



Country report

supporting the preparation of

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

including sector-specific data contributing to

The State of the World's Biodiversity for Food and Agriculture

- 2013 -

Country: Saint Vincent and the Grenadines

I. EXECUTIVE SUMMARY

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

The executive summary should contain information on:

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

The Government of Saint Vincent and the Grenadines macro-economic policy reflects a commitment to the revitalization of the main productive sectors and the creation of jobs for the unemployed.

The Ministry supports the livestock sector through a dedicated disease surveillance programme that addresses health care issues in the wider livestock production community, and includes quarantine systems management. The livestock production unit ensures the timely and efficient breeding of superior stock for sale at concessionary rates to farmers for stock improvement. The success of this programme requires an early and systematic evaluation, as it is questionable that farmers utilize this superior stock for breeding purposes but for meat instead.

Increased emphasis has been placed on preparing the foundation for export led activities in the sector, focusing on the quality/standards issues to meet the requirements of the regional and international markets. A recently established trade in live cattle with Grenada and subsequently St.Lucia has revealed that the animal genetic resource if not properly managed, through such trade may cause animal population to be at risk and at the same time decrease our genetic diversity. The census of 2000 and subsequent animal count in 2013 has revealed that the livestock population for the different species remain the same with the exception of pigs. However, there is a downward trend in the consumption of beef and it gives a good opportunity to produce this commodity for export.

The Ministry over the years has maintained a revolving sire programme for goats and sheep. A farmer with at least ten female head of stock are loaned a male for a specified period to improve stock quality. An artificial insemination programme in pigs is also ongoing, while A.I in goats is in its infant stage of implementation. Livestock production is dependent on a combination of factors, with the main factors being the genetic make-up of the animal, the standard of animal management and the quality of feed or nutrition offered to the animal. The animal production sector may have many of the factors for improvement in place; however the systems may not be functioning because of other constraints.

The productions systems undertaken by livestock farmers in SVG are not significantly threatening to the ecosystem.

There are some situations where sheep and goats are let loose to forage on herbage on hillsides where there is an abundance of very good forage. Since this can cause damage to the ecosystem in the dry season, the recommended production systems of sheep and goats have taken the sustainability of the environment into consideration. Other livestock are mainly reared in pens; therefore they pose very little risk to the ecosystem. Other farming systems farmyard manure, especially on farms where crops are grown and livestock reared. This is incorporated into the soil to enhance productivity and can lead to a reduction in the use of chemical fertilizers.

On the downside, the Ministry of Agriculture does not have a dedicated livestock research and development arm and therefore is not reflected in their annual work plan. There is no national policy on animal genetic resources management to guide the scope of work. The human capacity is inadequate in expertise in animal genetics and breeding. The veterinary laboratory is inadequately equipped to support the research activities of animal genetic resource. There is no facility on the island that can secure readily available liquid nitrogen for conservation. Notwithstanding this limitation, there exists a vast network of support from regional and international organizations from which it sources some research support. These agencies include the University of the West Indies (UWI), CaribVET, INRA, and Caribbean Agricultural Information Systems (CAIS).

The Livestock Division's critical role is established as necessary in this development thrust. To this end, staff skills enhancement must be a continual programme for training and retraining as necessary for continued functioning and provision of support to the livestock sector for the small staff. It is important that the same Ministry procures the required human resource base with key skills required for broader support to the sector for improved performance. In relation to the above, pivotal to the process of human capacity building at ministerial/administrative and farm levels and to implement the programme over the next ten years:

- Skills enhancement (technical and academic) through industry specific long- and short-term training workshops, seminars, research undertakings at the academic level in various areas including animal breeding and genetics.
- Provision of training for targeted areas in livestock production (nutrition, animal production including animal genetics).
- Provision of access to scientific and technical literature in collaboration with research institutions as the University of the West Indies CaribVET, INRA, CAIS.
- Promotion of the participation of the youth and new farmers who are looking at alternatives for sustainable livelihoods.

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

FLOWS OF ANIMAL GENETIC RESOURCES

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

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

- yes
- no
- yes but with some significant exceptions

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

Bovine to Grenada (Caribbean)
Porcine to St. Kitts (Caribbean)

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).

Bovine- (Holstein, Brown Swiss, Red Polled and Neltrop breeds and their crosses).
Porcine- (Large white X Landrace, Duroc).
Information is supplied by: Statistical Unit of the Ministry of Agriculture, Rural Transformation, Forestry and Fisheries 2013.

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.

Exports have increased from St.Vincent and the Grenadines to Grenada in Bovine.
Exports in Porcine to St.Kitts and Nevis.

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

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

An accurate account of the Bovine population is unknown since the last Census was conducted in 2000.
The animals are sold without any genetic proficiency testing, any reproductive age, male and female therefore there is no management of the genetic resources.

LIVESTOCK SECTOR TRENDS

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

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

Drivers of change	Impact on animal genetic resources and their management over last ten years	Future impact on animal genetic resources and their management (predicted for the next ten years)	Describe the effects on animal genetic resources and their management
Changing demand for livestock products (quantity)	high	high	An increase in demand for the quantity of livestock to be exported has changed the management of the national Cattle herd. This was a result of the low consumption of beef. A commodity officer for cattle production was assigned and a work programme developed. The objective of the work programme is to addresses breeding and reproduction, record keeping and other animal health issues.
Changing demand for livestock products (quality)	medium	high	An increase in demand for the quantity of livestock to be exported has changed the management of the national Cattle herd. This was a result of the low national consumption of beef. A commodity officer for cattle production was assigned and a work programme developed. The objective of the work programme is to addresses selection and breeding, reproduction, record keeping, pasture management and other animal health issues in an effort to improve the quality of future generations.
Changes in marketing infrastructure and access	high	high	One of the governments mandate is to secure markets for livestock farmers. Through bilateral and regional trade agreements, markets for live animals have been source in the region (St.Kitts Nevis, Grenada, St.Lucia). The frequency and ease of transport in the region has made that the country may benefit from.
Changes in retailing	none	none	
Changes in international trade in animal products (imports)	high	high	Better management.
Changes in international trade in animal products (exports)	low	low	The volume supplied is low but the genetic resource is of high value that will leave the country. Implementation and monitoring of policies implemented will lower the adverse effects.
Climatic changes	none	medium	Flash floods and unexpected hurricanes are capable of destroying a significant number of the genetic resource since the farm management and husbandry practices at present are inadequate.
Degradation or improvement of grazing land	low	medium	As part of the work programme for livestock production pasture management is indicated as a critical indicator. Activities to promote pasture development such as planting of improved fodder (grasses and trees) using sourced material from the livestock station is promoted. Farmers participate in planting of improved grasses and fodder trees, incorporating manure from animals to use as fertilizers.

Drivers of change	Impact on animal genetic resources and their management over last ten years	Future impact on animal genetic resources and their management (predicted for the next ten years)	Describe the effects on animal genetic resources and their management
Loss of, or loss of access to, grazing land and other natural resources	low	medium	Flash floods introduce land slippage, mud slides or soil erosion makes available pasture space limited. Loss of land space due grazing is minimal since the pasture is fertilized by the animal manure and there is adequate pasture rotation and management of communal pastures. Fast growth for competing space for residence and industry, decrease the land space available for growing fodder for food which will decrease the number of livestock. Competition with housing for agricultural lands available for livestock rearing.
Economic, livelihood or lifestyle factors affecting the popularity of livestock keeping	low	medium	With the introduction of banana pest that has significantly reduced the production of bananas, many farmers are using new available land to house livestock (small ruminant, poultry, pigs). Accompanied buy supportive projects to build livestock industry, farmers can apply for loans to expand or enter into new production due to the availability of lands.
Replacement of livestock functions	none	none	Not applicable.
Changing cultural roles of livestock	none	none	Not applicable.
Changes in technology	low	medium	Food security and decrease land availability will heighten better management practices and breeding practices
Policy factors	low	high	The increased trade in live animals will trigger better management of livestock and the genetic resources available.
Disease epidemics	low	low	A good national animal disease surveillance system twinned with a regional animal disease surveillance network will enhance the protection of genetic resource and their management.

OVERVIEW OF ANIMAL GENETIC RESOURCES

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

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

Species	Locally adapted breeds	Exotic breeds
Cattle (specialized dairy)	0	1
Cattle (specialized beef)	0	0
Cattle (multipurpose)	1	3

Species	Locally adapted breeds	Exotic breeds
Sheep	1	5
Goats	1	4
Pigs	1	4
Chickens	1	1

CHARACTERIZATION

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

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

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

Species	Baseline survey of population size	Regular monitoring of population size	Phenotypic characterization	Molecular genetic diversity studies – within breed	Genetic diversity studies based on pedigree	Molecular genetic diversity studies – between breed	Genetic variance component estimation	Molecular genetic evaluation
Cattle (specialized dairy)	1	1	low	none	none	none	none	none
Cattle (specialized beef)	0	0	none	none	none	none	none	none
Cattle (multipurpose)	4	4	low	none	none	none	none	none
Sheep	6	6	low	none	none	none	none	none
Goats	5	5	low	none	none	none	none	none
Pigs	5	5	low	none	none	none	none	none
Chickens	2	2	low	none	none	none	none	none

INSTITUTIONS AND STAKEHOLDERS

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

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

	Score
Education	low
Research	none
Knowledge	low
Awareness	low
Infrastructure	low
Stakeholder participation	none
Policies	low
Policy implementation	low
Laws	none
Implementation of laws	none

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

	Description
Education	8 veterinarians and 1 Senior Veterinary assistant were exposed to genetic management pedagogically.
Research	No expertise in the area to assist to develop capacity of genetics.
Knowledge	Very little exposure and can be antiquated.
Awareness	A programme in its infancy stage has begun in progeny testing. Needs more specific training in this area.
Infrastructure	There are three Livestock breeding and experimentation stations underutilized due to lack of expertise in the areas of genetics. Some experiments are conducted for nutrition and feeding but not for genetics.
Stakeholder participation	The absence of expertise in this area limits the involvement of stakeholder except by assessment of the phenotypic characterization which they use for selection of breeder stock.
Policies	Inadequate.
Policy implementation	Limited due to unfamiliarity with the area of expertise.
Laws	None are written.
Implementation of laws	Unable to implement what is not written by law.

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

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

The commodity production approach by the Animal Health and Production Division, where a group of farmers are targeted to farm at a specific increased production levels. Farmers are exposed to breed characterization and genetic of the particular specie produced (cattle, sheep, goat, poultry and pigs).

BREEDING PROGRAMMES

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

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

10. Who operates breeding programmes in your country?

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

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

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

One farmer specialized in UHT milk production.

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

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

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

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

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

Species	Breeding method			
	Straight/pure-breeding only		Straight/pure-breeding and cross-breeding	
	Loc	Ex	Loc	Ex
Cattle (specialized dairy)	0	1	0	0
Cattle (multipurpose)	0	0	0	3
Sheep	0	0	1	5
Goats	0	0	1	4
Pigs	0	0	1	4

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

Species	Training	Research
Cattle (specialized dairy)	low	none
Cattle (specialized beef)	none	none
Cattle (multipurpose)	low	none

Species	Training	Research
Sheep	medium	low
Goats	medium	low
Pigs	medium	low
Chickens	none	low

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

Species	Organization of livestock keepers
Cattle (specialized dairy)	high
Cattle (specialized beef)	none
Cattle (multipurpose)	low
Sheep	medium
Goats	medium
Pigs	medium
Chickens	low

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

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

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

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

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

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

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

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

Small Ruminant Association and the Pig Growers Company have platforms that inform the market demands. These groups are currently using the information from the Governments Livestock work programme to implement on their farms. Technical assistance and extension services delivered to these farms on an on-going basis.

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

Species	Policies or programmes
Cattle (specialized dairy)	yes
Cattle (specialized beef)	no
Cattle (multipurpose)	yes
Sheep	yes
Goats	yes
Pigs	yes
Chickens	yes

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

Species	Description of policies or programmes
Cattle (specialized dairy)	Supports the programme for Holstein breed on the singular dairy farm, no new breeds have been introduced.
Cattle (specialized beef)	
Cattle (multipurpose)	No new breeds have been introduced over the last 10 years. Government have a breeding programme at the government farm.
Sheep	Government import new breeds and develop a breeding programme on the government farms.
Goats	Government import new breeds and develop a breeding programme on the government farms.
Pigs	Government import new breeds and develop a breeding programme on the government farms.
Chickens	

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

Species	Description of consequences
Cattle (specialized dairy)	Inadequate breeding programme and lack of implementation of policies can be disastrous to the limited genetic resources.
Cattle (specialized beef)	
Cattle (multipurpose)	Inadequate breeding programme and lack of implementation of policies can be disastrous to the limited genetic resources.

Species	Description of consequences
Sheep	Good breeding programme but lack of implementation of policies, which can be devastating on the genetic resources.
Goats	Good breeding programme but lack of implementation of policies.
Pigs	Good breeding programme but lack of implementation of policies which may reduce genetic resources.
Chickens	

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

There are no legal framework that makes the implementation mandatory since the Good Agricultural Programmes are just being established. There is also no mandatory identification and registration of animals and therefore larceny of animals is very high. This dissuades the producers from increasing and enhancing their capacity.

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

Species	Description of future objectives, priorities and plans
Cattle (specialized dairy)	Reestablish an artificial insemination programme for the dairy cattle with imported semen to keep pure breeds. Introduction of animal registration and identification. Conduct performance testing.
Cattle (specialized beef)	
Cattle (multipurpose)	Reestablish an artificial insemination programme with targeted farmers. Introduction of animal registration and identification. perform performance testing
Sheep	Introduce synchronization and artificial insemination for breeders of specific breeds for a targeted number of farmers. Introduction of animal registration and identification. Conduct performance testing.
Goats	Introduce synchronization and artificial insemination for breeders of specific breeds for a targeted number of farmers. Introduction of animal registration and identification. Perform performance testing
Pigs	Continue artificial insemination programme to all farmers. Select farms with breeds to perform line breeding. Performance testing. Conduct performance testing.
Chickens	

CONSERVATION

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

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

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

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

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

- yes
 no

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

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

	Considered in formal prioritization approaches
Risk of extinction	
Genetic uniqueness	
Genetic variation within the breed	
Production traits	
Non-production traits	
Cultural or historical importance	
Probability of success	

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

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

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

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

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

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

- yes
 no

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

- yes
 no

23.2. If yes, please describe the plans.

There is an indigenous small breed sheep is being discussed to make good pets. There is a small number of this breed located in one Grenadine island that can be selected for multiplication for the tourism and pet market. At this time there is no specific targeted number.

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

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

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

Species	Number of breeds for which material is stored	Number of breeds for which sufficient material is stored	Does the collection include material from not-at-risk breeds?	Have any extinct populations been reconstituted using material from the gene bank?	Have the gene bank collections been used to introduce genetic variability into an in situ population?	Have the gene bank collections been used to introduce genetic variability into an ex situ population?	Do livestock keepers or breeders' associations participate in the planning of the gene banking activities?
Cattle (specialized dairy)							
Cattle (specialized beef)							
Cattle (multipurpose)							
Sheep							
Goats							
Pigs							
Chickens							

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

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

- yes
- no

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

This pertains to the national bird (the Amazona guildingii). A consortium is established with international agencies. At current the parrot which was almost to the point of extinct several years ago is bred in Germany, France and USA.

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

The indigenous parrot (the Amazona guildingii) was threatened almost extinct several years ago and was on the international CITES list. With the assistance of France and USA the population has reached to a level where the bird is no longer threatened.

REPRODUCTIVE AND MOLECULAR BIOTECHNOLOGIES

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

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

Species	Biotechnologies								
	Artificial insemination	Embryo transfer	Multiple ovulation and embryo transfer	Semen sexing	In vitro fertilization	Cloning	Genetic modification	Molecular genetic or genomic information	Transplantation of gonadal tissue
Goats	low	none	none	none	none	none	none	none	none
Pigs	high	none	none	none	none	none	none	none	none

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

Artificial Insemination in Goats was introduced in 2013, through Farmer Field School project (FAO). At present only one technician has commenced training. Three other technician s will be trained during the course of this year. Artificial Insemination in pigs is widespread as the techniques were developed in the late 1980s. It is the intention of the government to package the semen to be sold to farmers as another service.

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

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

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

There are three livestock station on which has a national piggery. The piggery supplies the semen for the national AI programme. Technicians are trained to take and process the semen and bottle it for use. There is a lab that is attached to the national piggery where the semen is processed. Each regional office is supplied with a fridge specifically for the semen conservation. All district officers conduct the AI in pigs.

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

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

30.1. Please briefly describe the research.

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

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

Pigs	Ranching or similar grassland -based production systems	Pastoralist systems	Mixed farming systems (rural areas)	Industrial systems	Small-scale urban or peri-urban systems
Artificial insemination using semen from locally adapted breeds	n/a	n/a	none	n/a	none
Artificial insemination using nationally produced semen from exotic breeds	n/a	n/a	high	n/a	high
Artificial insemination using imported semen from exotic breeds	n/a	n/a	none	n/a	none
Natural mating	n/a	n/a	high	n/a	high
Cattle (specialized dairy)	Ranching or similar grassland -based production systems	Pastoralist systems	Mixed farming systems (rural areas)	Industrial systems	Small-scale urban or peri-urban systems
Artificial insemination using semen from locally adapted breeds	n/a	n/a	none	n/a	none
Artificial insemination using nationally produced semen from exotic breeds	n/a	n/a	none	n/a	none
Artificial insemination using imported semen from exotic breeds	n/a	n/a	none	n/a	none
Natural mating	n/a	n/a	high	n/a	none

Cattle (multipurpose)	Ranching or similar grassland -based production systems	Pastoralist systems	Mixed farming systems (rural areas)	Industrial systems	Small-scale urban or peri-urban systems
Artificial insemination using semen from locally adapted breeds	n/a	n/a	none	n/a	none
Artificial insemination using nationally produced semen from exotic breeds	n/a	n/a	none	n/a	none
Artificial insemination using imported semen from exotic breeds	n/a	n/a	none	n/a	none
Natural mating	n/a	n/a	high	n/a	none
Sheep	Ranching or similar grassland -based production systems	Pastoralist systems	Mixed farming systems (rural areas)	Industrial systems	Small-scale urban or peri-urban systems
Artificial insemination using semen from locally adapted breeds	n/a	n/a	none	n/a	none
Artificial insemination using nationally produced semen from exotic breeds	n/a	n/a	none	n/a	none
Artificial insemination using imported semen from exotic breeds	n/a	n/a	none	n/a	none
Natural mating	n/a	n/a	high	n/a	high

Goats	Ranching or similar grassland -based production systems	Pastoralist systems	Mixed farming systems (rural areas)	Industrial systems	Small-scale urban or peri-urban systems
Artificial insemination using semen from locally adapted breeds	n/a	n/a	none	n/a	none
Artificial insemination using nationally produced semen from exotic breeds	n/a	n/a	high	n/a	high
Artificial insemination using imported semen from exotic breeds	n/a	n/a	none	n/a	none
Natural mating	n/a	n/a	high	n/a	high

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

<p>Constraints.</p> <ol style="list-style-type: none"> 1. No liquid nitrogen manufactured on island 2. Unreliability of boats or vessels to transport liquid nitrogen 3. Inadequate facility (lab) to accommodate AI processing 4. Limited packaging of processed semen for distribution
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III. DATA CONTRIBUTING TO THE PREPARATION OF *THE STATE OF THE WORLD'S BIODIVERSITY FOR FOOD AND AGRICULTURE*

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

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

	Extent of collaboration	Description
Development of joint national strategies or action plans	none	
Collaboration in the characterization, surveying or monitoring of genetic resources, production environments or ecosystems	none	

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

2. Please describe any other types of collaboration.

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

There is a good biotechnology lab in St. Vincent and the Grenadines that is concentrating on tissue culture for crops. this lab will soon build liquid nitrogen plant. To this end, the AI programme can be more sustainable.

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

The financial resources to provide a proper facility for a laboratory that can be used in agricultural health is non existent. While the plant lab has been extended to meet the needs of the farmers and the growing demand on crop agriculture, the animal health lab has been neglected although there is a growing interest in livestock production.

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

Building capacity in animal genetic is needed.
Building capacity in biotechnology techniques.

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

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

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

yes

no

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

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

Provision or maintenance of the habitat for the Amazona guildingii. Promoting plant growth by grazing of livestock in the rural areas. Composting and use of animal manure as fertilizers. Disease regulation.

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

Provision or maintenance of the habitat for the Amazona guildingii. Taking care of the watershed and the forest by the implementation of forestry programmes of conservation for the parrot.
Promoting plant growth by grazing of livestock in the rural areas (this traditional practice has continued).
Composting and use of animal manure as fertilizers. Manure from the chickens and goats are used in fodder banks and has been integrated into crop production.
Disease regulation: a national animal disease surveillance system is established with a participatory approach. Farmers are trained to recognize animal pest and reports to their respective field officer on an urgent basis of any siting. Farmers benefit from training in livestock production.

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

Conservation of the parrot- persons are punishable by law to be in possession of the eggs, fledglin or adults. Persons informed the law of any illegal trade. The parrot population has been restored to a level where it is no longer at risk of extinction.

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

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

- yes
 no

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

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

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

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

At present the farmers are using the animal manure as fertilizer. Most of the grazing is monitored to prevent overgrazing. However, during the dry season where fodder can be scarce overgrazing occurs. In some Grenadine isles there is a "let go season" where animals are free to roam during the dry season, so there is no systematic monitoring of pasture. Some animal,al housing are closer to the rivers to use the available water for cleaning and watering crops. This practices cause leaching in the rivers and build upof sediments. As a result any new animal structure must pass through the Ministry of Health (Public Health) to be authorize to build. No authorization is given to build next to streams or rivers. Nor in the watershed areas.
Some farmers have gone into the forest areas to establish "specialized" farms and are close to the watershed. These are now monitored by the Forestry Department. Such farmers are now involved in an alternative livelihood programme to minimize the destruction of the forest and the watersheds.

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

Pig Production is very important and has been increasing over the years due to the loss of the banana production due to pest. As a result there are many new pig structures which are erected newar water sources. This is subject to the regulations of the Ministry of Health, Public Health Department, since the strams and rivers are still use by some residents for washing clothes and bathing.
Manure from Poultry and Poultry litter is one of the most used fertilizer (slow release Nitrogen) in crop production. Some farmers do integrated farming while other supplies to the crop farms. Most of the farmers are taught composting.

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

Further actions to be taken is the implementation of standards and the monitoring of compliance on farms. Good Agricultural Practices have been developed but has nit yet been implemented. The Bureau of Standards have set up a task force committee to study the GAPs and to have them pass through the legislature and become standards for livestock production.

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

The task force that has been established by the Ministry of Industry and Science under the auspices of the Bureau of Standards have a MOU with the Ministry of Health and the Ministry of Agricultrue with regards to the implementation of standards to regulate or reduce the environmental problems.

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

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

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

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

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

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

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

Please provide further details:

At the Agricultural census in 2000, the animal breeds were catalogued. There is no performance testing, the catalogue was done on phenotypic characterization.

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:

At the Agricultural census in 2000, the animal breeds were catalogued. There is no performance testing, the catalogue was done on phenotypic characterization.
There is limited human expertise in animal genetics and therefore it has been highlighted as a critical area for priority. Training needs to be had to continue the progress.

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

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

Please provide further details:

There is no national expertise available. Some assistance has been sourced but is not yet available.

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

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

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

Please provide further details:

The census of 2000 gave a baseline survey.

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:

It is part of the priorities of the Ministry of Agriculture to establish the status, as such discussions were held with international organizations to assist in this work.

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:

A programme of data collectors for livestock will be implemented from April 2014. This is coupled with the fact that the population status for the economical level of production is monitored by commodity officers. To this end, more information will be available at the end of the year or at any one period to monitor the trends in livestock population.

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:

The policies needs to be revisited and amended where necessary.

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:

Forestry conservation programmes are established for the parrot.
Composting is done in animal production programmes.

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:

Breeding programme exist as the government provide all the replacement stock for the national herd. Pigs, small ruminant and cattle are imported and multiplied for sale to be injected into the national herd.

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:

This has to be revisited to include the establishment of satellite breeder farms.

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:

This area of focus needs more attention. Due to limited expertise in this areas no one dedicated to this activity.

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.

f. No

Please provide further details:

A programme of performance testing and phenotypic characterization has been added to the work programme for 2014. It is expected to be conducted in Pis, Sheep and Goats and Cattle. Funding is being source for training in animal genetics, so the competency can be built to conduct this activity.

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:

See answer to 19.

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

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

Please provide further details:

This pertains to livestock production but does not pertain to genetic resource.

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:

Farmers know where to access the service of the government since they depend on the government to import the new genetic resource. A regional office is established with district field officers who are accessible to farmers.

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:

This pertains to the national bird (*Amazona guildingii*).

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:

This is an ongoing activity as outline in the objective of the Livestock programme. Farmers receive training and technical packages as well as access to breeding stock. Each field officer conduct such training which can be a one-to-one or by group.

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:

The Ministry of Agriculture, through its collaboration with international organizations (FAO, USDA-APHIS), bilateral agreements with international countries Brazil, New Zealand, Taiwan have sought technical training to support the programmes.

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:

An indigenous sheep is found on the island that we are exploring the possibility to improve. The specific details have not been developed.

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:

Small cottage industries in soap, milk, bags, earing etc.. are sold on the local market. There has not been any access to regional or international markets.

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

To enhance the development of the product line, there need to be a well equipped lab to support the product development. Food lab and appropriate microbiology lab so as to ascertain the safety of the products.

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.

Under a specific project the use of animal products and its development will be enhanced. It is envisaged that youths will be able provide a market for tannery, cheese and soap making.

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:

A quarterly and annual report is done on animal trends as well as factors that affect animal production.

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:

Larceny of animals (all species).
Cattle- (Competition for land space for industry and tourism).

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:

This has been identified as a matter to be dealt with urgently as the trade in cattle export has just commenced. Some information to guide policy was submitted to be discussed by the policy makers.

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:

There has not been any discussion on the policies to be implemented.

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

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

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

Please provide further details:

The government provides the pedigree stock and all imports of new breed. The government uses its livestock stations programmes to implement conservation measure.

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:

The government provides the pedigree stock and all imports of new breed. The government uses its livestock stations programmes to implement conservation measure.

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:

Inadequate facility, non availability of liquid nitrogen, lack of human expertise.

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:

In partnership with the Biotechnology lab in St. Vincent and its establishment of a liquid nitrogen plant, we will be able to commence ex situ in vitro conservation.

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:

Human resource expertise, capacity building, appropriate laboratory support system, appropriate infrastructure to house animal genetic resources.

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:

The government is in the process of enhancing through improved equipment, the artificial insemination laboratory to support AI in Small ruminant, Cattle and Pigs. There is collaboration with the biotechnology lab to provide liquid nitrogen to store semen from breeds with better performance or for breeds needing expanding. There is also technical expertise sought to assist in breeding, performance and progeny testing etc..

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:

There is a Livestock emergency manual for natural disasters.

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:

This is one of the main objective of 2014.

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:

Technical packages are developed for the different species. Also training is conducted with demonstration.

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

1. Human resource expertise: There are 8 vets and 1 Senior Veterinary Assistant who received in their studies some levels of exposure to animal genetic, but specific training is needed in application, methodologies and appropriate technologies.
2. Development of an appropriate lab to process support the technologies to be used.

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.

See question 45.

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

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

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

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

Please provide further details:

Capacity building in animal genetics.
Appropriate laboratory infrastructure to support a structure programme.
Adequate policies to guide the sustenance of the animal genetic resource.

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:

There is no clear policy on the national strategy and therefore there is no implemented national strategy guided by a written policy.

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:

There is no National Biodiversity Strategy and Action Plan.

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:

There is a programme to be implemented over the next four years that will have the animal identification and registration as part of its activities.

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:

The government is the sole importer of animal genetic resources. There is a system of multiplication and service of sale of pedigree weaner.

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

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

Please provide further details:

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:

EMERGING ISSUES

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

Issues to be addressed in future

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