E

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 منظمة الأغذية والزراعة للأمم المتحدة

COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Item 5 of the Provisional Agenda

INTERGOVERNMENTAL TECHNICAL WORKING GROUP ON ANIMAL GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Twelfth Session

Rome, 18 – 20 January 2023

DRAFT COUNTRY REPORT QUESTIONNAIRE SUPPORTING THE PREPARATION OF THE THIRD REPORT ON THE STATE OF THE WORLD'S ANIMAL GENETIC RESOURCES FOR FOOD AND AGRICULTURE

TABLE OF CONTENTS

I. INTRODUCTION

The Strategic Plan for the Commission on Genetic Resources for Food and Agriculture (2019–2027) including the Multi-year Programme of Work (MYPOW) adopted that the Commission's Seventeenth Regular Session in 2019 foresees the preparation of *The Third Report on the State of the World's Animal Genetic Resources for Food and Agriculture* (Third Report).[1] The documents *Preparation of the Third Report on the State of the World's Animal Genetic Resources for Food and Agriculture*[2] and *Strategic plan for the Commission on Genetic Resources for Food and Agriculture: Review and update*[3] propose that the Third Report be presented at the Commission's Twenty-first Regular Session in late 2026 or early 2027.

The Third Report is foreseen as an update of *The Second Report on the State of the World's Animal Genetic Resources for Food and Agriculture*[4] (Second Report). Like the Second Report, the Third Report could provide the basis for review and possible updating of the *Global Plan of Action for Animal Genetic Resources*[5] (Global Plan of Action), which is also foreseen in the MYPOW. Preparation of the Third Report will also contribute to enhancing technical capacity among the countries and other stakeholders involved preparation process, which will be country-driven. Reports from countries on national implementation of the Global Plan of Action are foreseen to be one of key sources of information for the Third Report.

The preparation of the Third Report will take into consideration the need to keep country reporting requirements manageable. Countries will therefore be requested to provide a limited amount of information through an electronic questionnaire form. The annex of the present document proposes the structure and content of the questionnaire for country reporting.

II. FORMAT OF THE QUESTIONNAIRE

It is proposed to utilize the questionnaire for the Second Report[6] as the basis for country reporting for the Third Report, with the addition of some new questions and removal of others (see annex). The draft questionnaire has three sections: (i) Executive summary; (ii) Data for updating the parts and sections of the state of the world's animal genetic resources for food and agriculture; and (iii) Progress report on the implementation of the Global Plan of Action for Animal Genetic Resources – 2020 to 2024. The latter section has been used in the past to inform the preparation of *Synthesis Progress Reports on the Implementation of the Global Plan of Action for Animal Genetic Resources*[7,8,9] and will again be utilized for that purpose.

The questions deleted from the questionnaire for the Second Report include those that addressed information required from the animal genetic resources sector for the compilation of *The State of World's Biodiversity for Food and Agriculture*,[10] which are no longer relevant given the publication of that document.

New questions address issues related to the roles of animal genetic resources in adaptation and resilience in the face of climate change (Questions 5 and 24 in the annex), involvement of women and youth in the management of animal genetic resources (Questions 11 and 12), and the development and

[1] CGRFA-17/19/Report, Appendix F.
[2] CGRFA/WG-AnGR-12/23/5
[3] CGRFA/WG-AnGR-12/23/10
[4] https://www.fao.org/3/i4787e/i4787e.pdf
[5] https://www.fao.org/3/a1404e/a1404e.pdf
[6] https://www.fao.org/3/i4787e/i4787e01.htm
[7] https://www.fao.org/docrep/meeting/027/mg044e.pdf
[8] https://www.fao.org/3/a-mm282e.pdf
[9] https://www.fao.org/3/ng621en/ng621en.pdf
[10] https://www.fao.org/3/CA3129EN/CA3129EN.pdf

scaling-up of breeding programmes in challenging environments (Question 24). These additional questions address contemporary issues in the management of animal genetic resources and will potentially inform the preparation of studies on “special topics” for the Third Report. In addition, new rows/columns related to bees managed for food and agriculture have been added to all questions designed to collect information at the species level. New material in the questionnaire, relative to the Second Report, are shaded to facilitate their identification.

III. TECHNICAL SUPPORT TO COUNTRIES

The use of the Second Report questionnaire will allow countries to take advantage of existing capacity in preparation of their reports. Nevertheless, the new addition of new questions, and the involvement of new national stakeholders in the process of report compilation may mean that some capacity building will be required. FAO will therefore support the reporting process by organizing regional and sub-regional capacity-development workshops. It is further proposed that the Domestic Animal Diversity Network (DAD-Net) be used for regular communication with stakeholders on the reporting process and to encourage exchange of information among countries and regions.

Annex
Draft questionnaire

Draft country report questionnaire

for collecting national data to support the preparation of

The Third Report on the State of the World's Animal Genetic Resources for Food and Agriculture

Table of contents

A. 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).

(text)

B. 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? [11] (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. (text)

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). (text)
   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. (text)

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

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.

[11] 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.

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 (none, low, medium, high)	Future impact on animal genetic resources and their management (predicted for the next ten years) (none, low, medium, high)	Describe the effects on animal genetic resources and their management (text)
Changing demand for livestock products (quantity)[12]			
Changing demand for livestock products (quality)[13]			
Changes in marketing infrastructure and access[14]			
Changes in retailing[15]			
Changes in international trade in animal products (imports)[16]			
Changes in international trade in animal products (exports)[17]			
Climatic changes[18]			
Degradation or improvement of grazing land[19]			
Loss of, or loss of access to, grazing land and other natural resources[20]			
Economic, livelihood or lifestyle factors affecting the popularity of livestock keeping[21]			
Replacement of livestock functions[22]			
Changing cultural roles of livestock[23]			
Changes in technology[24]			
Policy factors[25]			
Disease epidemics[26]			
[insert additional driver(s)]			

[12] Changing demand for livestock products (quantity): changes in the quantity of product demanded by the market. For example, population growth, urbanization and higher incomes may have increased demand for meat, eggs and milk. Another possibility is that increasing availability of alternative products may have reduced demand for some livestock products.
[13] Changing demand for livestock products (quality): changes in the type of products demanded by consumers (e.g. greater or lower demand for convenience foods, healthier products, animal welfare friendly products, environmentally friendly products, traditional products or other niche-market products).
[14] Changes in marketing infrastructure and access: changes that improve or reduce livestock keepers' access to markets for their products (e.g. better transport, better access to market information).
[15] Changes in retailing: changes in how animal products are retailed (e.g. expansion of supermarkets).
[16] Changes in international trade (imports): increases or decreases in the importation of animal products into the country. Note that imports and exports of genetic material are covered under Questions 1, 2 and 3.
[17] Changes in international trade (exports): increases or decreases in the extent to which the country's livestock sector is oriented towards production for export. Note that imports and exports of genetic material are covered under Questions 1, 2 and 3.
[18] Climatic changes: departures from the climatic patterns observed in preceding decades. These might include changes in the average temperature and levels of rainfall or changes in the frequency of events such as droughts, floods and hurricanes. Respondents do not have to decide whether these changes are attributable to human-induced climate change. For the future period, respondents are requested to base their answers on their knowledge of animal genetic resources management in the respective country and its vulnerability to the effects of climate change as predicted by the best-available climatic models for the country.
[19] Degradation or improvement of grazing land: changes to grazing land that make it less or more suitable for grazing livestock (e.g. erosion, changes in the species composition of the flora).
[20] Loss of, or loss of access to, grazing land and other natural resources: situations in which grazing lands, arable land used for fodder production, or other resources such as water, are lost (e.g. because of urban or industrial development) or in which livestock keepers' access to such resources is restricted (e.g. changes in regulations may mean that pastoralists are not permitted to use certain grazing lands).
[21] Economic, livelihood or lifestyle factors affecting the popularity of livestock keeping: this refers, for example, to changes in the availability of alternative employment activities outside livestock keeping, changes in the relative attractiveness of livestock keeping in economic terms or changes in lifestyles or lifestyle aspirations that make livestock keeping less or more attractive as an activity.
[22] Replacement of livestock functions: situations in which particular livestock functions are replaced by alternatives. For example: draught animal power may be replaced by mechanical power; livestock's savings and insurance functions may be replaced by banks and insurance companies.
[23] Changing cultural roles of livestock: changes to the roles of livestock in cultural practices and events (e.g. ceremonies, festivals, shows and sports).

5. (NEW) Please indicate the extent to which climatic changes have affected or are predicted to affect animal genetic resources and their management in your country and describe these effects.

Element impacted	Impact on animal genetic resources over last ten years (none, low, medium, high)	Future impact on animal genetic resources and their management (predicted for the next ten years) (none, low, medium, high)	Describe the effects on animal genetic resources and their management (text)
Productivity of animals			
Health and survival of animals			
Costs of animal production			
Cessation of animal production activity			
Shift in species and/or breeds raised			

[24] Changes in technology: technological developments and changes in access to technologies within the livestock sector (e.g. in the fields of animal health, feeding, housing, reproduction or genetics).
[25] Policy factors: this refers to policies that affect the livestock sector. A list of policy areas affecting the livestock sector can be found in *The State of the World's Animal Genetic Resources for Food and Agriculture* (pp. 151–152 of the English version).
[26] Disease epidemics: outbreaks of animal diseases: these may, for example, pose a threat to at-risk breeds (either directly or because of culling programmes). Animal genetic resources and their management may also be affected by other types of disruption associated with epidemics and their management (restrictions on marketing animal products, restrictions on animal movements, etc.).

OVERVIEW OF ANIMAL GENETIC RESOURCES

6. Please provide the number of locally adapted and exotic breeds kept in your country.[27] (number of breeds)

Species	Number of breeds	
	Locally adapted breeds[28]	Exotic breeds[29]
Cattle (specialized dairy)		
Cattle (specialized beef)		
Cattle (multipurpose)		
Sheep		
Goats		
Pigs		
Chickens		
Managed bees		
[species]		

CHARACTERIZATION

7. 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%).

[27] 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.

[28] Locally adapted breeds: 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. In the case of bees, please list locally adapted managed bee species or sub species.

[29] Exotic breeds: breeds that are not locally adapted. Exotic breeds comprise both recently introduced breeds and continually imported breeds. Recently introduced breeds: breeds whose importation was within the last 5 or so generations for the species concerned, and which were imported over a relatively short period of time. These would include breeds that were imported in the recent past but that have not been reintroduced since that time. Continually imported breeds: breeds whose local gene pool is regularly replenished from one or more sources outside your country. Many of the breeds used in intensive production systems or marketed by international breeding companies would be in this category. In the case of bees, please list exotic managed bee species or sub species.

Species	Baseline survey of population size[30](number of breeds)	Regular monitoring of population size[31](number of breeds)	Phenotypic characterization[32](none; low, medium, high)	Molecular genetic diversity studies – within breed[33](none, low, medium, high)	Genetic diversity studies based on pedigree[34](none, low, medium, high)	Molecular genetic diversity studies – between breed[35](none, low, medium, high)	Genetic variance component estimation[36](none, low, medium, high)	Molecular genetic evaluation[37](none, low, medium, high)
Cattle (specialized dairy)								
Cattle (specialized beef)								
Cattle (multipurpose)								
Sheep								
Goats								
Pigs								
Chickens								
Managed bees								
[species]								

[30] Baseline survey of population size: a survey that obtains sufficient population data to determine a breed's risk status at national level. It provides a reference point for monitoring population trends.
[31] Monitoring of population size: a systematic set of activities undertaken to document changes in the population size and structure over time. If a baseline survey was conducted in the recent past, monitoring surveys may not yet have been necessary, but a programme for long-term monitoring needs to be put in place.
[32] Phenotypic characterization: the process of identifying distinct breed populations and describing their morphological and production characteristics within given production environments; it includes the description of the breeds' production environments and recording of their geographical distributions.
[33] Molecular genetic diversity studies – within breed: the genotyping of individual animals within a breed for a set of molecular markers for the purpose of evaluating diversity within the breed and genetic relationships between animals. At breed level, heterozygosity will be the most important parameter to be measured. Increased heterozygosity indicates increased diversity. Relationships between animals are measured based on the proportion of alleles in common across the markers genotyped.
[34] Genetic diversity studies based on pedigree: genetic relationships among animals are estimated based the probability of their sharing alleles from common ancestors. At breed level, average coefficients of inbreeding and/or kinship and their trends over time will be the most commonly used measures.
[35] Molecular genetic diversity studies – between breed: the genotyping of representative groups of animals from a group of breeds for the purpose of evaluating genetic similarity between the breeds. Genetic distance, a measure of the similarity of allele frequencies between breeds, is a commonly used parameter to measure relationships between breeds.
[36] Genetic variance component estimation: use of pedigree and performance data to estimate which part of the phenotypic variance in a population can be explained by different genetic effects.
[37] Molecular genetic evaluation: the inclusion of molecular genetic information in the procedure for genetic evaluation, which includes both the consideration of genotypes for a few specific genes and prediction of "genomic breeding values" by using information from large panels of single nucleotide polymorphisms.

INSTITUTIONS AND STAKEHOLDERS

8. Please indicate the state of your country's capacities and provisions in the following areas of animal genetic resources management. (none, low, medium, high)

	Score
Education[38]	
Research[39]	
Knowledge[40]	
Awareness[41]	
Infrastructure[42]	
Stakeholder participation[43]	
Policies[44]	
Policy implementation[45]	
Laws[46]	
Implementation of laws[47]	

9. 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. (text)

	Description
Education	
Research	
Knowledge	
Awareness	
Infrastructure	
Stakeholder participation	
Policies	
Policy implementation	
Laws	
Implementation of laws	

[38] Education: the state of tertiary education in all areas of animal genetic resources management.
[39] Research: the state of research in all areas of animal genetic resources management.
[40] Knowledge: the extent to which stakeholders in animal genetic resources management (livestock keepers, policy-makers, technical experts, etc.) have access to the knowledge needed to perform their roles effectively.
[41] Awareness: the extent to which all stakeholders in agriculture, rural development and environmental management are aware of the roles and values of animal genetic resources.
[42] Infrastructure: the extent to which the organizational and physical infrastructure needed to deliver services related to animal genetic resources management is in place.
[43] Stakeholder participation: the extent to which individual stakeholders and stakeholder organizations, particularly livestock keepers and their organizations, are involved in and can influence collaborative animal genetic resources management activities at local and national levels.
[44] Policies: the extent to which the country (i.e. national or regional government) has established policy initiatives, strategies, programmes or plans that promote the sustainable use, development and conservation of animal genetic resources. Note that the extent to which such policy measures are necessary may vary depending on national circumstances. In answering this question, please focus on the extent to which the policy measures necessary to ensure the sustainable use, development and conservation of animal genetic resources in your particular national circumstances are in place.
[45] Policy implementation: the extent to which the country's policy initiatives, strategies, programmes or plans promoting the sustainable use, development and conservation of animal genetic resources are being successfully implemented.
[46] Laws: the extent to which the country has put in place a legal framework that is conducive to the sustainable use, development and conservation of animal genetic resources and that protects livestock breeders/owners' rights to manage animal genetic resources as they deem appropriate. Note that creating an appropriate legal framework for the sustainable use, development and conservation of animal genetic resources does not necessarily involve a specific legal instrument targeting this area. Animal genetic resources management can be affected by legislation in many fields.
[47] Implementation of laws: the extent to which the country's laws favourable to the sustainable use, development and conservation of animal genetic resources are being successfully implemented.

10. 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[48])? (text)

11. (NEW) Please indicate the extent of the importance of *women* in the management of local animal genetic resources. (none, low, medium, high)

Species	Importance of women in the management of local animal genetic resources	Importance of youth in the management of local animal genetic resources	Describe in a few words the role of women and youth in the management of local animal genetic resources (text)
Cattle (specialized dairy)			
Cattle (specialized beef)			
Cattle (multipurpose)			
Sheep			
Goats			
Pigs			
Chickens			
Managed bees			
[species]			

12. (NEW) Please indicate the extent of the importance of *youth* in the management of local animal genetic resources. (none, low, medium, high)

Species	Importance of women in the management of local animal genetic resources	Importance of youth in the management of local animal genetic resources	Describe in a few words the role of women and youth in the management of local animal genetic resources (text)
Cattle (specialized dairy)			
Cattle (specialized beef)			
Cattle (multipurpose)			
Sheep			
Goats			
Pigs			
Chickens			
Managed bees			
[species]			

[48] 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)*.

BREEDING PROGRAMMES

13. Who operates breeding programmes in your country? (yes, no)

Species	Government[49]	Livestock keepers organized at community level[50]	Breeders' associations or cooperatives[51]	National commercial companies[52]	External commercial companies[53]	Non-governmental organizations	Others
Cattle (specialized dairy)							
Cattle (specialized beef)							
Cattle (multipurpose)							
Sheep							
Goats							
Pigs							
Chickens							
Managed bees							
[species]							

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.

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

[49] Government: any public-sector bodies.

[50] Breeding programmes operated by livestock keepers organized at community level may include community-based breeding programmes and those based on social breeding mechanisms. Community-based breeding programmes may have been initiated by the community members themselves or by external experts. Social breeding mechanisms traditionally exist in some livestock-keeping communities and include elements such as mental record keeping of pedigrees and performance, and rules regarding the selection and sale of breeding animals. If you indicate that such programmes exist in your country, please describe them in the text field in Question 15.

[51] Breeders' associations or cooperatives include those that operate in more than one country. This category can be distinguished from the category "commercial companies" on the basis of ownership. In the case of associations and cooperatives, the herd owners (individual livestock breeders) are the direct owners of the breeding activity. In the case of commercial companies, the breeding activity is owned by the company's individual owner or shareholders; the herd owners are clients/customers or contractors of the company.

[52] National commercial companies: companies based in the respective country.

[53] External commercial companies: transnational companies based outside the respective country.

14. For how many breeds in your country are the following activities undertaken? (number of breeds)

Tools	[species]	
	Locally adapted	Exotic
Animal identification[54]		
Breeding goal defined[55]		
Performance recording[56]		
Pedigree recording[57]		
Genetic evaluation (classic approach)[58]		
Genetic evaluation including genomic information[59]		
Management of genetic variation (by maximizing effective population size or minimizing rate of inbreeding)		
Artificial insemination[60]		

Note: Do not include activities that are 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.

15. Please indicate how many of the breeds in your country are subject to breeding programmes applying the following breeding methods. (number of breeds)

Breeding method	[species]	
	Locally adapted	Exotic
Straight/pure-breeding only[61]		
Straight/pure-breeding and cross-breeding[62]		

16. Please indicate the state of research and training in the field of animal breeding in your country. (none, low, medium, high)

Species	Training[63]	Research[64]
Cattle (specialized dairy)		
Cattle (specialized beef)		
Cattle (multipurpose)		
Sheep		
Goats		
Pigs		
Chickens		
Managed bees		
[species]		

[54] Animal identification: identification and registration of animals individually with a unique identifier or collectively (by their epidemiological units or groups) with a unique group identifier. (An epidemiological unit is a group of animals with a defined epidemiological relationship that share approximately the same likelihood of exposure to a pathogen. This may be because they share a common environment [e.g. animals in a pen], or because of common management practices. Usually, this is a herd or a flock. However, an epidemiological unit may also refer to groups such as animals belonging to residents of a village, or animals sharing a communal animal handling facility.)

[55] Defining a breeding goal: specifying which traits should be improved by a breeding programme, in which direction, and the relative emphasis given to each trait.

[56] Performance recording: recording, for individual animals, of data on traits of economic importance, such as milk yield, growth, reproduction, health and longevity. The recorded data can be used for management and selection decisions.

[57] Pedigree recording: maintenance of a register recording the line of ancestors of individual animals. Usually the pedigrees of livestock are maintained by governmental or private record associations or by breed organizations.

[58] Genetic evaluation (classical approach): the estimation of breeding values, typically through the joint analysis of pedigrees and data from performance recording.

[59] Genetic evaluation including genomic information: the estimation of breeding values, through the joint analysis of pedigrees, data from performance recording and genomic information.

[60] Artificial insemination: the process by which sperm is placed into a female's uterus (intrauterine) or cervix (intracervical) using artificial means and with the intention of impregnating the female, rather than by natural mating.

[61] Straight/pure-breeding: the mating of animals to animals of the same breed.

[62] Cross-breeding: the mating of animals to animals of other breeds.

[63] Training: all kinds of training activities undertaken to increase the country's capacity in animal breeding.

[64] Research: research on animal breeding conducted by any stakeholders in the country.

17. Please indicate the extent to which livestock keepers in your country are organized for the purposes of animal breeding. (none, low, medium, high)

Species	Organization of livestock keepers[65]
Cattle (specialized dairy)	
Cattle (specialized beef)	
Cattle (multipurpose)	
Sheep	
Goats	
Pigs	
Chickens	
Managed bees	
[species]	

18. Please indicate the level of stakeholder involvement in the various elements of breeding programmes in your country. (none, low, medium, high)

[species]	Government[66]	Research organizations	Breeders' associations or cooperatives[67]	Individual breeders/livestock keepers	National commercial companies[68]	External commercial companies[69]	Non-governmental organizations	Others
Setting breeding goals[70]								
Animal identification								
Recording[71]								
Provision of artificial insemination services								
Genetic evaluation[72]								

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.

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

18.2. 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. (text)

[65] Organization of livestock keepers: the organization of livestock keepers with respect to all elements of breeding programmes (including, if relevant, community-based breeding programmes).
[66] Government: any public-sector bodies.
[67] Including associations or cooperatives that operate in more than one country.
[68] National commercial companies: companies based in the respective country.
[69] External commercial companies: transnational companies based outside the respective country.
[70] Setting breeding goals: specifying which traits should be improved by a breeding programme, in which direction, and the relative emphasis given to each trait.
[71] Recording: measuring and documenting production and other relevant traits.
[72] Genetic evaluation (classical approach): the estimation of breeding values, typically through the joint analysis of pedigrees and data from performance recording. Genetic evaluation including genomic information: the estimation of breeding values, through the joint analysis of pedigrees, data from performance recording and genomic information.

19. Does your country implement any policies or programmes aimed at supporting breeding programmes or influencing their objectives? (yes, no)

Species	Policies or programmes
Cattle (specialized dairy)	
Cattle (specialized beef)	
Cattle (multipurpose)	
Sheep	
Goats	
Pigs	
Chickens	
Managed bees	
[species]	

19.1. 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). (text)

Species	Description of policies or programmes
Cattle (specialized dairy)	
Cattle (specialized beef)	
Cattle (multipurpose)	
Sheep	
Goats	
Pigs	
Chickens	
Managed bees	
[species]	

20. 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. (text)

Species	Description of consequences
Cattle (specialized dairy)	
Cattle (specialized beef)	
Cattle (multipurpose)	
Sheep	
Goats	
Pigs	
Chickens	
Managed bees	
[species]	

21. 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. (text)

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

Species	Description of future objectives, priorities and plans
Cattle (specialized dairy)	
Cattle (specialized beef)	
Cattle (multipurpose)	
Sheep	
Goats	
Pigs	
Chickens	
Managed bees	
[species]	

23. (NEW) Please describe future objectives, priorities and plans your country may have for the development and scaling-up of breeding programmes in challenging environments. (text)

24. (NEW) Please indicate the extent to which breeding programmes in your country integrate in their breeding objectives aspects related to adaptation and resilience in the face of climate change. (none, low, medium, high) [73]

Species	Integration of breeding objectives related to adaptation and resilience	Describe briefly the traits and underlying data available (text)
Cattle (specialized dairy)		
Cattle (specialized beef)		
Cattle (multipurpose)		
Sheep		
Goats		
Pigs		
Chickens		
Managed bees		
[species]		

[73] Aspects related to adaptation and resilience in the face of climate change may correspond for instance to the inclusion of traits such like heat tolerance, tolerance, resistance or resilience to specific diseases or parasites, or selection for specific phenotypes.

CONSERVATION

25. Please provide an indication of the extent to which your country's breeds[74] are covered by conservation programmes. (none, low, medium, high, n/a)

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

	In situ conservation[75]	*Ex situ in vivo* conservation[76]	*Ex situ in vitro* conservation[77]
Cattle (specialized dairy)			
Cattle (specialized beef)			
Cattle (multipurpose)			
Sheep			
Goats			
Pigs			
Chickens			
Managed bees			
[species]			

26. Does your country use formal approaches to prioritize breeds for conservation? (yes, no)

    26.1. If so, which of the following factors are considered? (yes, no)

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	
Genetic uniqueness	
Genetic variation within the breed	
Production traits	
Non-production traits	
Cultural or historical importance	
Probability of success	

[74] 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 – 2020 to 2024" (below) requests countries to provide information on the criteria they use to assess the risk status of animal genetic resources.

[75] *In situ* conservation: support for continued use by livestock keepers in the production system in which the livestock evolved or are now normally found and bred.

[76] *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.

[77] *Ex situ in vitro* conservation: 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.

27. 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. (yes, no)

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 columns. 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.

Elements of *in situ* conservation programmes	Operators		Species targeted								
	Public sector	Private sector	Cattle (dairy)	Cattle (beef)	Cattle (multipurpose)	Sheep	Goats	Pigs	Chickens	Managed bees	[species]
Promotion of niche marketing or other market differentiation[78]											
Community-based conservation programmes[79]											
Incentive or subsidy payment schemes for keeping at-risk breeds[80]											
Development of biocultural community protocols[81]											
Recognition/award programmes for breeders[82]											
Conservation breeding programmes[83]											
Selection programmes for increased productivity in at-risk breeds[84]											
Promotion of at-risk breeds as tourist attractions[85]											
Use of at-risk breeds in the management of wildlife habitats and landscapes[86]											
Promotion of breed-related cultural activities[87]											
Extension programmes to improve the management of at-risk breeds[88]											
Awareness-raising activities on the potential benefits of at-risk breeds[89]											

[78] Promotion of niche marketing or other market differentiation (including promotion via association of breed products with geographical indications or other indicators of origin): efforts to promote the marketing of a breed's products to a subgroup of consumers who have particular preferences regarding, for example, product quality, the type of production system (e.g. high animal welfare, organic) or the association of products with particular geographical regions or traditions. Geographical indications or other indicators of origin are schemes that protect (via regulation of labelling, etc.) the names of agricultural products and foods originating from a particular geographical area or that are produced in a particular way.

[79] Community-based conservation programme: a programme in which the local people are the primary stakeholders responsible for the development and implementation of the activities undertaken to conserve their genetic resource(s).

[80] Incentive or subsidy payment schemes for keeping at-risk breeds.

[81] 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).

[82] Recognition/award programmes for breeders: schemes in which breeders who make a particular contribution to the conservation and sustainable use of a breed are honoured or recognized in some way (e.g. a programme of annual awards).

[83] Conservation breeding programmes: breeding programmes that maintain breed-specific traits and limit inbreeding.

[84] Selection programme for increased production/productivity in at-risk breeds: genetic improvement programmes for at-risk breeds that aim to increase their production and/or productivity and thereby promote their ongoing use by livestock keepers.

[85] Promotion of at-risk breeds as tourist attractions: the establishment of specific tourist attractions featuring at-risk breeds (e.g. farm parks) or efforts to promote the keeping of at-risk breeds as elements of landscapes that appeal to tourists.

[86] Use of at-risk breeds in the management of wildlife habitats and landscapes: situations in which animals of at risk breeds are used deliberately to alter the environment (usually the vegetation) to create habitats suitable for wildlife or landscapes that are considered desirable by humans – and at the same time to keep the at-risk breeds in use.

[87] Promotion of breed-related cultural activities: the promotion of activities such as shows, festivals and sporting events.

[88] Extension programme to improve the management of at-risk breeds: programmes that target the keepers of at-risk breeds with advice on how to manage them.

[89] Awareness-raising activities providing information on the potential of specific at-risk breeds: activities that provide livestock keepers (or potential livestock keepers) with information on the potential (e.g. unique traits that may be valuable in particular circumstances) of specific at-risk breeds that might otherwise be overlooked.

27.1. 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. (text)

28. Does your country have an operational *in vitro* gene bank[90] for animal genetic resources? (yes, no)

28.1. If your country has no *in vitro* gene bank for animal genetic resources, does it have plans to develop one? (yes, no)

28.2. If yes, please describe the plans. (text)

29. If your country has an *in vitro* gene bank for animal genetic resources, please indicate what kind of material is stored there. (yes, no)

	Stored in national genebank
Semen	
Embryos	
Oocytes	
Somatic cells (tissue or cultured cells)	
Isolated DNA	
[Other]	

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

	Cattle (specialized dairy)	Cattle (specialized beef)	Cattle (multipurpose)	Sheep	Goats	Pigs	Chickens	Managed bees	[species]
Number of breeds for which material is stored (number of breeds)									
Number of breeds for which sufficient material is stored to allow them to be reconstituted[91](number of breeds)									
Does the collection include material from not-at-risk breeds? (yes, no)									
Have any extinct populations been reconstituted using material from the gene bank? (yes, no)									
Have the gene bank collections been used to introduce genetic variability into an *in situ* population? (yes, no)									
Have the gene bank collections been used to introduce genetic variability into an *ex situ* population? (yes, no)									
Do livestock keepers or breeders' associations participate in the planning of the gene banking activities? (yes, no)									

30.1. 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. (text)

31. 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)

31.1. If yes, please describe the plans, including a list of the countries involved. (text)

32. 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. (text)

[90] *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.

[91] For information on how much material is needed to reconstitute a population, please see the FAO guidelines *Cryoconservation of animal genetic resources*, in particular pages 17–19 and Tables 7–10.

REPRODUCTIVE AND MOLECULAR BIOTECHNOLOGIES

33. Please indicate the level of availability of reproductive and molecular biotechnologies for use in livestock production in your country. (none, low, medium, high)

Biotechnologies	[species]
Artificial insemination[92]	
Embryo transfer[93]	
Multiple ovulation and embryo transfer[94]	
Semen sexing[95]	
In vitro fertilization[96]	
Cloning[97]	
Genetic engineering[98]	
Molecular genetic or genomic information[99]	
Transplantation of gonadal tissue[100]	

33.1. Please provide additional information on the use of these biotechnologies in your country. (text)

34. 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. (yes, no)

Stakeholders	Artificial insemination	Embryo transfer	[insert technology]
Public sector[101]			
Breeders' associations or cooperatives			
National non-governmental organizations			
Donors and development agencies			
National commercial companies[102]			
External commercial companies[103]			

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

[92] Artificial insemination: the process by which sperm is placed into a female's uterus (intrauterine), or cervix (intracervical) using artificial means and with the intention of impregnating the female, rather than by natural mating.
[93] Embryo transfer: a step in the process of assisted reproduction in which embryos are placed into the uterus of a female with the intent of establishing a pregnancy.
[94] Multiple ovulation and embryo transfer (MOET): a technology by which a single female that usually produces only one or two offspring can produce a litter of offspring. It involves stimulation of a female to shed large numbers of ova, natural mating or artificial insemination, collection of fertilized ova (either surgically, or non-surgically through the cervix), and transfer (usually non-surgically through the cervix) of these fertilized ova to recipient females.
[95] Semen sexing: the separation of mammalian sperm into those bearing an X chromosome and those bearing a Y chromosome, in order to be able to produce, via artificial insemination or *in vitro* fertilization, animals of a specified sex.
[96] *In vitro* fertilization: the process whereby an egg is fertilized with sperm outside the body of the animal before being re-implanted into the uterus.
[97] Cloning: the process of creating genetically identical organisms by nuclear transplantation.
[98] Genetic engineering: the direct manipulation of an organism's genome using biotechnology.
[99] Molecular genetic or genomic information: information contained in a nucleotide base sequence in chromosomal DNA or RNA, which may be used to estimate breeding values, in the selection of progeny, to detect carriers of diseases or for marker assisted introgression of genes.
[100] Please see the FAO guidelines *Cryoconservation of animal genetic resources*, page 115.
[101] Public sector: all public-sector organizations, including veterinary services, research organizations and universities.
[102] National commercial companies: companies based in the respective country.
[103] External commercial companies: transnational companies based outside the respective country.

35. Please indicate which biotechnologies your country is undertaking research on. (yes, no)

Biotechnologies	Public or private research at national level	Research undertaken as part of international collaboration
Artificial insemination		
Embryo transfer or MOET[104]		
Semen sexing[105]		
In vitro fertilization		
Cloning		
Genetic engineering		
Use of molecular genetic or genomic information for estimation of genetic diversity		
Use of molecular genetic or genomic information for prediction of breeding values		
Research on adaptedness based on molecular genetic or genomic information		
[insert technology]		

35.1. Please briefly describe the research. (text)

[104] Embryo transfer: a step in the process of assisted reproduction in which embryos are placed into the uterus of a female with the intent of establishing a pregnancy. Multiple ovulation and embryo transfer (MOET): a technology by which a single female that usually produces only one or two offspring can produce a litter of offspring. It involves stimulation of a female to shed large numbers of ova, natural mating or artificial insemination, collection of fertilized ova (either surgically, or non-surgically through the cervix), and transfer (usually non-surgically through the cervix) of these fertilized ova to recipient females.

[105] Semen sexing: the separation of mammalian sperm into those bearing an X chromosome and those bearing a Y chromosome, in order to be able to produce, via artificial insemination or *in vitro* fertilization, animals of a specified sex.

36. 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. (none, low, medium, high, n/a)
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.

[species]	Ranching or similar grassland-based production systems[106]	Pastoralist systems[107]	Mixed farming systems (rural areas)[108]	Industrial systems[109]	Small-scale urban or peri-urban systems[110]
Artificial insemination using semen from locally adapted breeds					
Artificial insemination using nationally produced semen from exotic breeds					
Artificial insemination using imported semen from exotic breeds					
Natural mating					

37. 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. (text)

[106] Ranching or similar grassland-based production systems: systems in which animals are grazed on privately owned grassland and/or fed largely on feed obtained from grassland.
[107] Pastoralist systems: systems in which the livestock keepers move with their herds or flocks in an opportunistic way on communal land to find feed and water for their animals (either from or not from a fixed home base).
[108] Mixed systems: systems in which livestock keeping is integrated with other agricultural activities, together forming a whole.
Mixed systems (rural areas): mixed systems that do not fall in the category "small-scale urban or peri-urban".
[109] Industrial systems: large-scale landless production systems in which the production environment is highly controlled by management interventions. (Landless systems are those in which livestock production is separated from the land where the feed given to the animals is produced.)
[110] Small-scale urban or peri-urban systems: small-scale (as judged by nationally relevant criteria) systems situated in or close to a city or large town from which products (e.g. milk) are supplied to the markets of the respective city or large town; these systems may be "landless" (backyard or scavenger) or, in peri-urban areas, may involve mixed farming.

C. PROGRESS REPORT ON THE IMPLEMENTATION OF THE GLOBAL PLAN OF ACTION FOR ANIMAL GENETIC RESOURCES – 2020 TO 2023

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:

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:

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:

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:

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:

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:

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:

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:

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:

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:

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:

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.):

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:

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:

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:

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:

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:

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.

a. No exotic breeds are being used for agricultural production
b. Yes, assessments were introduced before the adoption of the GPA
c. Yes, assessments were introduced after 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:

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:

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 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:

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:

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:

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:

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:

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:

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:

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

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.):

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:

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:

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:

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:

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: In situ conservation – support for continued use by livestock keepers in the production system in which the livestock evolved or are now normally found and bred.
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:

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:

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:

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:

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

a. Yes
b. No

Please provide further details:

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:

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:

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:

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:

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:

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:

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.):

Strategic Priority Area 4: Policies, Institutions and Capacity-building

- 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:

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:

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:

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:

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:

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:

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:

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:

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)?
Glossary: National Focal Point for the Management of Animal Genetic Resources: the National Coordinator for the Management of Animal Genetic Resources and his or her support staff within the institution responsible for coordinating activities concerning the management of AnGR (http://www.fao.org/docrep/014/ba0054e/ba0054e00.pdf).

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:

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:

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:

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

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

Please provide further details:

59. Are there any national NGOs active in your country in the fields of:
Characterization?
a. Yes
b. No
Sustainable use and development?
c. Yes
d. No
Conservation of breeds at risk?
e. Yes
f. No

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

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:

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:

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:

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:

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:

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:

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:

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:

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:

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:

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:

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 (next ten years)	Reasons	Actions required
[text]	[text]	[text]