منظمة الأغذية والزراعة للأمم المتحدة | 联合国粮食及农业组织 | Food and Agriculture Organization of the United Nations | Organisation des Nations Unies pour l'alimentation et l'agriculture | Продовольственная и сельскохозяйственная организация Объединенных Наций | Organización de las Naciones Unidas para la Alimentación y la Agricultura

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: Czech Republic

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).

The Czech Republic submits the country report in support of the preparation of The Second Report on the State of the World's Animal Genetic Resources for Food and Agriculture by FAO, including sector-specific data contributing to The State of the World's Biodiversity for Food and Agriculture. The national report was prepared in cooperation with various persons and entities involved in managing animal genetic resources: state administration, research institutions, universities and breeders´ associations. The sector has a long tradition and economic importance within the country and has been constantly evolving in order to reflect the changing environmental and economic conditions.

Some major changes within the last 10-15 years had both beneficial as well as detrimental effects. The positive trends include the progress in animal breeding, resulting in higher productivity, performance and efficiency of some breeds and higher quality of the related commodities. This situation specifically applies to dairy cattle breeds where, e.g. the average annual performance increased from 6500 litres per milk cow in 2007 to almost 7500 litres in 2012. The main production of beef is still ensured by dairy and multipurpose cattle. However, keeping beef specialized cattle is gaining its importance, especially due to growing exports of living calves and young beef to other, mainly EU countries. This situation goes together with the enhanced beef breeding programmes that improved significantly over the last 20 years. The overall increase of numbers of goats, sheep and beef cows used in grazing systems was due to financial support from the European Agricultural Fund for Rural Development (EAFRD) and some other national subsidies targeting the keeping of ruminants.

In addition, the Ministry of Agriculture has been permanently supporting the traditional and at-risk breeds within the framework of the National Programme on Animal Genetic Resources for Food and Agriculture that was launched already in 1996. It covers 22 breeds of cattle, pig, sheep, goats, horses, rabbits, poultry, geese, coypu, breeding bees and fish that are supported primarily within their in-situ conditions. Also, the growing acreage of permanent grass cultures covering now around 30% of agriculture land together with the increasing interest on organic farming, locally produced food products and integrated agriculture mean better opportunities for the implementation of various environmental measures and the overall growing contribution of the sector to the protection of water, air, soil and biodiversity.

However, many aspects of animal genetic resources underwent negative changes that were caused by numerous factors - growing competition on the domestic and the EU markets, the global economic situation and trends, not optimal setting and flow of some of the national supporting schemes, growing dependence of livestock keepers and related commodity producers on national and EU financial support, low flexibility of the sector and small diversification of income of many agriculture entrepreneurs and some other elements.

All these factors combined led to the decline in numbers of some species, especially pigs, poultry and some dairy cattle and loss of jobs in agriculture, especially in rural areas. It also resulted in decreased competitiveness of some areas of production connected to animal genetic resources and lowered ability to add value to the basic commodities (milk, meat and eggs) leading to their growing export to other countries for processing and growing import of completed foodstuff. The changes are also needed in legislation and policies related to animal breeding in order to mitigate the above-mentioned negative trends. One of the key challenges will be to promote the active role of research institutions and their efforts to translate the project results into the agriculture practice. Also, the state administration needs to enhance its promoting as well as controlling role of the various practical aspects related to supporting schemes management, keeping of herd books and pedigree recording, breeds performance testing, certification of breeders ´associations, etc. The Czech Republic also needs to establish the overall national strategy for the animal genetic resources sector reflecting the current trends and developments on the national and international levels.

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.

n/a

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).

We can basically provide two data sources dealing with the statistical data on import and export of animal genetic resources out and into the country (both in the Czech language only):

http://portal.mze.cz/public/web/mze/zemedelstvi/publikace-a-dokumenty/zelene-zpravy/
http://www.czso.cz/csu/redakce.nsf/i/zo_se_zbozim_podle_pohybu_zbozi_preshranicni_statistika

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.

Firstly, it needs to be noted that the changes described further in the text cover longer period than the last decade, more precisely they would be relevant to two recent decades as trends over longer period of time are better observable and some data are more sufficient. So, in terms of species involved, the most economically important species were the subject of changes of patterns in export and import, i.e. mainly cattle, pigs and poultry species. In terms of regions involved, the European countries dominants in both our import and export of living animal genetic resources, however some other countries outside of Europe do take its part in the overall trade balance and results. We have recorded the growing trends of export of living animals namely to these countries: Belgium, Germany, Croatia, Hungary, Poland, Slovakia, but also to Turkey and some recently opened markets in Ukraine or Kosovo. The growing trends of import of living animal genetic resources have been recorded from Denmark, the Netherlands, but also from more remote countries as, e.g. Canada, Israel or Indonesia.

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.

The growing import of some breeds and their genetic material into the Czech Republic and growing export of other breeds out of the country in the last approximately 20 years affected several aspects of animal genetic resources management. Firstly, the progress in breeding, especially within cattle species meant the growing demand of producers for breeds with high yield of meat and milk. While the demand for the animal products and commodities remains in our country rather constant or is even slightly growing, keeping more efficient breeds and an easy access to cheaper animal commodities and products from the import meant the overall decline of numbers of animals, especially dairy cattle, pigs and poultry. Considering the overall breed composition, it remained more or less unchanged, with one significant exception related to the beef cattle, which breeds were enhanced in the 1990s in terms of number of breeds, breeding programmes and import of quality genetic material from other countries. The impact of the changes was twofold, loss of smaller farms and traditional jobs in agriculture in remote rural areas on one side and concentration of the production in larger, more effective, intensive farms and traditional production areas on the other side. Considering the domestic organic market, it underwent an interesting development, which balanced to a certain extent the changes mentioned above. The interest of consumers and traders in organic food and materials as well as locally produced food has been steadily growing. At present, approximately 11.4% of total agricultural acreage is farmed organically. In this respect, the Czech Republic is above the EU average. There are about 4,022 organic farms varying significantly in size with a predominant focus on grasslands, although the number of cash crop producers has been also increasing.

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)	medium	medium	The effect of the product demand is partially modulated by the market potential in the EU open market conditions. However two examples can be given: 1. After 1991, there was a sharp decline in wool prices which destroyed almost the entire wool-sheep population (1990 wool breeds were 63%, combined breeds 36.3%, 0.6% meat breeds and 0.1% dairy breeds) and stepwise switched to a meat production. In 2013, 48% are combined breeds, 40% meat and 12% dairy breeds. 2. In broiler rabbits, since 2003, demand for relatively expensive rabbit meat (compared to other types of meat in the domestic market) decreased and most breeders declined stocks, mainly in farm conditions. Of a total of 12 million broiler rabbits (of which 93% were on farms) there is a decline to 6,6 million.
Changing demand for livestock products (quality)	low	medium	The trend of demanding quality products has always been present in this country, but with decreasing purchase power the main driver is the price. Niche markets are developing - growing demand for sheep and goat cheese during the last decade resulted in an increase in numbers (in goat doubled since 2004) and continues a shift from individual breeders to breeding in larger herds and expanding specialty cheese-making farms. For this purpose, the Anglo-Nubian and recently Saanen goats are imported both for crossbreeding and straight breeding, and also meat goat breeds (Boer). One local breed of pig is conserved in vivo and used in limited quantities as a “special quality product”.
Changes in marketing infrastructure and access	high	high	The livestock keepers use both domestic as well as foreign markets to sell their products. While the domestic market is still the most important one, producers have often found interesting opportunities in other countries.
Changes in retailing	high	low	The recent expansion of supermarkets meant the improvement of easy access to livestock products, especially for customers and consumers. For livestock keepers and producers, the change was two-sided. They have the opportunity to sell their products in the supermarkets, but the environment is overall more competitive as the supermarkets often import cheap products in large quantities from their mother countries or elsewhere.

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 international trade in animal products (imports)	medium	medium	Higher imports of cheap animal products through the supermarkets mean higher competition in domestic markets for local producers. Mainly the pig farming is controlled by market economy (seasonality of demand, surpluses on the market, falling prices, import from the EU countries, pricing hypermarkets). Low purchase prices of meat and high inputs do not allow the Czech farmers to compete with foreign producers of pork, who are often strongly supported by the state and are also better organized into production-processing units. Therefore, the continuous decrease in numbers of pigs is the reality (50% in 2013 comparing to 2004).
Changes in international trade in animal products (exports)	medium	low	Please, see the comments above.
Climatic changes	low	low	There are no significant impacts of climate change on animal production systems in the Czech Republic. However, some aspects are worth mentioning. What is evident is the change of water regimes within the landscape bringing more frequent extreme weather events - periodic summer droughts or floods. Therefore, in some parts of the Czech Republic, the risk of seasonal shortage of fodder and forage designated primarily to animals could become reality. Moreover, changes in weather patterns can help spreading some diseases and pathogens.
Degradation or improvement of grazing land	medium	medium	The overall area of grazing land is slowly growing. Support for maintaining pasture lands under agro-environmental scheme resulted in increased numbers of cows in the suckler-cows system, of which the half are specialized meat breeds, mostly recently introduced, and also in numbers of sheep.
Loss of, or loss of access to, grazing land and other natural resources	none	none	n/a
Economic, livelihood or lifestyle factors affecting the popularity of livestock keeping	low	low	The popularity of livestock keeping has not changed significantly in recent years. Traditional poultry keeping for household self-supply of eggs for example still makes 40% of consumption. These keepers do not use common hybridization programs of global companies, for such production there are domestic hybridization programs. Also new activities have emerged, e.g. agrotourismus, organic farming, etc. what again contributes to the development of some sectors (nearly 100% sheep and goat dairy and cheese products are organic).

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
Replacement of livestock functions	low	low	The range of the different horse breeds starts copying situation in other European countries including imports of non-traditional breeds and increasing the number of small horse breeds because of the growing interest in equestrian sport of children. Slowly is growing also the interest in restoring the use of heavy cold blood horses in environment-friendly logging.
Changing cultural roles of livestock	none	none	There are no specific cultural roles of livestock.
Changes in technology	medium	medium	Many characteristics of animal genetic resources management have improved in recent years - animal health, the quality of fodder, enhanced animal keeping standards, reproduction systems, etc. New technologies required for higher production efficiency resulted in changes in breeding (hybridization programs, use of marker assisted selection, import of exotic breeds).
Policy factors	medium	medium	The livestock sector in the Czech Republic as the EU Member State, taking into account its economic and market power and agriculture production capacity is being and will be influenced mainly by various EU policies.
Disease epidemics	none	low	None at present, but it might be changed with any changes in natural and/or climatic changes, any origin it can be, and with increasing cross-border movement of animals and other live entities.

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)	1	7
Cattle (specialized beef)	0	22
Cattle (multipurpose)	1	1
Sheep	5	26
Goats	2	8
Pigs	3	3
Chickens	1	9

Species	Locally adapted breeds	Exotic breeds
Horses	4	18
Geese	1	5
Ducks	0	5
Rabbits	7	12

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)	8	8	high	low	medium	low	high	medium
Cattle (specialized beef)	22	12	high	none	none	none	low	low
Cattle (multipurpose)	2	2	high	medium	high	low	high	high
Sheep	32	2	medium	low	low	low	low	none
Goats	10	2	medium	low	low	none	low	none
Pigs	6	6	medium	none	low	low	high	none
Chickens	1	1	medium	low	low	none	none	none
Horses	22	22	high	low	low	low	none	none
Geese	1	1	medium	none	none	none	none	none
Ducks	1	0	low	none	none	none	none	none
Rabbits	7	7	medium	low	none	low	none	none

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	high
Research	high
Knowledge	medium
Awareness	medium
Infrastructure	high
Stakeholder participation	medium
Policies	medium
Policy implementation	medium
Laws	high
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	There are 3 agricultural universities and more than 40 vocational and higher professional schools oriented to agriculture providing adequate education in animal farming.
Research	There are several institutions providing for research activities. The Institute of Animal Science in Prague-Uhrineves is the most important one focusing on zootechnical research, application of new production forms and methods in most of the economically important animal breeds. It also profiles new generation of animal scientists in underlying scientific disciplines. Please see more detailed information at http://www.vuzv.cz/index.php?p=historie&site=en. Apart from other research activities based directly within the agriculturally oriented universities, the most important institute dealing with breeding fish and aquaculture is the Research Institute of Fish Culture and Hydrobiology in Vodnany (http://www.frov.jcu.cz/en/vurh-frov-ju/vurh-ju-ve-vodnanech), and the one dealing with breeding bees is the Bee Research Institute in Dol (http://www.beedol.cz/bee-research-institute/).
Knowledge	The extent to which stakeholders in animal genetic resources management have access to the knowledge in order to perform their roles effectively is rather high. A range of websites is available, as well as periodically published magazines or propagating materials of the state administration bodies and breeders´ associations and other entities. However, the information is sometimes not easy and quick to find, or is not easy understandable. Given these facts, we would rather put to the table above "high, but with a potential for improvement).
Awareness	The comment is similar to the above one - the overall characterization of awareness would be rather good, but with a potential for improvement.
Infrastructure	High, with a potential for improvement in its utilization.

	Description
Stakeholder participation	High, with a potential for improvement. Stakeholder groups and breeders´ associations have their periodic meetings several times a year and state administration representatives regularly take part in these meetings, and communicate as needed through all other possible channels (phone, internet, personal consultations, etc.)
Policies	The general framework strategy for animal genetic resources management and development is still missing and the process of its development has not been started yet. Therefore, one of the important elements of governance of this sector is not fulfilled. However, the Ministry of Agriculture has implemented several supporting schemes and programmes aimed at breeding programmes, at-risk breeds, etc.
Policy implementation	Please, see the comment above.
Laws	There are no significant problems or gaps in terms of coverage of laws of different thematic areas related to animal genetic resources management, i.e. the Czech Republic has sufficient number of laws covering, e.g. animal breeding and their evidence, animal health and welfare issues, veterinary issues, etc. Moreover, a number of legislative norms are under permanent revision due to provisions at the EU level being frequently adopted. In terms of intelligibility of laws and the need of their operative adaptation to the needs of the state administration, there is a room for improvements.
Implementation of laws	Please, see the comment above.

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).

The tradition of managing animal genetic resources by common approach and breeding strategy for respective species and breeds and its institutionalizing through establishing keepers' and breeders' is very long and therefore for many decades breeding have been kept on a high level. Very important is there a continued support on the Ministry of agriculture which provide extensive financial support to breeding schemes and related measures to those breeders' organizations performing it. Since 1996, keepers of endangered local breeds are joined and supported under the National Program on Conservation and utilisation of Farm Animal Genetic Resources)

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)	no	no	yes	no	no	no	no
Cattle (specialized beef)	no	no	yes	no	no	no	no
Cattle (multipurpose)	no	no	yes	no	no	no	no
Sheep	no	no	yes	no	no	no	no
Goats	no	no	yes	no	no	no	no
Pigs	no	no	yes	yes	no	no	no
Chickens	no	no	yes	no	no	no	no
Horses	yes	no	yes	no	no	no	no
Geese	no	no	yes	yes	no	no	no
Ducks	no	no	yes	yes	no	no	no
Rabbits	no	no	yes	no	no	no	no

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

n/a

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)	1	7	1	7	1	7	1	7	1	4	0	1	1	4	1	7
Cattle (specialized beef)	0	22	0	22	0	12	0	12	0	12	0	0	0	0	0	15
Cattle (multipurpose)	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1
Sheep	5	27	5	27	5	27	5	27	5	14	0	0	2	0	2	2
Goats	2	8	2	7	2	7	2	7	2	8	0	0	2	8	0	0
Pigs	3	3	3	0	3	3	3	3	3	3	0	0	1	0	3	3
Chickens	1	11	1	11	1	11	1	11	1	11	0	0	1	1	0	1
Horses	6	16	6	16	4	8	6	16	4	0	0	0	4	0	4	6
Geese	1	5	1	5	1	5	1	5	1	5	0	0	1	1	0	1
Ducks	0	5	0	5	0	5	0	5	0	5	0	0	0	1	0	1
Rabbits	7	12	7	12	7	12	7	12	0	0	0	0	0	0	0	0

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)	1	0	0	7
Cattle (specialized beef)	0	22	0	22
Cattle (multipurpose)	1	0	0	1
Sheep	1	12	4	15
Goats	0	4	2	3
Pigs	0	0	3	3
Chickens	1	0	0	11
Geese	1	0	0	5
Ducks	1	0	0	5
Horses	6	16	0	0
Rabbits	3	6	4	6

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

Species	Training	Research
Cattle (specialized dairy)	high	high
Cattle (specialized beef)	high	high
Cattle (multipurpose)	high	high
Sheep	high	medium
Goats	medium	high
Pigs	medium	medium
Chickens	medium	medium
Geese	low	low
Ducks	low	low
Horses	high	medium
Rabbits	low	low

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)	high
Cattle (specialized beef)	high
Cattle (multipurpose)	high
Sheep	high
Goats	high
Pigs	high
Chickens	high

Species	Organization of livestock keepers
Horses	medium
Ducks	low
Geese	low
Rabbits	medium

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	none	medium	high	medium	medium	none	none	none
Animal identification	high	low	low	high	high	none	none	none
Recording	high	low	medium	high	high	none	none	none
Provision of artificial insemination services	none	none	low	high	high	medium	none	none
Genetic evaluation	none	medium	medium	medium	medium	low	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	none	low	high	medium	none	none	none	none
Animal identification	high	none	high	high	low	none	none	none
Recording	high	none	high	high	low	none	none	none
Provision of artificial insemination services	none	none	medium	low	low	low	none	none
Genetic evaluation	none	low	medium	medium	low	none	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	none	medium	high	medium	none	none	none	none
Animal identification	low	none	high	high	low	none	none	none
Recording	high	none	high	medium	low	none	none	none
Provision of artificial insemination services	none	none	none	none	low	low	none	none
Genetic evaluation	none	medium	medium	medium	none	none	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	none	low	high	medium	none	none	none	none
Animal identification	low	none	medium	high	none	none	none	none
Recording	high	none	high	medium	low	none	none	none
Provision of artificial insemination services	none	none	none	none	low	none	none	none
Genetic evaluation	none	medium	medium	medium	none	none	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	none	medium	high	medium	high	none	none	none
Animal identification	none	none	none	medium	high	none	none	none
Recording	high	none	high	high	high	none	none	none
Provision of artificial insemination services	none	low	none	high	high	none	none	none
Genetic evaluation	none	high	high	low	none	none	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	none	none	high	medium	none	none	none	none
Animal identification	none	none	low	medium	none	none	none	none
Recording	high	none	high	medium	none	none	none	none
Provision of artificial insemination services	none	none	low	none	low	low	none	none
Genetic evaluation	none	none	medium	medium	none	none	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	none	none	high	medium	none	none	none	none
Animal identification	none	none	low	medium	none	none	none	none
Recording	high	none	medium	medium	none	none	none	none
Provision of artificial insemination services	low	none	low	none	low	none	none	none
Genetic evaluation	low	low	low	low	none	none	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	none	medium	high	medium	medium	none	none	none
Animal identification	high	none	high	high	high	medium	none	none
Recording	high	low	medium	high	high	none	none	none
Provision of artificial insemination services	none	low	low	high	high	medium	none	none
Genetic evaluation	none	medium	medium	medium	medium	low	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	none	none	none	medium	medium	none	none	none
Animal identification	none	none	none	medium	medium	none	none	none
Recording	medium	none	none	medium	medium	none	none	none
Provision of artificial insemination services	none	none	none	high	none	none	none	none
Genetic evaluation	low	none	none	none	high	none	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	none	none	none	medium	medium	none	none	none
Animal identification	none	none	none	medium	medium	none	none	none
Recording	medium	none	none	medium	medium	none	none	none
Provision of artificial insemination services	none	none	none	high	none	none	none	none
Genetic evaluation	low	none	none	none	high	none	none	none

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

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

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.

Government is influencing some activities (animal identification, recording and performance testing) by setting respective legal measures, providing financial support for executing these measures and checking its implementation. National commercial companies act mainly as a service for performance recording and evaluation, producing and selling semen doses and providing insemination service. External companies act mainly as providers of breeding material (both live animals and semen doses).
According to the Breeding Law, breeding must in 100% follow requirements set by a respective breeders organization, especially using licensed sires only, but livestock owners/keepers need not be members of that associations. Those who participate on breeding in an advanced mode, i.e. in performance recording, breed evaluation etc., may be estimated to 5-95% depending on species (dairy cattle 95%,beef cattle 65%, pigs 20%, sheep and goats up to10%, poultry, horse and rabbits < 10%).
Rabbits according to the law are not farm animals but hobby animals only so that they do not fall under the Breeding Act. There are some breed clubs joined under the Association of animal breeders which provide limited breeding activities (recording, judging on shows and selecting breeding animals).

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
Ducks	yes
Geese	yes
Horses	yes
Rabbits	no

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)	The Ministry of Agriculture together with its partner institutions implement a range of national supporting programmes and measures, the base of which are stipulated in Act No. 252/1997 Coll. on agriculture, Act No. 154/2000 Coll. on breeding and annually updated Principles published by the Ministry of Agriculture specifying the conditions for financial support in a range of areas, including freshwater fish and honey bee - pedigree recording, implementing and keeping of herd books, performance recording (locally adapted as well as exotic breeds), supporting program for keeping and conserving at risk breeds (locally adapted breeds only, i.e. the National program as mentioned in the question No.9).
Cattle (specialized beef)	as above
Cattle (multipurpose)	as above

Species	Description of policies or programmes
Sheep	as above
Goats	as above
Pigs	as above
Chickens	The National program includes also parental lines maintained in national breeding companies used for their private hybridization programs (Dominant, Horal, Moravia), besides there are breeding programs for Bovans Brown, Bovans Sperwer, Dekalb White, Hisex Brown, ISA Brown and ISA Sussex 22, these in total have 22% share on the market. The support is aimed on specific zoohygienic provisions and enables also some exemptions from obligatory culling out in the case of an outbreak of some contagious diseases (salmonella etc.)
Ducks	The National program includes also parental lines maintained in national breeding companies used for their private hybridization programs (RITO, TTH), besides there are breeding programs for Cherry Valley, Star 53 and Barbaria ducks, these in total have 12% share on the market. The support is aimed on specific zoohygienic provisions and enables also some exemptions from obligatory culling out in the case of an outbreak of some contagious diseases (salmonella etc.)
Geese	The National program includes also parental lines maintained in national breeding companies used for their private hybridization programs (NH 2829 and 2821), besides there are breeding programs for Deutsche Legegans, Eskildsen Schwer and Landes geese, these in total have 62% share on the market. The support is aimed on specific zoohygienic provisions and enables also some exemptions from obligatory culling out in the case of an outbreak of some contagious diseases (salmonella etc.).
Rabbits	For the 7 locally adapted breed enrolled into the National program and conserved in situ by small and hobby breeders there is a support for keeping pedigree book and performance testing scheme.
Horses	There are several Breeders associations keeping stud books and performing breeding programs and these activities are supported by the State (keeping stud books, performance testing, application of insemination and embryo transfer). There are 3 state-operated stallion stud farms. For 4 local breeds there is a support within the National program, which is besides supporting keeping animals in situ (reproduction activities in mares and targeted mating to manage intrabred diversity).

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)	The main aim of the implemented national supporting schemes and programmes is generally to enhance the genetic value of animal breeds, enhance their economic performance as well as health status. The support has helped to reach the goal in some breeds, the identification of animals and their recording is on high level and the performance of many breeds has enhanced, however, a lot of work still needs to be done in some areas.
Cattle (specialized beef)	as above
Cattle (multipurpose)	as above
Sheep	Generally as in cattle. However there are many recently introduced exotic breeds with no clear perspective what may bring problems in breeding (low numbered populations).
Goats	Generally as in cattle
Pigs	Generally as in cattle
Chickens	Generally as in cattle
Ducks	Generally as in cattle

Species	Description of consequences
Geese	Generally as in cattle
Rabbits	The large commercial farms rely 100% on foreign genetics, i.e. import of hybrid genetic material. In rural public there are kept various breeds and/or and hybrids without any registration. For some exotic breeds there are controlled breeders joined in breed clubs which facilitate exchange of breeding animals and also provide them for public.
Horses	Generally as in cattle. However there are many recently introduced exotic breeds with no clear perspective what may bring problems in breeding (low numbered populations).

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.

The continuous and systematic implementation of the breeding programmes and all their important components depends largely on the financial resources provided from the Ministry of Agriculture. One of the weaker points of the system is that the resources are not fixed within the MoA budget for the long-term and have to be sought and allocated annually. It means that every year the total amount of resources differs and the necessary increase to cover inflation and other growing expenses cannot be guaranteed.

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)	Continuous development in breeding programs is being targeted to profitability and selection measures are applied according to the total selection index (SIH) which regards also economical weights of respective traits. There is a trend to include also parameters connected with a more sustainable use and environmental impacts (feed conversion ability, health etc.)
Cattle (specialized beef)	as above
Cattle (multipurpose)	as above
Sheep	Improvement in dual-purpose breeds for utilization in extensive (low input) farming conditions, improve parental (meat) breeds used for hybridization programs, improve milk performance in dairy breeds.
Goats	To improve production performance using available molecular genetic information, especially for utilization in cheese-making.
Pigs	To improve performance for maximum production. To develop breeding programs for alternative (low input) production systems.
Chickens	To improve performance for maximum production, to concentrate breeding on adaptability to small hold conditions and lower level of nutrition. In the only local breed also to cut back existing inbreeding level.
Ducks	To improve performance for maximum production and concentrate breeding on attractivity for small farms and self-supplier keepers.
Geese	To improve performance for maximum production and concentrate breeding on attractivity for small farms and self-supplier keepers.
Rabbits	The priority for locally adapted breeds enrolled in the National program is to keep and broaden the base of keepers to maintain these breeds in sufficient numbers and genetic diversity.These breeds have been developed and selected to produce fur of specific qualities and/or colors. Such utilization recently lapsed and without having sufficient meat-production potential these breeds are critically endangered).

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)	high	none	medium
Cattle (specialized beef)	n/a	n/a	n/a
Cattle (multipurpose)	high	none	medium
Sheep	high	none	medium
Goats	high	none	low
Pigs	high	none	medium
Chickens	high	none	none
Geese	high	none	none
Horses	high	none	low
Rabbits	high	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	yes
Genetic uniqueness	yes
Genetic variation within the breed	yes
Production traits	yes
Non-production traits	no
Cultural or historical importance	yes
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	yes	no	yes	no	no	yes	yes	yes	no	no	yes	yes
Private sector	yes	no	yes	no	no	yes	yes	yes	yes	no	no	yes
Cattle (specialized dairy)	no	no	yes	no	no	yes	yes	yes	no	no	yes	yes
Cattle (specialized beef)	no	no	no	no	no	no	no	no	no	no	no	yes
Cattle (multipurpose)	no	no	yes	no	no	yes	yes	yes	no	no	yes	yes
Sheep	no	no	yes	no	no	yes	yes	yes	yes	yes	yes	yes
Goats	yes	no	yes	no	no	yes	yes	yes	yes	no	yes	yes
Pigs	yes	no	yes	no	no	yes	yes	yes	no	yes	yes	yes
Chickens	no	no	yes	no	no	yes	yes	no	no	no	yes	yes
Ducks	no	no	yes	no	no	yes	yes	no	no	no	no	yes
Geese	no	no	yes	no	no	yes	yes	no	no	no	no	yes
Horses	no	no	yes	no	no	yes	no	yes	yes	yes	yes	yes
Rabbits	no	no	yes	no	no	yes	yes	no	no	no	yes	yes

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.

1. Incentive payments for participants of the National program for conservation genetic resources
2. Assistance in breed management to participants of the National program, included provision of genetic material (live or cryoconserved) for breeding
3. Promotion and PDO labeling of specific product from local Prestice pig breed
4. Special exhibitions and shows
5. Special promotional, educational and contest programs for schools and public.

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.

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	yes
Embryos	yes
Oocytes	no
Somatic cells (tissue or cultured cells)	yes
Isolated DNA	yes

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)	1	0	yes	no	yes	no	yes
Cattle (specialized beef)	0	0	no	no	no	no	no
Cattle (multipurpose)	1	1	yes	no	yes	no	yes
Sheep	2	0	yes	no	no	no	yes
Goats	2	0	yes	no	no	no	yes
Pigs	2	0	yes	no	yes	no	yes
Chickens	0	0	no	no	no	no	no
Horses	4	0	yes	no	no	no	yes

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.

Since 2008 there is a reconstruction program for the Czech Red Cattle in operation. There were no live bulls and only about 20 dams remaining alive. For that purpose we decided to use the only existing embrya (60 pcs) and semen doses collected during 1990's. In 2013 the population increased to 150 live animals while the gene bank supply has been continuously restored by newly produced embrya (250) and semen doses (12 000) from newly produced bulls. Similar project has been introduced for the Czech Red-pied cattle in 2010.

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.

The EUGENA project (European gene bank for animals) within the European Regional Focal Point for AnGR.

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.

The Czech Red and Czech Red Spotted cattle (see Q 25). Similarly the Brown Shorthaired Goat located formerly in two LFA districts only with a population of less than 200, recovered through a targeted support in developing goat dairy farms and market for goat products and through providing financial support for purebred breeding so that there were more than 1000 purebred animals achieved in 2013.

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)	high	low	none	medium	none	none	none	medium	none
Cattle (specialized beef)	low	none	none	none	none	none	none	none	none
Cattle (multipurpose)	high	none	none	none	none	none	none	low	none
Sheep	low	none	none	none	none	none	none	medium	none
Goats	none	none	none	none	none	none	none	medium	none
Pigs	high	none	none	none	none	none	none	none	none
Chickens	low	none	none	low	none	none	none	none	none
Horses	low	none	none	none	none	none	none	none	none

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

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	no	yes	no	no	yes	yes
Embryo transfer	no	no	no	no	yes	no

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.

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	no
Embryo transfer or MOET	yes	no
Semen sexing	no	no
In vitro fertilization	yes	no
Cloning	yes	yes
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	yes	no

30.1. Please briefly describe the research.

There is an advanced international cooperation in research over production of embryonal somatic cells, on factors influencing function of cell nucleus and embryo development, possible ways of cryoconservation gamets etc. in the Research Institute of Animal Science. The national research is dealing with technical procedures of cryoconservation (semen dilutants, freezing process etc.). The development of models predicting breeding values also continually requires and utilizes international cooperation. For the purpose of estimation and utilization genetic diversity there is a massive national research oriented to QTL mapping.

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	n/a	n/a	low	none	n/a
Artificial insemination using nationally produced semen from exotic breeds	n/a	n/a	medium	high	n/a
Artificial insemination using imported semen from exotic breeds	n/a	n/a	high	high	n/a
Natural mating	n/a	n/a	low	none	n/a

Cattle (specialized beef)	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	none	n/a	none	n/a	n/a
Artificial insemination using nationally produced semen from exotic breeds	medium	n/a	medium	n/a	n/a
Artificial insemination using imported semen from exotic breeds	medium	n/a	medium	n/a	n/a
Natural mating	high	n/a	high	n/a	n/a

Cattle (multipurpose)	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	none	n/a	none	none	n/a
Artificial insemination using nationally produced semen from exotic breeds	medium	n/a	high	medium	n/a
Artificial insemination using imported semen from exotic breeds	low	n/a	medium	high	n/a
Natural mating	medium	n/a	low	low	n/a

Sheep	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	none	n/a	none	n/a	n/a
Artificial insemination using nationally produced semen from exotic breeds	none	n/a	none	n/a	n/a
Artificial insemination using imported semen from exotic breeds	low	n/a	low	n/a	n/a
Natural mating	high	n/a	high	n/a	n/a

Goats	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	none	n/a	none	none	n/a
Artificial insemination using nationally produced semen from exotic breeds	none	n/a	none	none	n/a
Artificial insemination using imported semen from exotic breeds	none	n/a	none	none	n/a
Natural mating	high	n/a	high	none	n/a

Pigs	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	n/a	n/a	low	none	n/a
Artificial insemination using nationally produced semen from exotic breeds	n/a	n/a	high	high	n/a
Artificial insemination using imported semen from exotic breeds	n/a	n/a	low	low	n/a
Natural mating	n/a	n/a	low	low	n/a

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.

Using of these advanced technologies depends significantly on actual profitability of given sector. Whereas the whole

animal production sector has been undergoing continuous decline and uncertainty, implementing these activities is still limited.

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	none	There is no common strategy adopted at the national level that would bring together elements of animal, plant, forestry and aquatic genetic resources.
Collaboration in the characterization, surveying or monitoring of genetic resources, production environments or ecosystems	none	Each domain of genetic resources is rather specific in their respective activities concerning characterization, surveying and monitoring of genetic resources.
Collaboration related to genetic improvement	limited	The collaboration in the area of genetic improvement is rather limited, taking place mainly at the expert level, at universities and some specialized institutions.
Collaboration related to product development and/or marketing	none	Each domain of genetic resources is in this respect rather specific.
Collaboration in conservation strategies, programmes or projects	limited	Under the National Programme on Conservation and Utilisation of Plant, Animal and Microbial Genetic Resources for Food and Agriculture the common principles of conservation of genetic resources from different domains are brought together. The main benefits include the coordinated approach of activities under different sub-programmes that are being standardized as much as possible in terms of financial resources allocation, management and auditing.
Collaboration in awareness-raising on the roles and values of genetic resources	limited	At universities and specialized institutions.
Training activities and/or educational curricula that address genetic resources in an integrated manner	limited	At universities
Collaboration in the mobilization of resources for the management of genetic resources	limited	As commented above, the collaboration exists within the framework of the National Programme.

2. Please describe any other types of collaboration.

Please see our comments above.

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

Strengthening the collaboration in management of all domains of genetic resources would be especially beneficial for policy and decision makers at different levels of the state administration. Enhancing the information on the importance of conservation and sustainable utilization of genetic resources would help to bring the issue at the higher political level and

thus enable making better-informed decisions. Another issue is the technical level of collaboration on various scientific projects and activities. Here, there is always an open niche for cooperation among the stakeholders and relevant entities.

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

One of the main constrain is the lack of human and financial capacities to systematically cover all aspects - daily operative work as well as more conceptual and propagation activities at domestic and international level. Especially at the international level, there has recently been quite a fast development in the area of genetic resources, as e.g. expansion of agendas and programme of work of the FAO Commission on Genetic Resources, the ABS issues under the Convention on Biological Diversity, other relevant issues at the EU level, etc.

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

The solution would be to allocate more national resources in terms of financing as well as human capacities, establish regular training programmes aimed at, e.g. legal domestic and international issues, have the possibility to attend specific training workshops focused on, e.g. working with databases, setting priorities, establishing national strategies, raising public awareness and interest in genetic resources in general, and other similar activities.

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).

There is no strategy adopted at the national level addressing systematically the provision or regulation of ecosystem services and connecting this issue to animal genetic resources management. However, some ecosystem services are being provided by the regular management of animal genetic resources and some have been supported even more by the organic farming management (the link to the current action plan on organic farming has been provided in one of the previous chapters or in a separate questionnaire dealing with a country policy and legislative frameworks). The approaches include, e.g. maintenance of some wildlife habitats via grazing; stimulating of plants growth via grazing or browsing; soil formation and soil nutrient cycling via the supply of manure; affecting soil structure and water-holding capacity via dunging; enhancing pollination levels by supporting pollinator keepers and creating habitats for pollinators; maintenance of water quality and quantity via erosion and fertilizers use control; pest regulation by destruction of pests or pest habitats; disease regulation by destruction of disease vectors or their habitats and flood regulation via fire and erosion control.

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).

n/a

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).

n/a

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.

The most complex agro environmental measures have been applied through the European Rural Development program (EAFRD), which i.a. aims to improve the environmental, safety, hygiene and animal welfare status of agricultural holdings and results in support of keeping livestock in a sustainable way. Other measure is the Act No. 76/2002 Coll. as amended by No. 69/2013 on integrated pollution prevention and control that stipulates that the Ministry of Agriculture shall within its competence and from the standpoint of Best Available Techniques (BAT), ensure monitoring of these techniques.

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).

The measures - Good agricultural practice - are being applied in installations for the intensive rearing of poultry and pigs (i.e. 40000 places for poultry, 2000 places for fattening pigs or 750 places for sows). There is an obligation to evaluate regularly application of BAT in farm management, however assessing environmental impacts does requires a longer period.

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).

Agro environmental measures supported within the EAFRD by the EU and national subsidies targeted to keeping ruminants led to significant increase in its numbers, especially as for sheep and beef cows used in grazing systems. Another important ecosystem service that has been continuously supported by the Ministry of Agriculture, which however is not related to animal genetic resources, is the pollination service. There are supporting schemes in place to support bee keepers, facilitating access the bee queens of highest genetic quality and measures for suppression of diseases. Keeping other pollinator species (bumble bees) in artificial conditions and their further distributing is starting to gain its importance.

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.

The integrated national strategy or overall policy combining the elements of environmental protection, ecosystem services and animal genetic resources management is still missing.

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.

One of the effects of changes in agricultural policies over the last two decades was the increase of permanent grasslands within the landscape, primarily in the mountainous and specially protected areas. Considering the management of the grasslands, grazing mainly by cattle and sheep and to the less extent by several horse and goat species started to prevail over the previous long-term type of management - cutting. A range of financial programmes have been supporting the trends up to these days. The ecosystem services provided by this management include increasing of water-holding capacity of the landscape, erosion regulation and thus water quality control.

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.

It is important to maintain the supporting programmes that are currently in place also for the future. There are no major changes planned.

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.

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:

The Integrated Agricultural Register (central register) was established in the Ministry of Agriculture of the Czech Republic in 2007. The central register is a comprehensive database embracing data on pedigree, sex, identification numbers, numbers of animals, movements and changes of animal individuals, herds or flocks of individual species of registered animals. It also embraces data on holdings, keepers, operators of slaughterhouses, operators of certain types of hatcheries, operators of assembly centres, entrepreneurs that directly or indirectly buy and sell registered animals, transporters of registered animals, certain user facilities and sanitary plants. However, this register does not include a complete list of all different breeds present in the Czech Republic, especially some recently kept exotic breeds, it rather focuses on cattle, horses, pigs, sheep, goats, ratites, breeding fish and bees.

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:

Basic phenotypic characterization have always been implemented and utilized in breeding and selection programmes for all species of economic importance, however during the last period it is being extended to cover new specific features.

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:

There is a progress in mapping QTLs in local cattle and goat breeds, which are also being used in selection programs.

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:

The responsibility as for a certain number of locally adapted breeds (enrolled into the National programme) is given by the legislation and executed by the National coordinating centre. In other economically important breeds, such responsibility lies upon respective breeding organizations.

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:

Adoption of Act No. 154/2000 Coll. on breeding in 2000 together with establishment of the electronic central register in 2007 represent the basic institutional responsibility in terms of identification, registration and recording of animal genetic resources. The responsibility as for a certain number of locally adapted breeds (enrolled into the National programme) is also given by the legislation and executed by the National coordinating centre. In other economically important breeds, such responsibility lies upon respective breeding organizations.

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:

Detailed procedures have been already established for locally adapted breeds enrolled into the National programme for Conservation and Utilisation of Animal Genetic Resources.

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:

For locally adapted breeds enrolled into the National programme population status and trends are analyzed annually and give a base for any possible introduction of specific management measures if needed (targeted mating plans, samples taking and utilizing of cryoconserved material, reinforcement of cryoconservation, etc.)

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:

N_A value/Risk status/Measures
N_A>2 N_k/not endangered/regular monitoring, collection and cryoconservation of reproductive material if possible
N_A= 1,2 to 2 N_k/vulnerable/continuous collection and cryoconservation of reproductive material
N_A<1,2 N_k - Insertion of the breed (population) into a protective mode
N_A = 0,8 to 1 N_k/endangered/targeted mating in situ, systematic collection of genetic material for cryoconservation
N_A = 0,8 to 0,5 N_k/critically endangered/application of embryo transfer and/or other biotechnical methods
N_A< 0,5 N_k/nonviable/considering the usefulness of breed reconstruction
Explanatory notes:
N_A= active population size, number of active breeding animals in herd book
N_k = critical population size. This value differs among breeds (according to generation interval, number of progeny per birth, active reproduction lifespan, actual inbreeding coefficient value, trend in total population number) and for a respective period is specified by a Breed management plan. E.g. in the Czech Red cattle, for 2012-2016 the N_k value is 200.

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:

There are some provisions for locally adapted breeds enrolled into the National program (breed reconstruction projects).

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:

Please see Q III/30

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:

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:

n/a

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.

No additional comments on this section is given.

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 national policy promoting the sustainable use of animal genetic resources exists only for locally adapted breeds enrolled into the National Programme for Conservation and Utilization of Animal Genetic Resources that is in place for the period of 2012-2016. Conditions and measures for keeping and breeding of these and all other animal genetic resources are given within the national legislation, namely Act No. 154/2000 Coll. on breeding and Act No. 252/1997 Coll. on agriculture, however, the Czech Republic have not adopted yet any overarching framework policy on the sustainable use of all animal genetic resources.

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:

Yes, partially. The Ministry of Agriculture recently adopted the Action Plan on Organic Farming 2011-2015 that contains specific measures aimed also at enhancing benefits of organic farming to the environment and animal welfare. Further

details of this AP can be found here: http://portal.mze.cz/public/web/file/93837/Akcni_plan_2011_2015_EZ.pdf. Considering the more frequently occurring conventional agricultural production systems of animal genetic resources, the integration of agro-ecosystem approaches is not addressed systematically.

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:

The breeding programmes are regularly reviewed and if necessary also revised mainly at the level of breeder's associations. The programmes are established for major economic species, e.g. cattle, horses, pigs, poultry, sheep, goats and breeding fish and bees.

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:

The separate breeding programmes are in place for each of the major breeds. Even though separate, the programmes include common structural elements, e.g. the analysis of the breed population, the practical aspects of breeding and the breeding goals with a long term perspective.

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:

Given the elements of sustainable utilization of animal genetic resources sector, i.e. maintaining the integrity of production systems and their surrounding environment, meeting the needs of both present and future human generations, having in place the conservation programmes for endangered species and/or breeds and ensuring their involvement into current breeding programmes, as well as avoiding the overexploiting of animal genetic resources, all these elements are fulfilled and there are no major barriers or obstacles in the Czech Republic that would prevent further development of the sustainable use. The framework in which the keepers, breeders, the state administration and other relevant entities operate is given namely by the national legislation and relevant policies that are described in more detail in the separate FAO questionnaire dealing with policy and legal frameworks.

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.

b. Yes, assessments were introduced before the adoption of the GPA.

Please provide further details:

The assessments are being made periodically depending on particular species and breed, usually at the the time of their performance checks. More attention is naturally paid to the original or endangered species and breeds that are enrolled into the National Programme for Conservation and Utilization of Animal Genetic Resources.

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:

The respective systems are further developed in accordance with the EU legislation.

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:

Some research projects are conducted with participation of farmers, breeders' organizations and project outputs are transferred accordingly.

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:

The access of farmers and livestock keepers to information about different breeds of animal genetic resources suitable to their particular type of management has not been in our country restricted in any way. The possibility of farmers and livestock keepers to purchase or import animals or genetic material for breeding can be definitely evaluated as sufficient dependent rather on their present financial situation and of course regulated by breeding and veterinary legislation. Moreover, some supporting services regarding acquiring of animals in order to enhance the genetic status of the breed enrolled into the National Programme can be arranged through the Institute of Animal Science.

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:

At present, there is no special national policy adopted that would deal with the issues of access and benefit-sharing and the implementation of the Nagoya Protocol adopted under the CBD in 2010. However, the debate on the relevant EU regulation is just before its finalization and adoption by the Council of the EU and the European Parliament and the national legislative measures will be mainly based on these final outcomes from the EU process. In addition, at the 14th Regular Session of the FAO Commission on Genetic Resources, a number of provisions have been adopted on this issue that should assist the CGRFA Members in their development of special national ABS policies, strategies or legislative regulations.
Contractual agreements for ABS are used in case of collecting and providing material into/from gene banks.

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:

Specialized research institutions and universities in cooperation with breeders organizations are organizing seminars, workshops and practical training. These activities are supported by the Ministry of Agriculture, producers associations and also sponsored by commercial companies.

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:

Future technical training and support should be oriented towards enhancing utilization modern biotechnologies.

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:

There are no such local specific systems and/or knowledge

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:

There is a successful campaign to promote products form a local pig breed and the conduct of a trade mark is in progress, and similar procedure is being prepared for a beef.

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

The current supporting programmes described above under sections II and III of this questionnaire needs to stay in place also for the future. However, one of the priorities would be to enhance the amount of financial resources and to ensure sufficient human capacities at the technical as well as administration levels in order to further improve the relevant programmes and supporting schemes. Another priority is to establish the overall strategy for the whole animal production sector that would well reflect the current and global strategies and action plans.

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.

No additional comments on this section is given.

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:

Act No.154/2000 on breeding does not include articles speaking specifically on erosion of animal genetic resources, however, the performance testing and other periodically provided tests are carried out in accordance with procedures stipulated within the breeding programmes and are always unified and standardized within a particular breed or selected animal stock types. The specialized entity, i.e. an entrepreneur or breeders´ association authorized by the Ministry of Agriculture, is obliged to perform certain specific activities and has to, e.g. adhere to procedures of testing as required by the breeding programmes, define pedigrees, characteristics and traits of animal genetic resources. Based on this regular testing, the erosion of has been continually assessed and avoided as much as possible in cases where its development was detected.

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:

One of the erosion drivers is the intensive utilization of only few breeds within a species for food and agriculture purposes. Within some breeds, using only a limited number of (the best and internationally used) sires for the breeding might become a problem in the near future. This applies especially to dairy cattle breeds.

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:

Since 1996, keepers of endangered local breeds are joined and supported under the National Program on Conservation and utilization of Farm Animal Genetic Resources http://www.genetickezdroje.cz/, http://eagri.cz/public/web/mze/dotace/narodni-dotace/geneticke-zdroje/narodni-program/

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:

Annual reports of the National program on conservation and utilization genetic resources.

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:

Ad-hoc conservation measures supported by the State since 1990 stepwise evolved into the standard National program on conservation and utilisation genetic resources, which has been included into the national legislation in 2006. In 2013 more than 600 individual private keepers have been participating there.

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:

A small number of breeds is kept in school farms and ecological centres, but not systematically and also the number of that animals is very low.

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:

Species are limited because of lacking conservation methods and skills (routine collection of somatic cells).

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:

Ex situ in vitro conservation measures are an integral part of the National program on conservation and utilization genetic resources. Since 1997 there have been collected semen doses and embryons of cattle, pig, sheep, goat, horse and pig endangered breeds. The material is collected continuously, while the intensity of collecting process is depending on available resources. For operational reasons, we are using also mobile collecting and freezing lab.

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

- ( ) a. Yes
- ( ) b. No

Please provide further details:

n/a

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:

All the locally adapted breeds have been included into the national conservation program during the 1996-2002 period.

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:

To eliminate technical obstacles (lack of reliable methods for cryoconservation in some species, adequate training to achieve better results).

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:

The situations of unpredictable damage or natural disasters to animal genetic resources are being dealt under Act No. 154/2000 Coll. on animal breeding, according to which the Ministry of Agriculture has the right to impose the obligation to the owner of these animals to carry out their transfer and ensure their security so that any harm, loss or misappropriation is prevented. Considering the protective measures for all animals in general, Act No. 246/1992 Coll. on protection of animals against cruelty provides more detailed provisions. It stipulates what kind of actions or acts can be considered as cruel or cruelty and on the other hand states preventive or sanitary situations in which it is necessary to kill the animals and sets up appropriate arrangements and procedures for it. It also lays down the basic rules on keeping and transporting the animals in general and one part is also related to administrative competencies, measures and sanctions for cases of non-compliance.

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:

The arrangements for extraction and use of conserved genetic material following any potential mass loss of animal genetic resources (e.g. through disasters), including arrangements to enable restocking are in place only partially. The codes of conduct regulating the management of genetic material stored in cryo conditions in several gene banks will need to be updated and harmonized with any central restocking plan or plans.

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:

Several research projects focused to enhance knowledge on utility traits of local breeds and develop alternative ways of their in-situ utilization, and projects focused on improving technical procedures in cryoconservation are being funded by the National Agency for Agricultural Research.

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:

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

The priority requirement is to maintain the supporting financial schemes that are in place, especially the National Programme for Conservation and Utilization of Animal Genetic Resources for Food and Agriculture, at least at the current financial levels. Secondly, the state administration and its supporting institutions need to set off particular activities in order to enhance the effectiveness of this Programme. It could be done, e.g. through the annually updated conservation management plans of each supported breed, creation of central electronic database of keepers and livestock enrolled into the Programme, development of the specific awareness raising programmes on the importance of the conservation measures targeting livestock keepers and breeders´ associations, adjustment and harmonization of various elements of legislation and conditions for the support, and last but not least the development of the overall national livestock strategy that would reflect and encompass the development of this sector from the international point of view.

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.

The Czech Republic takes an active part in the meetings of the FAO Commission on Genetic Resources, the Intergovernmental Technical Working Group on Animal Genetic Resources for Food and Agriculture, Convention on Biological Diversity, the European Centre for Genetic Resources (ERFP) and the European Association for Animal Science (EAAP). A number of international activities are carried out on the basis of cooperation agreements with foreign organizations that are focused on supporting the mobility of researchers, organization of reciprocal internships and placements, training and international research programs and joint publications.

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:

The holistic support means the close collaboration among all relevant stakeholders of various backgrounds and interests within the livestock sector. The holistic view should thus reflect the concerns of breeding, agricultural and food production, conservation programmes for at-risk breeds, the issues of sustainable utilization, soil, water and air protection and other environmental and even maybe social aspects. At this level, the cooperation among the institutions is not sufficient, which could be due to limited administration and financial capacities but also a lack of political will.

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 overall national strategy on the management of all animal genetic resources for food and agriculture has not been established yet and there is no concrete planning on when to commence it. However, concerning the traditional and at-risk breeds, the national strategy is in place. It is the National program for Conservation and Utilization of Animal Genetic Resources for Food and Agriculture applicable for the period of 2012-2016. The current situation did not change since the last report of the Czech Republic to FAO in 2012.

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:

Please see the relevant part of the questionnaire on the national policy and legal frameworks where more details on this issue are provided.

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:

Please, see the answer provided under question 48 above.

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:

Relevant data are not recorded for all breeds.

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:

Yes, but data are not recorded for all breeds.

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:

Monitoring trends in populations of locally adapted (endangered) breeds, setting priorities for conservation, implement measures both for in-situ and ex-situ (CRYO) conservation, assisting farmers to execute measures and assessing effectivity of that measures. Organize special education for public and schools, promotion and awareness raising.

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:

Yes for endangered breeds within the National program of conservation and utilisation genetic resources, fewer interaction and coordination between breeding industry and livestock keepers in mainstream breeds

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:

These are promoted in any relevant occasion in media, popular journals and newspapers, national and special shows and exhibitions, through presentations and special actions for public and schools organized at various regional jubilees and special undertakings.

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 respective national legislation has been set up and kept to date in accordance with the EU legislation.

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:

The membership of the Agricultural Chamber of the Czech Republic, established by Act No. 259/1996 Coll., includes various associations active also within the animal genetic resources sector - in particular in its sustainable use, breeding and conservation: the Czech-Moravian Poultry Union; Czech Beekeepers Union; Mlécoop, Sales Corporative; Fishing Association; Association of Rendering Plants; Czech Fleckvieh Association; Holstein Cattle Breeders' Association of the Czech Republic; Czech-Moravian Union of the Pig Breeders and the Union of Farm Animal Breeders**.**

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:

As a response to the continuous awareness rising initiatives of the National Focal Point, Ministry of Agriculture, Platform for organic farming and others, there have been attracted more younger and progressive people interested in keeping local breeds. These tend naturally to networking, using modern communication technologies and generally be more action.

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:

There are 22 registered breeders´ associations authorized by the Ministry of Agriculture. The up-to-date list of their names as well as their websites can be found through the link below:
http://eagri.cz/public/web/mze/zemedelstvi/zivocisne-komodity/uznana-chovatelska-sdruzeni/

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:

More research grants oriented to management of animal genetic resources have been supported through the National Agency for Agricultural Research and through the university research.

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.

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:

Cooperation in developing and implementing models for estimation breeding value based on recorded utility and economical traits (dairy and beef cattle) - Germany, Finland, Estonia, Brazil.

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:

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

- ○ a. Yes
- ◉ b. No

Please provide further details:

The national funding remains stable.

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:

The expenses connected to goals and measures under the GPA have been primarily covered by the national financial sources.

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:

Mali (Building a training centre for breeders 2001-2004)
Zambia (Implementation of controlled artificial insemination for small farmers 2012-2014, Improving utility traits in farm animals in the Kaoma district 2007-2009)
Serbia, Bosna end Herzegovina (Conservation of genepool and improving performance of imported cattle 2005-2009)

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:

Mongolia (Animal marking and identification, implementation of animal recording system 2007-2012)

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:

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:

Activities within the "Hucul International Federation".

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:

EFABIS related activities

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:

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:

No such programs have been identified so far.

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:

Participation in activities of the Hucul International Federation.

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:

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:

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:

Participation in the CBD ABS-preparatory process before and during the Nagoya meeting, subsequently in preparing ensuing EU legislation, regular participation at ITWGR and CGR FAO meetings

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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