Genetic Resources 2007–2013" (below).

20. Please provide an indication of the extent to which your country's breeds are covered by conservation programmes.

Please focus on at-risk breeds and breeds for which there are serious grounds for concern about their potential to fall into the at-risk category in the near future. Countries should not reduce their scores because of a lack of conservation programmes for breeds that are clearly not at risk. The main purpose of this question is to obtain an indication of the extent to which your country's conservation programmes meet the objective of protecting breeds from extinction. If your country has no official national criteria for classifying breed risk status or lacks the relevant data for identifying which breeds are at risk, please base your answers on estimations. Please also note that Question 8 of the "Progress report on the implementation of the Global Plan of Action for Animal Genetic Resources – 2007 to 2013" (below) requests countries to provide information on the criteria they use to assess the risk status of animal genetic resources.

Note: n/a = no programmes implemented because all breeds of this species present in the country are secure.

Species	In situ conservation	Ex situ in vivo conservation	Ex situ in vitro conservation
Cattle (specialized dairy)	low	none	none
Cattle (specialized beef)	low	none	none
Cattle (multipurpose)	low	none	none
Sheep	low	none	none
Goats	low	none	none
Pigs	low	none	none
Chickens	low	none	none
Ducks	low	none	none
Geese	low	none	none

21. Does your country use formal approaches to prioritize breeds for conservation?

- (•) yes
- ( ) no

21.1. If so, which of the following factors are considered?

Note: See Sections 2 and 3 of the FAO guidelines In vivo conservation of animal genetic resources (http://www.fao.org/docrep/018/i3327e/i3327e.pdf).

	Considered in formal prioritization approaches
Risk of extinction	no
Genetic uniqueness	yes
Genetic variation within the breed	no
Production traits	yes
Non-production traits	yes

	Considered in formal prioritization approaches
Cultural or historical importance	no
Probability of success	yes

22. Please indicate which of the following methods are used as elements of in situ conservation programmes in your country and which operators are managing them.

Note: Operators: the sector(s) that initiate(s) and manage(s) the respective activities. If both sectors undertake the respective activity, please answer "yes" in both rows. Please answer "yes" if the respective sector only works with some of the species targeted. If necessary, details of which sector addresses which species can be provided in the textual response. Information on what kinds of public- or private-sector organizations undertake the activities can also be provided, if necessary, in the textual response. Species targeted: Please answer "yes" if there are any such activities targeting the respective species, whether they are undertaken by the public sector, private sector or both.

Operators / Species targeted	Promotion of niche marketing or other market differentiation	Community-based conservation programmes	Incentive or subsidy payment schemes for keeping at-risk breeds	Development of biocultural community protocols	Recognition/award programmes for breeders	Conservation breeding programmes	Selection programmes for increased production or productivity in at-risk breeds	Promotion of at-risk breeds as tourist attractions	Use of at-risk breeds in the management of wildlife habitats and landscapes	Promotion of breed-related cultural activities	Extension programmes to improve the management of at-risk breeds	Awareness-raising activities providing information on the potential of specific at-risk breeds
Public sector	no	no	no	no	no	no	no	no	no	no	no	no
Private sector	no	no	no	no	no	no	no	no	no	no	no	no
Cattle (specialized dairy)	no	no	no	no	no	no	no	no	no	no	no	no
Cattle (specialized beef)	no	no	no	no	no	no	no	no	no	no	no	no
Cattle (multipurpose)	no	no	no	no	no	no	no	no	no	no	no	no
Sheep	no	no	no	no	no	no	no	no	no	no	no	no
Goats	no	no	no	no	no	no	no	no	no	no	no	no
Pigs	no	no	no	no	no	no	no	no	no	no	no	no
Chickens	no	no	no	no	no	no	no	no	no	no	no	no
Ducks	no	no	no	no	no	no	no	no	no	no	no	no
Geese	no	no	no	no	no	no	no	no	no	no	no	no

22.1. Please provide further details of the activities recorded in the table and any other in situ conservation activities or programmes being implemented in your country.

none

23. Does your country have an operational in vitro gene bank for animal genetic resources?

In vitro gene bank: a collection of documented cryoconserved genetic material, primarily stored for the purpose of medium- to long-term conservation, with agreed protocols and procedures for acquisition and use of the genetic material.

- ○ yes
- ◉ no

23.1. If your country has no in vitro gene bank for animal genetic resources, does it have plans to develop one?

- ○ yes
- ◉ no

23.2. If yes, please describe the plans.

none

24. If your country has an in vitro gene bank for animal genetic resources, please indicate what kind of material is stored there.

	Stored in national genebank
Semen	no
Embryos	no
Oocytes	no
Somatic cells (tissue or cultured cells)	no
Isolated DNA	no

25. If your country has an in vitro gene bank for animal genetic resources, please complete the following table.

Species	Number of breeds for which material is stored	Number of breeds for which sufficient material is stored	Does the collection include material from not-at-risk breeds?	Have any extinct populations been reconstituted using material from the gene bank?	Have the gene bank collections been used to introduce genetic variability into an in situ population?	Have the gene bank collections been used to introduce genetic variability into an ex situ population?	Do livestock keepers or breeders' associations participate in the planning of the gene banking activities?
Cattle (specialized dairy)	0	0	no	no	no	no	no
Cattle (specialized beef)	0	0	no	no	no	no	no
Cattle (multipurpose)	0	0	no	no	no	no	no
Sheep	0	0	no	no	no	no	no
Goats	0	0	no	no	no	no	no
Pigs	0	0	no	no	no	no	no
Chickens	0	0	no	no	no	no	no
Ducks	0	0	no	no	no	no	no

Species	Number of breeds for which material is stored	Number of breeds for which sufficient material is stored	Does the collection include material from not-at-risk breeds?	Have any extinct populations been reconstituted using material from the gene bank?	Have the gene bank collections been used to introduce genetic variability into an in situ population?	Have the gene bank collections been used to introduce genetic variability into an ex situ population?	Do livestock keepers or breeders' associations participate in the planning of the gene banking activities?
Geese	0	0	no	no	no	no	no

25.1. Please provide further details of the activities recorded in the table (including any examples of the use of gene bank material to reconstitute populations or introduce genetic variability) and any other in vitro conservation activities or programmes being implemented in your country.

none

26. Does your country have plans to enter into collaboration with other countries to set up a regional or subregional in vitro gene bank for animal genetic resources?

- ○ yes
- ◉ no

26.1. If yes, please describe the plans, including a list of the countries involved.

none

27. If there have been any cases in your country in which breeds that were formerly classified as at risk of extinction have recovered to a position in which they are no longer at risk, please list the breeds and describe how the recovery was achieved.

none

REPRODUCTIVE AND MOLECULAR BIOTECHNOLOGIES

28. Please indicate the level of availability of reproductive and molecular biotechnologies for use in livestock production in your country.

Note: low = at experimental level only; medium = available to livestock keepers in some locations or production systems; high = widely available to livestock keepers.

Species	Biotechnologies								
	Artificial insemination	Embryo transfer	Multiple ovulation and embryo transfer	Semen sexing	In vitro fertilization	Cloning	Genetic modification	Molecular genetic or genomic information	Transplantation of gonadal tissue
Cattle (specialized dairy)	medium	medium	medium	medium	none	none	none	none	none
Cattle (specialized beef)	medium	medium	medium	medium	none	none	none	none	none
Cattle (multipurpose)	medium	medium	medium	medium	none	none	none	none	none
Sheep	high	high	high	high	none	none	none	none	none
Goats	none	none	none	none	none	none	none	none	none
Pigs	high	high	high	high	none	none	none	none	none
Chickens	none	none	none	none	none	none	none	none	none
Ducks	none	none	none	none	none	none	none	none	none
Geese	none	none	none	none	none	none	none	none	none

28.1. Please provide additional information on the use of these biotechnologies in your country.

Artificial insemination is used in sheep, swine, dairy cattle. All agricultural enterprises for these types of animals have 100% coverage of artificial insemination. In beefy cattle and horse breeding artificial insemination is not widely applied. Embryo transfer in limited quantities are used in dairy cattle to produce highly in terms of genetic individuals. In beefy cattle breeding embryo transfer is carried out for experimental purposes in the framework of government programs.

29. If the reproductive and/or molecular technologies are available for use by livestock keepers in your country, please indicate which stakeholders are involved in providing the respective services to the livestock keepers.

	Stakeholders					
	Public sector	Breeders' associations or cooperatives	National non-governmental organizations	Donors and development agencies	National commercial companies	External commercial companies
Artificial insemination	yes	yes	no	no	yes	yes
Embryo transfer	yes	yes	no	no	yes	yes

29.1. Please provide additional information on the roles that the providers identified in the table play in the provision of biotechnology services in your country.

Public service sector in Kazakhstan provides services for artificial insemination and embryo transfer. The same services provide 14 private companies and scientific organizations.

30. Please indicate which biotechnologies your country is undertaking research on.

Biotechnologies	Public or private research at national level	Research undertaken as part of international collaboration
Artificial insemination	yes	yes
Embryo transfer or MOET	yes	yes
Semen sexing	yes	yes
In vitro fertilization	yes	no
Cloning	no	no
Genetic modification	no	no
Use of molecular genetic or genomic information for estimation of genetic diversity	yes	yes
Use of molecular genetic or genomic information for prediction of breeding values	yes	yes
Research on adaptedness based on molecular genetic or genomic information	no	no

30.1. Please briefly describe the research.

Biotechnology research in the country are carried out within the framework of public research programs by research institutes.

31. Please estimate the extent to which artificial insemination (using semen from exotic and/or locally adapted breeds) and/or natural mating is used in your country's various production systems.

Note: low = approximately <33% of matings; medium = approximately 33–67% of matings; high = approximately >67% of mating; n/a = production system not present in this country.

Cattle (specialized dairy)	Ranching or similar grassland -based production systems	Pastoralist systems	Mixed farming systems (rural areas)	Industrial systems	Small-scale urban or peri-urban systems
Artificial insemination using semen from locally adapted breeds	medium	low	medium	medium	low
Artificial insemination using nationally produced semen from exotic breeds	medium	low	medium	medium	low
Artificial insemination using imported semen from exotic breeds	medium	low	medium	medium	low
Natural mating	medium	high	medium	medium	high

32. Please provide further details on the use of reproductive and molecular biotechnologies in animal genetic resources management in your country. Please note any particular constraints to implementing these activities and any problems associated with their use. Please indicate what needs to be done to address these constraints and/or problems. You may also provide information on any particular successes achieved in your country in the use of biotechnologies in animal genetic resources management and on the factors that have contributed to these successes.

At the present time in the Republic of Kazakhstan there are used biotechnological methods of reproducing through the way of embryo transfer and fixed semens. The main goal of the usage of such technology is to increase the specific weight of broodmare. But this process is going very slowly because of the lack of centralized breeding work. In this relation, it is necessary to organize centralized selection work.

III. DATA CONTRIBUTING TO THE PREPARATION OF *THE STATE OF THE WORLD'S BIODIVERSITY FOR FOOD AND AGRICULTURE*

INTEGRATION OF THE MANAGEMENT OF ANIMAL GENETIC RESOURCES WITH THE MANAGEMENT OF PLANT, FORESTRY AND AQUATIC GENETIC RESOURCES

1. Please indicate the extent to which the management of animal genetic resources in your country is integrated with the management of plant, forestry and aquatic genetic resources. Please describe the collaboration, including, if relevant, a description of the benefits gained by pursuing a collaborative approach.

	Extent of collaboration	Description
Development of joint national strategies or action plans	limited	Developing a system for the management of national animal genetic resources.
Collaboration in the characterization, surveying or monitoring of genetic resources, production environments or ecosystems	limited	Developing a system for the management of national animal genetic resources.

	Extent of collaboration	Description
Collaboration related to genetic improvement	limited	Developing a system for the management of national animal genetic resources.
Collaboration related to product development and/or marketing	none	none
Collaboration in conservation strategies, programmes or projects	none	none
Collaboration in awareness-raising on the roles and values of genetic resources	none	none
Training activities and/or educational curricula that address genetic resources in an integrated manner	none	none
Collaboration in the mobilization of resources for the management of genetic resources	none	none

2. Please describe any other types of collaboration.

none

3. If relevant, please describe the benefits that could be achieved by strengthening collaboration in the management of genetic resources in the animal, plant, forest and aquatic sectors in your country. If specific plans to increase collaboration are in place, please describe them and the benefits foreseen

none

4. Please describe any factors that facilitate or constrain collaborative approaches to the management of genetic resources in your country.

none

5. If there are constraints, please indicate what needs to be done to overcome them.

none

ANIMAL GENETIC RESOURCES MANAGEMENT AND THE PROVISION OF REGULATING AND SUPPORTING ECOSYSTEM SERVICES

6. Do your country's policies, plans or strategies for animal genetic resources management include measures specifically addressing the roles of livestock in the provision of regulating ecosystem services and/or supporting ecosystem services?

Regulating ecosystem services: "Benefits obtained from the regulation of ecosystem processes" – Millennium Ecosystem Assessment. 2005. Ecosystems and human well-being: synthesis. Washington D.C., Island Press (available at http://millenniumassessment.org/documents/document.356.aspx.pdf), page 40. Supporting ecosystem services: "Services necessary for the production of all other ecosystem services" – Millennium Ecosystem Assessment. 2005. Ecosystems and human well-being: synthesis. Washington D.C., Island Press (available at http://millenniumassessment.org/documents/document.356.aspx.pdf), page 40.

- ○ yes
- ◉ no

6.1. If yes, please describe these measures and indicate which supporting and/or regulating ecosystem services are targeted, and in which production systems.

Examples of supporting and regulatory ecosystem services provided by livestock might include the following: provision or maintenance of wildlife habitats (e.g. via grazing); seed dispersal (e.g. in dung or on animals' coats); promoting plant growth (e.g. stimulating growth via grazing or browsing); soil formation (e.g. via the supply of manure); soil nutrient cycling (e.g. via supply of manure); soil quality regulation (e.g. affecting soil structure and water-holding capacity via trampling or dunging); control of weeds and invasive species (e.g. via grazing or browsing invasive plants); climate regulation (e.g. by promoting carbon sequestration through dunging); enhancing pollination levels (e.g. by creating habitats for pollinators); fire control (e.g. by removal of biomass that may fuel fires); avalanche control (e.g. grazing to keep vegetation short to reduce the probability that snow will slide); erosion regulation (e.g. indirect via fire control services); maintenance of water quality and quantity (e.g. indirect effect via erosion control); management of crop residues (e.g. consumption of unwanted crop residues by animals); pest regulation (e.g. by destruction of pests or pest habitats); disease regulation (e.g. by destruction of disease vectors or their habitats); buffering of water quantities – flood regulation (e.g. indirect effect via fire and erosion control).

none

6.1.1 Please describe what the outcome of these measures has been in terms of the supply of the respective ecosystem services (including an indication of the scale on which these outcomes have been obtained).

none

6.1.2 Please describe what the outcome of these measures has been in terms of the state of animal genetic resources and their management (including an indication of the scale on which these outcomes have been obtained).

none

7. Do your country's policies, plans or strategies for animal genetic resources management include measures specifically addressing environmental problems associated with livestock production?

Examples might include choosing to use particular species or breeds because they are less environmentally damaging in a given ecosystem or adapting breeding goals to produce animals that have some characteristic that makes them more environmentally friendly.

- ○ yes
- ◉ no

7.1. If yes, please describe these measures and indicate the environmental problems that are targeted, and in which production systems.

none

7.1.1 Please describe what the outcome of these measures has been in terms of the reduction of the respective environmental problem (including an indication of the scale on which these outcomes have been obtained).

none

7.1.2 Please describe what the outcome of these measures has been in terms of the state of animal genetic resources and their management (including an indication of the scale on which these outcomes have been obtained).

none

8. Please describe any constraints or problems encountered or foreseen in the implementation of measures in your country aimed at promoting the provision of regulating and supporting ecosystem services or reducing environmental problems.

none

9. Please provide examples of cases in which the role of livestock or specific animal genetic resources is particularly important in the provision of regulating and/or supporting ecosystem services in your country. Please also describe any examples in which diverse animal genetic resources are important in terms of reducing the adverse environmental effects of livestock production.

none

10. Please describe the potential steps that could be taken in your country to further expand or strengthen positive links between animal genetic resources management and the provision of regulating and/or supporting ecosystem services or the reduction of environmental problems. If your country has specific plans to take further action in this field, please describe them.

none

11. Please provide any further information on the links between animal genetic resources management in your country and the provision of supporting and/or regulating ecosystem services and/or the reduction of environmental problems.

none

IV. PROGRESS REPORT ON THE IMPLEMENTATION OF THE *GLOBAL PLAN OF ACTION FOR ANIMAL GENETIC RESOURCES* – 2007 TO 2013

Note: Please provide further details in the text boxes below each question, including, if relevant, information on why no action has been taken.

STRATEGIC PRIORITY AREA 1: CHARACTERIZATION, INVENTORY AND MONITORING OF TRENDS AND ASSOCIATED RISKS

- The state of inventory and characterization of animal genetic resources
- The state of monitoring programmes and country-based early warning and response systems
- The state of international technical standards and protocols for characterization, inventory, and monitoring

1. Which of the following options best describes your country's progress in building an inventory of its animal genetic resources covering all livestock species of economic importance (SP 1, Action 1)?

Glossary: An inventory is a complete list of all the different breeds present in a country.

- ○ a. Completed before the adoption of the GPA
- ◉ b. Completed after the adoption of the GPA
- ○ c. Partially completed (further progress since the adoption of the GPA)
- ○ d. Partially completed (no further progress since the adoption of the GPA)

Please provide further details:

Nowadays the country's progress in building an inventory of its animal genetic resources covering all livestock species of economic importance is under intensive realization as the project was prolonged till the end of the 2014. From the 2011 to 2013 such work didn't take a place.

2. Which of the following options best describes your country's progress in implementing phenotypic characterization studies covering morphology, performance, location, production environments and specific features in all livestock species of economic importance (SP 1, Actions 1 and 2)?

- ○ a. Comprehensive studies were undertaken before the adoption of the GPA
- ○ b. Sufficient information has been generated because of progress made since the adoption of the GPA
- ◉ c. Some information has been generated (further progress since the adoption of the GPA)
- ○ d. Some information has been generated (no further progress since the adoption of the GPA)
- ○ e. None, but action is planned and funding identified
- ○ f. None, but action is planned and funding is sought
- ○ g. None

Please provide further details:

Nowadays country's progress in implementing phenotypic characterization studies covering morphology, performance, location, production environments and specific features in all livestock species of economic importance is that there has been generated and observed some information in order to form the National Plan of Action. We hope there would be further progress since the adoption of the GPA.

3. Which of the following options best describes your country's progress in molecular characterization of its animal genetic resources covering all livestock species of economic importance (SP 1)?

- ○ a. Comprehensive studies were undertaken before the adoption of the GPA
- ○ b. Sufficient information has been generated because of progress made since the adoption of the GPA
- ○ c. Some information has been generated (further progress since the adoption of the GPA)
- ○ d. Some information has been generated (no further progress since the adoption of the GPA)
- ○ e. None, but action is planned and funding identified
- ◉ f. None, but action is planned and funding is sought
- ○ g. None

Please provide further details:

The country has no progress in molecular characterization of its animal genetic resources covering all livestock species of economic importance because of the lack of funding. but now the action is planned and funding is identified.

4. Has your country conducted a baseline survey of the population status of its animal genetic resources for all livestock species of economic importance (SP 1, Action 1)?

Glossary: A baseline provides a reference point for monitoring population trends. Population status refers to the total size of a national breed population (ideally, also the proportion that is actively used for breeding and the number of male and female breeding animals).

- ◉ a. Yes, a baseline survey was undertaken before the adoption of the GPA
- ○ b. Yes, a baseline survey has been undertaken or has commenced after the adoption of the GPA
- ○ c. Yes, a baseline survey has been undertaken for some species (coverage increased since the adoption of the GPA)
- ○ d. Yes, a baseline survey has been undertaken for some species (coverage not increased since the adoption of the GPA)
- ○ e. No, but action is planned and funding identified
- ○ f. No, but action is planned and funding is sought
- ○ g. No

Please provide further details:

A baseline survey of the population status of its animal genetic resources for all livestock species of economic importance is conducted in order to form the NPA and to adopt the GPA.

5. Have institutional responsibilities for monitoring the status of animal genetic resources in your country been established (SP 1, Action 3)?

Glossary: Monitoring is a systematic set of activities undertaken to document changes in the population size and structure of animal genetic resources over time.

- ○ a. Yes, responsibilities established before the adoption of the GPA

- ○ b. Yes, responsibilities established after the adoption of the GPA
- ○ c. No, but action is planned and funding identified
- ○ d. No, but action is planned and funding is sought
- ◉ e. No

Please provide further details:

none

6. Have protocols (details of schedules, objectives and methods) been established for a programme to monitor the status of animal genetic resources in your country (SP 2)?

- ○ a. Yes, protocols established before the adoption of the GPA
- ○ b. Yes, protocols established after the adoption of the GPA
- ○ c. No, but action is planned and funding identified
- ○ d. No, but action is planned and funding is sought
- ◉ e. No

Please provide further details:

none

7. Are the population status and trends of your country's animal genetic resources being monitored regularly for all livestock species of economic importance (SP 1, Action 2)?

- ○ a. Yes, regular monitoring commenced before the adoption of the GPA
- ○ b. Yes, regular monitoring commenced after the adoption of the GPA
- ○ c. Yes, regular monitoring is being undertaken for some species (coverage increased since the adoption of the GPA)
- ○ d. Yes, regular monitoring is being undertaken for some species (coverage not increased since the adoption of the GPA)
- ○ e. No, but action is planned and funding identified
- ○ f. No, but action is planned and funding is sought
- ◉ g. No

Please provide further details:

none

8. Which criteria does your country use for assessing the risk status of its animal genetic resources (SP 1, Action 7)?

Glossary: FAO has developed criteria that it uses to allocate breeds to risk-status categories based on the size and structure of their populations (http://www.fao.org/docrep/010/a1250e/a1250e00.htm).

- ○ a. FAO criteria
- ○ b. National criteria that differ from the FAO criteria
- ○ c. Other criteria (e.g. defined by international body such as European Union)
- ◉ d. None

Please provide further details. If applicable, please describe (or provide a link to a web site that describes) your national criteria or those of the respective international body:

none

9. Has your country established an operational emergency response system (http://www.fao.org/docrep/meeting/021/K3812e.pdf) that provides for immediate action to safeguard breeds at risk in all important livestock species (SP 1, Action 7)?

- ○ a. Yes, a comprehensive system was established before the adoption of the GPA
- ○ b. Yes, a comprehensive system has been established since the adoption of the GPA
- ○ c. For some species and breeds (coverage expanded since the adoption of the GPA)
- ○ d. For some species and breeds (coverage not expanded since the adoption of the GPA)
- ○ e. No, but action is planned and funding identified
- ○ f. No, but action is planned and funding is sought
- ◉ g. No

Please provide further details:

none

10. Is your country conducting research to develop methods, technical standards or protocols for phenotypic or molecular characterization, or breed evaluation, valuation or comparison? (SP 2, Action 2)

- ◉ a. Yes, research commenced before the adoption of the GPA
- ○ b. Yes, research commenced after the adoption of the GPA
- ○ c. No, but action is planned and funding identified
- ○ d. No, but action is planned and funding is sought
- ○ e. No

Please provide further details:

The country is conducting research to develop methods, technical standards and protocols for phenotypic or molecular characterization and breed evaluation and comparison in order to form the NPA.

11. Has your country identified the major barriers and obstacles to enhancing its inventory, characterization and monitoring programmes?

- ○ a. Yes
- ◉ b. No
- ○ c. No major barriers and obstacles exist. Comprehensive inventory, characterization and monitoring programmes are in place.

Please provide further details. If barriers and obstacles have been identified, please list them:

none

12. If applicable, please list and describe the measures that need to be taken to address these barriers and obstacles and to enhance your country's inventory, characterization and monitoring programmes:

none

13. Please provide further comments on your country's activities related to Strategic Priority Area 1: Characterization, inventory and monitoring of trends and associated risks (including regional and international cooperation)

Note: It is not necessary to duplicate information provided in previous sections. Where relevant, please provide cross-references.

none

STRATEGIC PRIORITY AREA 2: SUSTAINABLE USE AND DEVELOPMENT

- The state of national sustainable use policies for animal genetic resources
- The state of national species and breed development strategies and programmes
- The state of efforts to promote agro-ecosystem approaches

14. Does your country have adequate national policies in place to promote the sustainable use of animal genetic resources (see also questions 46 and 54)?

- ○ a. Yes, since before the adoption of the GPA
- ○ b. Yes, policies put in place or updated after the adoption of the GPA
- ○ c. No, but action is planned and funding identified
- ◉ d. No, but action is planned and funding is sought
- ○ e. No

Please provide further details. If available, please provide the text of the policies or a web link to the text:

The country has no adequate national policies in place to promote the sustainable use of animal genetic resources because of the lack of funding, but generally the action is planned and the funding is sought.

15. Do these policies address the integration of agro-ecosystem approaches into the management of animal genetic resources in your country (SP5) (see also questions 46 and 54)?

Glossary: The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way (for further information see http://www.cbd.int/ecosystem/description.shtml).

- ○ a. Yes
- ○ b. No, but a policy update is planned and funding identified
- ○ c. No, but action is planned and funding is sought
- ◉ d. No

Please provide further details:

none

16. Do breeding programmes exist in your country for all major species and breeds, and are these programmes regularly reviewed, and if necessary revised, with the aim of meeting foreseeable economic and social needs and market demands (SP4, Action 2)?

- ◉ a. Yes, since before the adoption of the GPA
- ○ b. Yes, put in place after the adoption of the GPA
- ○ c. For some species and breeds (coverage has increased since the adoption of the GPA)
- ○ d. For some species and breeds (coverage has not increased since the adoption of the GPA)
- ○ e. No, but action is planned and funding identified
- ○ f. No, but action is planned and funding is sought
- ○ g. No

Please provide further details:

In the Republic of Kazakhstan there exist programmes for all major species and breeds, and these programmes are regularly reviewed and revised and observed by the Agrucultural Ministry of the Republic of Kazakhstan in order to foresee economic and social needs and market demands.

17. Is long-term sustainable use planning – including, if appropriate, strategic breeding programmes – in place for all major livestock species and breeds (SP4, Action 1)?

- ○ a. Yes, since before the adoption of the GPA
- ○ b. Yes, put in place after the adoption of the GPA
- ○ c. For some species and breeds (further progress made since the adoption of the GPA)
- ○ d. For some species and breeds (no further progress made since the adoption of the GPA)
- ○ e. No, but action is planned and funding identified
- ◉ f. No, but action is planned and funding is sought
- ○ g. No

Please provide further details:

There are no long-termed sustainable plan and strategic breeding programmes but action is planned in the NPA and the funding is identified.

18. Have the major barriers and obstacles to enhancing the sustainable use and development of animal genetic resources in your country been identified?

- ○ a. Yes
- ◉ b. No
- ○ c. No major barriers and obstacles exist. Comprehensive sustainable use and development measures are in place.

Please provide further details. If barriers and obstacles have been identified, please list them:

none

19. Have the long-term impacts of the use of exotic breeds on locally adapted breeds (e.g. economic, environmental or genetic impacts) and on food security been assessed in your country (SP4, Action 1)?

Glossary:

Exotic breeds are breeds that are maintained in a different area from the one in which they were developed. Exotic breeds comprise both recently introduced breeds and continually imported breeds.

Locally adapted breeds are breeds that have been in the country for a sufficient time to be genetically adapted to one or more of traditional production systems or environments in the country. The phrase "sufficient time" refers to time present in one or more of the country's traditional production systems or environments. Taking cultural, social and genetic aspects into account, a period of 40 years and six generations of the respective species might be considered as a guiding value for "sufficient time", subject to specific national circumstances.

c. Yes, assessments were introduced after the adoption of the GPA

Please provide further details:

20. Have recording systems and organizational structures for breeding programmes been established or strengthened (SP4, Action 3)?

- ◉ a. Yes, sufficient recording systems and organizational structures for breeding programmes have existed since before the adoption of the GPA
- ○ b. Yes, sufficient recording systems and organizational structures for breeding programmes exist because of progress made since the adoption of the GPA
- ○ c. Yes, recording systems and organizational structures for breeding programmes are partially in place (and were established or strengthened after the adoption of the GPA)
- ○ d. Yes, recording systems and organizational structures for breeding programmes are partially in place (but no progress has been made since the adoption of the GPA)
- ○ e. No, but action is planned and funding identified
- ○ f. No, but action is planned and funding is sought

- ○ g. No

Please provide further details:

Such recording system and organizational structures for breeding programmes have existed before the adoption of the GPA, but these questions are included into the NPA in order to make a progress after adopting GPA.

21. Are mechanisms in place in your country to facilitate interactions among stakeholders, scientific disciplines and sectors as part of sustainable use development planning (SP5, Action 3)?

- ○ a. Yes, comprehensive mechanisms have existed since before the adoption of the GPA
- ○ b. Yes, comprehensive mechanisms exist because of progress made since the adoption of the GPA
- ○ c. Yes, mechanisms are partially in place (and were established or strengthened after the adoption of the GPA)
- ◉ d. Yes, mechanisms are partially in place (but no progress has been made since the adoption of the GPA)
- ○ e. No, but action is planned and funding identified
- ○ f. No, but action is planned and funding is sought
- ○ g. No

Please provide further details:

There are programmes under the control of Ministry of Agriculture, KazAgroInnovation, KazAgroFinance related to the development of gene pool and import of genetic resources. Complex programme of AnGR management and reservation will be adopted after finishing the FAO project.

22. Have measures been implemented in your country to provide farmers and livestock keepers with information that facilitates their access to animal genetic resources (SP 4, Action 7)?

- ◉ a. Yes, comprehensive measures have existed since before the adoption of the GPA
- ○ b. Yes, comprehensive measures exist because of progress made since the adoption of the GPA
- ○ c. Yes, measures partially implemented (and were established or strengthened after the adoption of the GPA)
- ○ d. Yes, measures partially implemented (but no progress has been made since the adoption of the GPA)
- ○ e. No, but action is planned and funding identified
- ○ f. No, but action is planned and funding is sought
- ○ g. No

Please provide further details:

To provide farmers and livestock keepers with information that facilitates their access to AnGR there used Extension centre of KazAgroInnovation.

23. Has your country developed a national policy or entered specific contractual agreements for access to and the equitable sharing of benefits resulting from the use and development of animal genetic resources and associated traditional knowledge (SP3, Action 2)?

- ○ a. Yes, sufficient measures (policy and/or agreements) have been in place since before the adoption of the GPA
- ○ b. Yes, sufficient measures (policy and/or agreements) are in place because of progress made since the adoption of the GPA
- ○ c. Yes, some measures (policy and/or agreements) are in place (progress has been made since the adoption of the GPA)
- ○ d. Yes, some measures (policy and/or agreements) are in place (but no progress has been made since the adoption of the GPA)
- ○ e. No, but a policy and/or agreements are in preparation
- ◉ f. No, but a policy and/or agreements are planned
- ○ g. No

Please provide further details:

none

24. Have training and technical support programmes for the breeding activities of livestock-keepers been established or strengthened in your country (SP 4, Action 1)?

- (●) a. Yes, sufficient programmes have existed since before the adoption of the GPA
- ( ) b. Yes, sufficient programmes exist because of progress made since the adoption of the GPA
- ( ) c. Yes, some programmes exist (progress has been made since the adoption of the GPA)
- ( ) d. Yes, some programmes exist (but no progress has been made since the adoption of the GPA)
- ( ) e. No, but action is planned and funding identified
- ( ) f. No, but action is planned and funding is sought
- ( ) g. No

Please provide further details:

In the last decade there were adopted scientific programmes on the selection of animals in the system of Agricultural complex: state scientific programmes 042 and 212.

25. Have priorities for future technical training and support programmes to enhance the use and development of animal genetic resources in your country been identified (SP 4, paragraph 42)?

- ( ) a. Yes, priorities have been identified or updated since the adoption of the GPA
- ( ) b. Yes, priorities were identified before the adaption of the GPA but have not been updated
- ( ) c. No, but action is planned and funding identified
- (●) d. No, but action is planned and funding is sought
- ( ) e. No

Please provide further details:

There are no technical training and support programmes to enhance the use and development of animal genetic resources in our country but action is planned in the NPA and the funding is identified.

26. Have efforts been made in your country to assess and support indigenous or local production systems and associated traditional knowledge and practices related to animal genetic resources (SP 6, Action 1, 2)?

- ( ) a. Yes, sufficient measures have been in place since before the adoption of the GPA
- ( ) b. Yes, sufficient measures are in place because of progress made since the adoption of the GPA
- ( ) c. Yes, some measures are in place (and were established or strengthened after the adoption of the GPA)
- ( ) d. Yes, some measures are in place (but no progress has been made since the adoption of the GPA)
- ( ) e. No, but action is planned and funding identified
- (●) f. No, but action is planned and funding is sought
- ( ) g. No

Please provide further details:

none

27. Have efforts been made in your country to promote products derived from indigenous and local species and locally adapted breeds, and facilitate access to markets (SP 6, Action 2, 4)?

- ( ) a. Yes, sufficient measures have been in place since before the adoption of the GPA
- ( ) b. Yes, sufficient measures are in place because of progress made since the adoption of the GPA
- ( ) c. Yes, some measures are in place (and were established or strengthened after the adoption of the GPA)
- (●) d. Yes, some measures are in place (but no progress has been made since the adoption of the GPA)

- ○ e. No, but action is planned and funding identified
- ○ f. No, but action is planned and funding is sought
- ○ g. No

Please provide further details:

Results of the scientific researches were published in scientific and practical journals and magazines as an articles,magazines, and practical recommendations.

28. If applicable, please list and describe priority requirements for enhancing the sustainable use and development of animal genetic resources in your country:

1) Inventory of agricultural AnGR and poultry through the methods of expeditionary observations and database of IAS, political and scientific organizations. 2) Adoption of appropriate documents on AnGR reservation and development.

29. Please provide further comments on your country's activities related to Strategic Priority Area 2: Sustainable Use and Development (including regional and international cooperation)

Note: It is not necessary to duplicate information provided in previous sections. Where relevant, please provide cross-references.

There are no any regional and international contribution on sustainable development of AnGR in Kazakhstan.

STRATEGIC PRIORITY AREA 3: CONSERVATION

- The state of national conservation policies
- The state of *in situ* and *ex situ* conservation programmes
- The state of regional and global long-term conservation strategies and agreement on technical standards for conservation

30. Does your country regularly assess factors leading to the erosion of its animal genetic resources (SP 7, Action 2)?

- ○ a. Erosion not occurring
- ○ b. Yes, regular assessments have been implemented since before the adoption of the GPA
- ○ c. Yes, regular assessments have commenced since the adoption of the GPA
- ○ d. No, but action is planned and funding identified
- ○ e. No, but action is planned and funding is sought
- ◉ f. No

Please provide further details:

none

31. What factors or drivers are leading to the erosion of animal genetic resources? Please describe the factors specifying which breeds or species are affected:

none

32. Does your country have conservation policies and programmes in place to protect locally adapted breeds at risk in all important livestock species (SP 7, SP 8 and SP 9)?

Glossary: Locally adapted breeds are breeds that have been in the country for a sufficient time to be genetically adapted to one or more of traditional production systems or environments in the country. The phrase "sufficient time" refers to time present in one or more of the country's traditional production systems or environments. Taking cultural, social and genetic aspects into account, a period of 40 years and six generations of the respective species might be considered as a guiding value for "sufficient time", subject to specific national circumstances.

- ○ a. Country requires no policies and programmes because all locally adapted breeds are secure
- ○ b. Yes, comprehensive policies and programmes have been in place since before the adoption of the GPA
- ○ c. Yes, comprehensive policies and programmes exist because of progress made since the adoption of the GPA
- ○ d. For some species and breeds (coverage expanded since the adoption of the GPA)
- ○ e. For some species and breeds (coverage not expanded since the adoption of the GPA)
- ○ f. No, but action is planned and funding identified
- ○ g. No, but action is planned and funding is sought
- ◉ h. No

Please provide further details:

none

33. If conservation policies and programmes are in place, are they regularly evaluated or reviewed (SP 7, Action 1; SP 8, Action 1; and SP 9, Action 1)?

- ○ a. Yes
- ○ b. No, but action is planned and funding identified
- ○ c. No, but action is planned and funding is sought
- ◉ d. No

Please provide further details:

none

34. Does your country have in situ conservation measures in place for locally adapted breeds at risk of extinction and to prevent breeds from becoming at risk (SP 8 and SP 9)?

Glossary: Locally adapted breeds are breeds that have been in the country for a sufficient time to be genetically adapted to one or more of traditional production systems or environments in the country. The phrase "sufficient time" refers to time present in one or more of the country's traditional production systems or environments. Taking cultural, social and genetic aspects into account, a period of 40 years and six generations of the respective species might be considered as a guiding value for "sufficient time", subject to specific national circumstances.

- ○ a. Country requires no in situ conservation measures because all locally adapted breeds are secure
- ○ b. Yes for all breeds
- ○ c. For some breeds (coverage expanded since the adoption of the GPA)
- ○ d. For some breeds (coverage not expanded since the adoption of the GPA)
- ○ e. No, but action is planned and funding identified
- ○ f. No, but action is planned and funding is sought
- ◉ g. No

Please provide further details:

none

35. Does your country have ex situ in vivo conservation measures in place for locally adapted breeds at risk of extinction and to prevent breeds from becoming at risk (SP 8 and SP 9)?

Glossary: Ex situ in vivo conservation - maintenance of live animal populations not kept under their normal management conditions - e.g. in zoological parks or governmental farms - and/or outside the area in which they evolved or are now normally found.

- ○ a. Country requires no ex situ in vivo conservation measures because all locally adapted breeds are secure
- ○ b. Yes for all breeds
- ○ c. For some breeds (coverage expanded since the adoption of the GPA)
- ○ d. For some breeds (coverage not expanded since the adoption of the GPA)
- ○ e. No, but action is planned and funding identified
- ○ f. No, but action is planned and funding is sought
- ◉ g. No

Please provide further details:

none

36. Does your country have ex situ in vitro conservation measures in place for locally adapted breeds at risk of extinction and to prevent breeds from becoming at risk (SP 8 and SP 9)?

Glossary: Ex situ in vitro - conservation, under cryogenic conditions including, inter alia, the cryoconservation of embryos, semen, oocytes, somatic cells or tissues having the potential to reconstitute live animals at a later date.

- ○ a. Country requires no ex situ in vitro conservation measures because all locally adapted breeds are secure
- ○ b. Yes for all breeds
- ○ c. For some breeds (coverage expanded since the adoption of the GPA)
- ○ d. For some breeds (coverage not expanded since the adoption of the GPA)
- ○ e. No, but action is planned and funding identified
- ○ f. No, but action is planned and funding is sought
- ◉ g. No

Please provide further details:

none

37. Please describe the measures (indicating for each whether they were introduced before or after the adoption of the GPA) or provide a web link to a published document that provides further information:

There are no any measures.

38. If your country has not established any conservation programmes, is this a future priority?

- ◉ a. Yes
- ○ b. No

Please provide further details:

It is necessary to establish a conservation programme in order to save and use AnGR rationally and it is a future priority. We hope such a programme should be worked out through the coordination of FAO.

39. Has your country identified the major barriers and obstacles to enhancing the conservation of its animal genetic resources?

- ○ a. Country requires no conservation programmes because all animal genetic resources are secure
- ○ b. Yes
- ◉ c. No
- ○ d. No major barriers and obstacles exist. Comprehensive conservation programmes are in place

Please provide further details. If barriers and obstacles have been identified, please list them:

none

40. If your country has existing ex situ collections of animal genetic resources, are there major gaps in these collections (SP 9, Action 5)?

- ○ a. Yes
- ◉ b. No

If yes, have priorities for filling the gaps been established?

- ○ a. Yes
- ○ b. No, but action is planned and funding identified
- ○ c. No, but action is planned and funding is sought
- ◉ d. No

Please provide further details:

none

41. Are arrangements in place in your country to protect breeds and populations that are at risk from natural or human-induced disasters (SPA 3)?

- ○ a. Yes, arrangements have been in place since before the adoption of the GPA
- ○ b. Yes, arrangements put in place after the adoption of the GPA
- ○ c. No, but action is planned and funding identified
- ○ d. No, but action is planned and funding is sought
- ◉ e. No

Please provide further details:

none

42. Are arrangements in place in your country for extraction and use of conserved genetic material following loss of animal genetic resources (e.g. through disasters), including arrangements to enable restocking (SP 9, Action 3)?

- ○ a. Yes, arrangements have been in place since before the adoption of the GPA
- ○ b. Yes, arrangements put in place after the adoption of the GPA
- ○ c. No, but action is planned and funding identified
- ○ d. No, but action is planned and funding is sought
- ◉ e. No

Please provide further details:

none

43. Is your country conducting research to adapt existing, or develop new, methods and technologies for in situ and ex situ conservation of animal genetic resources (SP 11, Action 1)?

- ○ a. Yes, research commenced before the adoption of the GPA
- ○ b. Yes, research commenced since the adoption of the GPA
- ○ c. No, but action is planned and funding identified
- ○ d. No, but action is planned and funding is sought
- ◉ e. No

Please provide further details. If yes, please briefly describe the research:

none

44. Does your country implement programmes to promote documentation and dissemination of knowledge, technologies and best practices for conservation (SP 11, Action 2)?

- ○ a. Yes, programmes commenced before the adoption of the GPA
- ○ b. Yes, programmes commenced since the adoption of the GPA
- ○ c. No, but action is planned and funding identified
- ◉ d. No, but action is planned and funding is sought
- ○ e. No

Please provide further details:

There are no programmes to promote documentation and dissemination of knowledge, technologies and best practices for conservation but action is planned in the NPA and the funding is identified.

45. What are your country's priority requirements for enhancing conservation measures for animal genetic resources? Please list and describe them:

There are no any measures.

46. Please provide further comments describing your country's activities related to Strategic Priority Area 3: Conservation (including regional and international cooperation)

Note: It is not necessary to duplicate information provided in previous sections. Where relevant, please provide cross-references.

This direction researched in the framework of implementing programs.

STRATEGIC PRIORITY AREA 4: POLICIES, INSTITUTIONS AND CAPACITY-BUILDING IMPLEMENTATION AND FINANCING OF THE GLOBAL PLAN OF ACTION FOR ANIMAL GENETIC RESOURCES

- The state of national institutions for planning and implementing animal genetic resources measures
- The state of information sharing
- The state of educational and research facilities capacity for characterization, inventory, and monitoring, sustainable use, development, and conservation
- The state of awareness of the roles and values of animal genetic resources
- The state of policies and legal frameworks for animal genetic resources

47. Does your country have sufficient institutional capacity to support holistic planning of the livestock sector (SP 12, Action1)?

- ◉ a. Yes, sufficient capacity has been in place since before the adoption of the GPA
- ○ b. Yes, sufficient capacity is in place because of progress made after the adoption of the GPA
- ○ c. No, but action is planned and funding identified
- ○ d. No, but action is planned and funding is sought
- ○ e. No

Please provide further details:

Kazakhsan has sufficient institutional capacity to supprot holistic plan of the livestock sector and they are departments of breeding work and science work, Agricultural Ministry and its subordinate organizations like KazAgro, JSC KazAgroInnovation and a number of scientific educational organizations of the Ministry of Education and Science.

48. What is the current status of your country's national strategy and action plan for animal genetic resources (SP 20)?

Glossary: National strategy and action plan for animal genetic resources: a strategy and plan, agreed by stakeholders and preferably government-endorsed, that translates the internationally agreed Global Plan of Action for Animal Genetic Resources into national actions, with the aim of ensuring a strategic and comprehensive approach to the sustainable use, development and conservation of animal genetic resources for food and agriculture.

- ○ a. Previously endorsed national strategy and action plan is being updated (or new version has been endorsed)
- ○ b. Completed and government-endorsed
- ○ c. Completed and agreed by stakeholders
- ◉ d. In preparation
- ○ e. Preparation is planned and funding identified
- ○ f. Future priority activity
- ○ g. Not planned

Please provide further details. If available, please provide a copy of your country's national strategy and action plan as a separate document or as a web link:

The national plan is in the process of preparation.

49. Are animal genetic resources addressed in your country's National Biodiversity Strategy and Action Plan (http://www.cbd.int/nbsap/)?

- ◉ a. Yes
- ○ b. No, but they will be addressed in forthcoming plan
- ○ c. No

Please provide further details:

Yes, questions related to the development and improvement of AnGR addressed to country's National Biodiversity.

50. Are animal genetic resources addressed in your country's national livestock sector strategy, plan or policy (or equivalent instrument)?

- ○ a. Yes
- ◉ b. No, but they will be addressed in a forthcoming strategy, plan or policy
- ○ c. No, animal genetic resources are not addressed
- ○ d. No, the country does not have a national livestock sector strategy, plan or policy

Please provide further details. If available, please provide the text of the strategy, plan or policy or a web link to the text:

The national plan is in the process of preparation.

51. Has your country established or strengthened a national database for animal genetic resources (independent from DAD-IS) (SP 15, Action 4)?

- ○ a. Yes, a national database has been in place since before the adoption of the GPA
- ○ b. Yes, a national database is in place because of progress made since the adoption of the GPA
- ◉ c. Yes, a national database is in place but still requires strengthening (progress since adoption of the GPA)
- ○ d. Yes, a national database is in place but still requires strengthening (no progress since adoption of the GPA)
- ○ e. No, but action is planned and funding identified

- ○ f. No, but action is planned and funding is sought
- ○ g. No

Please provide further details:

There are a national database, but it needs to be strengthened in order the information to be clear and we are planning to establish DAD-IS. It is the most appropriate programme.

52. Have your country's national data on animal genetic resources been regularly updated in DAD-IS?

Note that the Commission on Genetic Resources for Food and Agriculture has requested FAO to produce global status and trends reports every two years.

- ○ a. Yes, regular updates have been occurring since before the adoption of the GPA
- ○ b. Yes, regular updates started after the adoption of the GPA
- ◉ c. No, but it is a future priority
- ○ d. No

Please provide further details:

No, but we are planning to do so.

53. Has your country established a National Advisory Committee for Animal Genetic Resources (SP 12, Action 3)?

- ◉ a. Yes, established before the adoption of the GPA
- ○ b. Yes, established after the adoption of the GPA
- ○ c. No, but action is planned and funding identified
- ○ d. No, but action is planned and funding is sought
- ○ e. No

Please provide further details. If a National Advisory Committee has been established, please list its main functions:

National Advisory Committee for AnGR is established in the JSC Kazakh Scientific Research Institute of Animal Breeding and Forage Production members of which are National Coordinator, National Consultant and 18 members of working group the main functions of which is to organize FAO activities in Kazakhstan till the October 2014 and work out a strategic plan.

54. Is there strong coordination and interaction between the National Focal Point and stakeholders involved with animal genetic resources, such as the breeding industry, livestock keepers, government agencies, research institutes and civil society organizations (SP 12, Action 3)?

- ○ a. Yes, strong coordination has been in place since before the adoption of the GPA
- ○ b. Yes, strong coordination was established after the adoption of the GPA
- ○ c. No, but action is planned and funding identified
- ◉ d. No, but action is planned and funding is sought
- ○ e. No

Please provide further details:

none

55. Does the National Focal Point (or other institutions) undertake activities to increase public awareness of the roles and values of animal genetic resources (SP 18)?

- ○ a. Yes, activities commenced before the adoption of the GPA
- ○ b. Yes, activities commenced after the adoption of the GPA

- ○ c. No, but activities are planned and funding identified
- ◉ d. No, but activities are planned and funding is sought
- ○ e. No

Please provide further details:

No, we are planning to organize an International Conference on the theme of AnGR in our country and there will be provided all the information about FAO and AnGR of the Kazakhstan too.

56. Does your country have national policies and legal frameworks for animal genetic resources management (SP 20)?

- ◉ a. Yes, comprehensive national policies and legal frameworks were in place before the adoption of the GPA and are kept up to date
- ○ b. Yes, comprehensive and up-to-date national policies and legal frameworks in place because of progress made since the adoption of the GPA
- ○ c. Yes, some national policies and legislation in place (strengthened since the adoption of the GPA)
- ○ d. Yes, some national policies and legislation in place (not strengthened since the adoption of the GPA)
- ○ e. No, but action is planned and funding identified
- ○ f. No, but action is planned and funding is sought
- ○ g. No

Please provide further details:

The strategies of the National policy on the management of AnGR contribute with the strategies of Agricultural Ministry, KazAgro, JSC KazAgroInnovation which are strengthened yearly with appropriate legal frameworks.

57. Which of the following options best describes the state of training and technology transfer programmes in your country related to inventory, characterization, monitoring, sustainable use, development and conservation of animal genetic resources (SP14, Action 1)?

- ○ a. Comprehensive programmes have been in place since before the adoption of the GPA
- ○ b. Comprehensive programmes exist because of progress made since the adoption of the GPA
- ○ c. Some programmes exist (further progress since the adoption of the GPA)
- ◉ d. Some programmes (no further progress since the adoption of the GPA)
- ○ e. None, but action is planned and funding identified
- ○ f. None, but action is planned and funding is sought
- ○ g. None

Please provide further details:

In Kazakhstan there are programmes of education and knowledge distribution related to AnGR management and reservation in JSC KazAgroInnovation. Also such programmes of knowledge distribution and practice are active in the Houses of Animal Breeds.

58. Have organizations (including where relevant community-based organizations), networks and initiatives for sustainable use, breeding and conservation been established or strengthened (SP 14, Action 3)?

- ○ a. Yes, comprehensive organizations, networks and initiatives have existed since before the adoption of the GPA
- ○ b. Yes, comprehensive organizations, networks and initiatives exist because of progress made since the adoption of the GPA
- ○ c. Yes, some organizations, networks and initiatives exist (established or strengthened since adoption of the GPA)
- ◉ d. Yes, some organizations, networks and initiatives exist (but no progress made since adoption of the GPA)
- ○ e. No, but action is planned and funding identified
- ○ f. No, but action is planned and funding is sought
- ○ g. No

Please provide further details:

59. Are there any national NGOs active in your country in the fields of:

Characterization?

- ○ a. Yes
- ◉ b. No

Sustainable use and development?

- ○ c. Yes
- ◉ d. No

Conservation of breeds at risk?

- ○ e. Yes
- ◉ f. No

If yes, please list the national NGOs and provide links to their web sites:

none

60. Has your country established or strengthened research or educational institutions in the field of animal genetic resources management (SP 13, Action 3)?

- ○ a. Yes, adequate research and education institutions have existed since before the adoption of the GPA
- ○ b. Yes, adequate research and education institutions exist because of progress made since the adoption of the GPA
- ○ c. Yes, research and education institutions exist but still require strengthening (progress made since the adoption of the GPA)
- ○ d. Yes, research and education institutions exist but still require strengthening (no progress made since the adoption of the GPA)
- ○ e. No, but action is planned and funding identified
- ◉ f. No, but action is planned and funding is sought
- ○ g. No

Please provide further details:

none

61. Please provide further comments describing your country's activities related to Strategic Priority Area 4: Policies, Institutions and Capacity-building (including regional and international cooperation)

Note: It is not necessary to duplicate information provided in previous sections. Where relevant, please provide cross-references.

Agricultural ministry adopted programmes in order to strength the genetic potential of agricultural animals and poultry, also there are provided import of beefy and dairy cattle and poultry too.

IMPLEMENTATION AND FINANCING OF THE *GLOBAL PLAN OF ACTION FOR ANIMAL GENETIC RESOURCES*

- The state of international collaboration for planning and implementing animal genetic resources measures
- The state of financial resources for the conservation, sustainable use and development of animal genetic resources

62. Has your country established or strengthened international collaboration in (SP 16):

Characterization?

- ○ a. Yes
- ○ b. No, but action is planned and funding identified
- ◉ c. No, but action is planned and funding is sought
- ○ d. No

Sustainable use and development?

- ○ e. Yes
- ○ f. No, but action is planned and funding identified
- ◉ g. No, but action is planned and funding is sought
- ○ h. No

Conservation of breeds at risk?

- ◉ i. Yes
- ○ j. No, but action is planned and funding identified
- ○ k. No, but action is planned and funding is sought
- ○ l. No

Please provide further details:

none

63. Are there any international NGOs active in your country in the fields of:

Characterization?

- ○ a. Yes
- ◉ b. No

Sustainable use and development?

- ○ c. Yes
- ◉ d. No

Conservation of breeds at risk?

- ○ e. Yes
- ◉ f. No

If yes, please list the international NGOs:

none

64. Has national funding for animal genetic resources programmes increased since the adoption of the GPA?

- ○ a. Yes
- ◉ b. No

Please provide further details:

none

65. Has your country received external funding for implementation of the GPA?

- ○ a. Yes
- ◉ b. No
- ○ c. No, because country generally does not receive external funding

Please provide further details:

none

66. Has your country supported or participated in international research and education programmes assisting developing countries and countries with economies in transition to better manage animal genetic resources (SP 15 and 16)?

- ○ a. Yes, support or participation in place before the adoption of the GPA and strengthened since
- ○ b. Yes, support or participation in place before the adoption of the GPA but not strengthened since
- ○ c. Yes, support or participation in place since the adoption of the GPA
- ○ d. No, but action is planned and funding identified
- ○ e. No, but action is planned and funding is sought
- ◉ f. No

Please provide further details:

none

67. Has your country supported or participated in programmes aimed at assisting developing countries and countries with economies in transition to obtain training and technologies and to build their information systems (SP 15 and 16)?

- ○ a. Yes, support or participation commenced before the adoption of the GPA and strengthened since
- ○ b. Yes, support or participation commenced before the adoption of the GPA but not strengthened since
- ○ c. Yes, support or participation commenced since the adoption of the GPA
- ○ d. No, but action is planned and funding identified
- ○ e. No, but action is planned and funding is sought
- ◉ f. No

Please provide further details:

none

68. Has your country provided funding to other countries for implementation of the Global Plan of Action?

- ○ a. Yes
- ○ b. No, but action is planned and funding identified
- ○ c. No, but action is planned and funding is sought
- ◉ d. No
- ○ e. No, because country is generally not a donor country

Please provide further details. If relevant, specify whether funding was bilateral or multilateral; research cooperation or aid; and to whom and for what it was given:

none

69. Has your country contributed to international cooperative inventory, characterization and monitoring activities involving countries sharing transboundary breeds and similar production systems (SP 1, Action 5)?

- ○ a. Yes
- ○ b. No, but action is planned and funding identified
- ○ c. No, but action is planned and funding is sought
- ◉ d. No

Please provide further details:

none

70. Has your country contributed to establishing or strengthening global or regional information systems or networks related to inventory, monitoring and characterization of animal genetic resources (SP 1, Action 6)?

- ○ a. Yes
- ○ b. No, but action is planned and funding identified
- ○ c. No, but action is planned and funding is sought
- ◉ d. No

Please provide further details:

none

71. Has your country contributed to the development of international technical standards and protocols for characterization, inventory and monitoring of animal genetic resources (SP2)?

- ○ a. Yes
- ○ b. No, but action is planned and funding identified
- ○ c. No, but action is planned and funding is sought
- ◉ d. No

Please provide further details:

none

72. Has your country contributed to the development and implementation of regional in situ conservation programmes for breeds that are at risk (SP 8, Action 2; SP 10, Action 1)?

- ○ a. Yes
- ○ b. No, but action is planned and funding identified
- ○ c. No, but action is planned and funding is sought
- ◉ d. No

Please provide further details:

none

73. Has your country contributed to the development and implementation of regional ex situ conservation programmes for breeds that are at risk (SP 9, Action 2; SP 10, Action 3; SP 10, Action 4)?

- ○ a. Yes
- ○ b. No, but action is planned and funding identified
- ○ c. No, but action is planned and funding is sought
- ◉ d. No

Please provide further details:

none

74. Has your country contributed to the establishment of fair and equitable arrangements for the storage, access and use of genetic material stored in supra-national ex situ gene banks (SP9, Action 3)?

- ○ a. Yes
- ○ b. No, but action is planned and funding identified
- ◉ c. No, but action is planned and funding is sought
- ○ d. No

Please provide further details:

none

75. Has your country participated in regional or international campaigns to raise awareness of the status of animal genetic resources (SP19)?

- ○ a. Yes
- ◉ b. No, but action is planned and funding identified
- ○ c. No, but action is planned and funding is sought
- ○ d. No

Please provide further details:

none

76. Has your country participated in reviewing or developing international policies and regulatory frameworks relevant to animal genetic resources (SP 21)?

- ○ a. Yes
- ○ b. No, but action is planned and funding identified
- ○ c. No, but action is planned and funding is sought
- ◉ d. No

Please provide further details:

none

EMERGING ISSUES

77. In view of the possibility that at some point countries may wish to update the GPA, please list any aspects of animal genetic resources management that are not addressed in the current GPA but will be important to address in the future (approximately the next ten years). Please also describe why these issues are important and indicate what needs to be done to address them.
Issues to be addressed in future

Issues to be addressed in future (next ten years)	Reasons	Actions required

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