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

Country report

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

Country: Cameroon

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).

Animal Genetic Resource (AnGR) management in Cameroon has its legal basis from the National **Constitution** of January 18, 1996, which states that "every person shall have a right to a healthy environment. The protection of the environment shall be the duty of every citizen. The State shall ensure the protection and improvement of the environment."

Law number 96/12 of 5th August 1996 relating to Environmental Management addresses the management of AnGR in several Articles of its 5th Chapter on Natural Resource Management and biodiversity Conservation, such as:
Article 62: "The protection of nature, the preservation of animal and plant species and their habitat, the maintenance of biological balances and ecosystems and the conservation of biodiversity and genetic diversity against all causes of degradation and threats of extinction are of national interest. It shall devolve on the Administration and each citizen to safeguard the national heritage". "Cameroon's biodiversity is used sustainably, especially through;
1. An inventory of existing species, particularly of those that are endangered;
2. Management plans for species and the preservation of their habitat;
3. A system for the control of access to genetic resources.

Article 63: "Natural resources shall be managed rationally to meet the needs of present generations without compromising the capacity of future generations to meet their own needs".

The is ministry in charge of livestock and animal industries, the Ministry of Livestock, Fisheries and Animal Industries, which coordinates the management of AnGR in Cameroon. To that effect and in compliance with the numerous international treaties, conventions Cameroon is signatory to, not least amongst which are the Interlaken declaration and the Global Plan of Action for the sustainable management of AnGR, the Government through the Ministry of Livestock, Fisheries and animal Industries created a national coordination to oversee and ensure its obligations and commitments with respect to AnGR are appropriately met.

The National coordination and its National consultative committee prepared Cameroon's country report as its contribution to the first State of the World's AnGR report. To further show case its commitment towards the sustainable management of AnGR, the Ministry of Livestock created a special service in charge of AnGR in 2012 and provided funds for the national coordination to facilitate the formulation of the national Strategy and action plan as well as the creation of three specialized cooperative societies for the in-situ preservation of three identified at-risk cattle breeds.

There is also a clear manifestation of improved political and institutional will which can well be attributed to an increased awareness of the various stakeholders on the importance of proper management as well as guarantees of its sustainability. On this front the Government has helped by reinforcing the capacities of the academic and research stakeholders through the faculties of veterinary medicine and agronomy as well as the National Institute for Agricultural Research which all now play very active roles in the management of AnGR in the country as seen by their active participation in the preparation of the 2007-2011 country intermediary report.
It could rightly be said AnGR management in Cameroon is evolving, but the challenges are equally substantial. Primary amongst such is the continuous dearth of funds for the activity, the continuous rapid erosion of the resources due to unregulated hybridization, rapid population growth causing an increased demand for food of animal origin, climate change, loss of grazing land, rapid mechanization, disease etc.

Major constraints towards the sustainable management of AnGR besides the dearth of funds, include, the lack of operational capacities of the national coordination, absence of a National strategy and action Plan as well as the programs and Projects they were supposed to generate, dispersal of AnGR activities across different sectors due to conflicts in attributions and responsibilities, lack of collaboration between administrations in charge of genetic resources etc.

Cameroon today counts several threatened breeds of cattle such as the Bakweri, the Kouri, the Kapsiki, the Namchi, the Toupouri and a few extinct breeds such as the Bamileke taurine and the Manengoumba, all small stature endemic taurines. It is expedient that the trend be reversed.

To do this priority should be placed on creating the NAC and formulating the National Strategy and Action plan in a participative manner involving all stakeholders ensuring that their prerogatives are taken into consideration. This will guarantee adherence and participation, which in itself will guarantee sustainability. The various priority programs and projects/activities to be implemented will be then identified by the NAC. To coordinate all these it is expedient that the national coordination be reinforced and operational.

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

FLOWS OF ANIMAL GENETIC RESOURCES

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

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

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

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

N/A

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

- (●) yes
- ( ) no

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

- (●) yes
- ( ) no

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

The main weblink for the information is the website of the Ministry of Livestock, Fisheries and animal Industries: www.minepia.cm.

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.

Due to the psychosis caused by the avian Influenza scare of 2006 and the subsequent years the Government decided to revamp the poultry sector and banned the importation of frozen chicken while significantly subsidizing the local poultry industry which heavily if not entirely depends on imported breeding stocks. this caused a significant rise in the poultry gene flow from the US and Europe into the country. Secondly, the implementation of the growth and Employment Strategy and particularly its livestock sector strategy in 2009/2010 which prioritizes the promotion of short cycle speculations, saw a significant rise in the importation of high yielding small ruminant, poultry, pig and non-conventional livestock from Europe and the US (poultry, pigs and small ruminants) and some African countries such as Benin and Togo (Non-conventional livestock e.g. Cane rats).

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

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

The pattern is the 'usual' one with poultry, pig, cattle and small ruminant breeding stocks being regularly imported from Europe and the US. The changes mentioned have markedly affected AnGR in Cameroon in terms of diversity and productivity. Various cattle, pigs and poultry breeds have been imported and due to the persistent unregulated and uncontrolled cross breeding targeting high yields there has been a marked increase in genetic dilution and erosion of local indigenous AnGR. AnGR management has also slightly improved because Government support and implication in the importation and distribution of the said genetic material was conditioned by a compulsory structuring and organization of the beneficiaries into Common Initiative Groups and lately Specialized Cooperatives for the preservation of threatened breeds.

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	The relatively high population growth rate along with a disproportionate urbanization rate has greatly increased the demand for animal proteins of livestock origin with a consequent increase in slaughter as seen in abattoir statistics. The trend is more likely to accentuate in the next ten years.
Changing demand for livestock products (quality)	medium	medium	The impact of quality is lesser than that of quantity and the trend is expected to remain same over the next ten years
Changes in marketing infrastructure and access	low	medium	New programs target marketing infrastructure.
Changes in retailing	low	medium	This will be a logical consequence of changes expected in marketing infrastructure.
Changes in international trade in animal products (imports)	medium	high	This is difficult to assess as Cameroon is a major trade route between its neighbors but the livestock processing industrialization program being currently implemented is expected to see imports of livestock increase over the next ten years with a concomitant increase in impact on AnGR.
Changes in international trade in animal products (exports)	medium	medium	The impact of exports of live animals and animal products on AnGr could be described as medium because Cameroon being a major livestock trade route between its eastern neighbours and the major markets of its western (Nigeria) and souther borders (Congo, Gabon, Equatorial Guinea) it is relatively difficult to assess what the exact impact on the national herds could be. The trend is not expected to change over the next ten years.
Climatic changes	medium	high	Pasture and water scarcity lead to changes in husbandry systems towards more transhumance and consequent effects like disease spread and mortality. The trend is not expected to improve over the next ten years.
Degradation or improvement of grazing land	medium	high	Pasture and water scarcity lead to changes in husbandry systems towards more transhumance and consequent effects like disease spread and mortality. The trend is not expected to improve over the next ten years.
Loss of, or loss of access to, grazing land and other natural resources	medium	low	This has been a serious problem over the past years with climate change, rapid urbanization and agricultural mechanization being its primary causes. The trend is expected to be reversed with the validation of the national pastoral code and imminent passing and implementation of pastoralism legislation protecting and granting access to grazing land and other pastoral resources.

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
Economic, livelihood or lifestyle factors affecting the popularity of livestock keeping	medium	high	The impact has always being quite important since livestock has always been a major saving tool for the middle class and very important civil service group. The trend will definitely increase with the various livestock development projects and programs to be implemented over the next five years. Livestock is being increasingly perceived as an economically viable activity.
Replacement of livestock functions	medium	medium	Use of livestock as draught animals is increasingly being abandoned in favor of tractors.
Changing cultural roles of livestock	low	medium	Livestock keeping is increasingly being perceived as a profitable economic activity and that should increase the impact on AnGR over the next ten years.
Changes in technology	medium	high	We are hoping this will revolutionize the sector.
Policy factors	low	medium	Are improving.
Disease epidemics	medium	low	Several disease control strategic plans are being elaborated.

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)	3	4
Cattle (specialized beef)	10	2
Cattle (multipurpose)	6	2
Sheep	4	3
Goats	4	3
Pigs	4	4
Chickens	10	10

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)	3	3	medium	medium	low	low	low	low
Cattle (specialized beef)	4	4	high	medium	low	low	low	low
Cattle (multipurpose)	3	3	medium	medium	low	low	low	low
Sheep	2	2	medium	medium	low	low	low	low
Goats	3	3	medium	high	low	low	low	low
Pigs	3	3	low	low	low	low	low	low
Chickens	0	0	medium	medium	low	low	low	low

INSTITUTIONS AND STAKEHOLDERS

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

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

	Score
Education	high
Research	high
Knowledge	high
Awareness	medium
Infrastructure	medium

	Score
Stakeholder participation	low
Policies	low
Policy implementation	low
Laws	medium
Implementation of laws	medium

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	Cameroon has invested much in Animal production and health education from technical to post doctoral levels in the faculty of Agronomy of the university of Dschang, the faculty of veterinary medicine of the Univeristy of Ngaoundere as well as the recently created faculty of veterinary medicine of the Université des Montagnes. There are 03 government owned and run Veterinary schools training Vetrinary nurses and technicians. Before all these the Government set priority scholarships to train animal production and health specialist in the best universities the world-over.
Research	Through its National Institute for Agricultural Research, which is being up-graded to a centre of Excellence for the central African sub-region, Cameroon carries out very high quality research with state of the art facilities. The situation greatly improve again on completion of the restructuring program funded by the central African Economic Commission and the African Development Bank.
Knowledge	This is a logical outcome of the high education and research levels.
Awareness	Despite the high education, research and knowledge levels, awareness average due to a break in the transmission of knowledge and research results to the farming community. The government identified this weakness in the late 90s and with the help of the World Bank set up a National Agricultural Research Vulgarisation and Valorisation program which greatly improved the situation. The program came to an end and the Government is facing difficulties sustaining the activities.
Infrastructure	The infrastructure are available, but some have been out-of use, while others need up-grading, but the overall situation is encouraging.
Stakeholder participation	Government's disengagement from the production sector without adequate compensatory measures greatly hampered stakeholder confidence and participation.
Policies	Policies are rated low since the mid 80s when within the framework of the structural adjustment program, the Government disengaged itself from production sectors, policies where either not up-dated at all or poorly up-dated and are today unadapted to the present dispensation and hardly adhered to by the stakeholders.
Policy implementation	Policy implementation just like the formulation was seriously hampered since implementation of the SAPs.
Laws	There are laws that address Animal genetic resource management, but they are dispersed and moreso in different ministries.
Implementation of laws	The major impediment to implementation of the said laws lies in the conflicts that arise due to their dispersal in different ministries, namely Livestock, agriculture, Environment and forestry. Harnessing these laws and attributing their implementation and monitoring to a single National Competent authority will greatly improve the situation.

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).

1. Livestock keepers' organizations exist at species level for decades now
2. Three cattle preservation cooperatives were created and supported for 3 identified threatened breeds in 2013.

BREEDING PROGRAMMES

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

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

10. Who operates breeding programmes in your country?

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

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

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

N/A

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

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

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

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

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

Species	Breeding method			
	Straight/pure-breeding only		Straight/pure-breeding and cross-breeding	
	Loc	Ex	Loc	Ex
Cattle (specialized dairy)	0	3	3	3
Cattle (specialized beef)	4	3	4	3
Cattle (multipurpose)	3	2	3	2
Sheep	2	1	2	1
Goats	2	2	2	1
Pigs	1	3	1	3

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

Species	Training	Research
Cattle (specialized dairy)	medium	high
Cattle (specialized beef)	medium	high
Cattle (multipurpose)	medium	high
Sheep	medium	high
Goats	medium	high
Pigs	medium	medium
Chickens	medium	high

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

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

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

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

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

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

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

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

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

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

N/A

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

The Government through the Ministry of Livestock, Fisheries and animal Industries owns and runs ranches and livestock stations where cattle, sheep, goats, horses and pigs are kept and bred. all the ranches and stations serve as impulsion (Demonstration/Initiative for the encouragement of novices) and modernization (support for practicing livestock farmers) facilities where training and capacity building are carried out. The infrastructure and equipment are good and the personnel is qualified, reason why practices such as recording, identification and artificial insemination are common place. Research in universities and the various stations of the national institute for Agricultural research are also up to date and in some instances better than the livestock stations of the Ministry of Livestock, Fisheries and Animal Industries.
There are e few NGOs operating in the livestock sector with modern infrastructure, equipment and well trained personnel. prominent amongst them is Heifer Project international which supports farmer s with breeding stocks, AI services, recording and identification equipment and extension services in dairy, beef, goat, sheep, pig and poultry farming.
National commercial companies exist only in the poultry sector and they are all modern in infrastructure and equipment as well as personnel.

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

Species	Policies or programmes
Cattle (specialized dairy)	yes
Cattle (specialized beef)	yes
Cattle (multipurpose)	yes
Sheep	yes
Goats	yes
Pigs	yes
Chickens	yes

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

Species	Description of policies or programmes
Cattle (specialized dairy)	The government of Cameroon adopted and is implementing a vision which aims at making the country and emerging economy, democratic and united in its diversity by 2035. The period 2010 to 2020 was dubbed the Growth end Employment strategy period of that vision 2035. the Growth and Employment Strategy, sets sector specific objectives, and the livestock and fisheries sub-sector is in the Rural Sector along with Agriculture, Forestry and Environment sub-sectors, sharing a common Sector strategy. The livestock and fisheries sub-sector has a sub-sector specific strategy guiding all policies, programmes and activities and aligned to the Rural Sector Strategy and National development Strategy, the GES. The livestock and fisheries sub-sector strategy has four programmes 406, 407, 408 and 409 for; Animal Production and Animal Industries Development; Veterinary Services Development; Fisheries Aquaculture and Fisheries Industries Development and Institutional Capacity development respectively. Breeding in the dairy sector part of programme 406 and aims at curbing the 20 billion Francs CFA milk balance deficit and export the remnant to the Central African sub-region. this is to be done by promoting the creation of mechanized peri-urban dairy farms, mechanized rural medium to large scale dairy farms, curbing post production losses and promoting processing. Modernization and mechanization are to be by promoting genetic improvement by artificial insemination using genetic material high yielding dairy breeds.
Cattle (specialized beef)	The government of Cameroon adopted and is implementing a vision which aims at making the country and emerging economy, democratic and united in its diversity by 2035. The period 2010 to 2020 was dubbed the Growth end Employment strategy period of that vision 2035. the Growth and Employment Strategy, sets sector specific objectives, and the livestock and fisheries sub-sector is in the Rural Sector along with Agriculture, Forestry and Environment sub-sectors, sharing a common Sector strategy. The livestock and fisheries sub-sector has a sub-sector specific strategy guiding all policies, programmes and activities and aligned to the Rural Sector Strategy and National development Strategy, the GES. The livestock and fisheries sub-sector strategy has four programmes 406, 407, 408 and 409 for; Animal Production and Animal Industries Development; Veterinary Services Development; Fisheries Aquaculture and Fisheries Industries Development and Institutional Capacity development respectively. Breeding in the beef sector part of programme 406 and aims at attaining self sufficiency by curbing the national meat consumption deficit and export the remnant to the Central African sub-region. This is to be done by promoting the creation of mechanized intensive peri-urban beef farms, mechanized rural medium to large scale beef farms, curbing post production losses and promoting processing. Modernization and mechanization are to be by promoting genetic improvement by artificial insemination using genetic material high yielding beef breeds and improving feeding through pasture and grazing land development and exploitation of agricultural bi-products.
Cattle (multipurpose)	As in specialized beef production.

Species	Description of policies or programmes
Sheep	The government of Cameroon adopted and is implementing a vision which aims at making the country and emerging economy, democratic and united in its diversity by 2035. The period 2010 to 2020 was dubbed the Growth end Employment strategy period of that vision 2035. the Growth and Employment Strategy, sets sector specific objectives, and the livestock and fisheries sub-sector is in the Rural Sector along with Agriculture, Forestry and Environment sub-sectors, sharing a common Sector strategy. The livestock and fisheries sub-sector has a sub-sector specific strategy guiding all policies, programmes and activities and aligned to the Rural Sector Strategy and National development Strategy, the GES. The livestock and fisheries sub-sector strategy has four programmes 406, 407, 408 and 409 for; Animal Production and Animal Industries Development; Veterinary Services Development; Fisheries Aquaculture and Fisheries Industries Development and Institutional Capacity development respectively. As prescribed by the strategies, program 406 has activities aimed at promoting short cycle speculations, goats, sheep, pigs, poultry and non-conventional livestock as a contribution to curbing the met consumption deficit and exporting the remnant to the sub-region.
Goats	The government of Cameroon adopted and is implementing a vision which aims at making the country and emerging economy, democratic and united in its diversity by 2035. The period 2010 to 2020 was dubbed the Growth end Employment strategy period of that vision 2035. the Growth and Employment Strategy, sets sector specific objectives, and the livestock and fisheries sub-sector is in the Rural Sector along with Agriculture, Forestry and Environment sub-sectors, sharing a common Sector strategy. The livestock and fisheries sub-sector has a sub-sector specific strategy guiding all policies, programmes and activities and aligned to the Rural Sector Strategy and National development Strategy, the GES. The livestock and fisheries sub-sector strategy has four programmes 406, 407, 408 and 409 for; Animal Production and Animal Industries Development; Veterinary Services Development; Fisheries Aquaculture and Fisheries Industries Development and Institutional Capacity development respectively. As prescribed by the strategies, program 406 has activities aimed at promoting short cycle speculations, goats, sheep, pigs, poultry and non-conventional livestock as a contribution to curbing the met consumption deficit and exporting the remnant to the sub-region.
Pigs	The government of Cameroon adopted and is implementing a vision which aims at making the country and emerging economy, democratic and united in its diversity by 2035. The period 2010 to 2020 was dubbed the Growth end Employment strategy period of that vision 2035. the Growth and Employment Strategy, sets sector specific objectives, and the livestock and fisheries sub-sector is in the Rural Sector along with Agriculture, Forestry and Environment sub-sectors, sharing a common Sector strategy. The livestock and fisheries sub-sector has a sub-sector specific strategy guiding all policies, programmes and activities and aligned to the Rural Sector Strategy and National development Strategy, the GES. The livestock and fisheries sub-sector strategy has four programmes 406, 407, 408 and 409 for; Animal Production and Animal Industries Development; Veterinary Services Development; Fisheries Aquaculture and Fisheries Industries Development and Institutional Capacity development respectively. As prescribed by the strategies, program 406 has activities aimed at promoting short cycle speculations, goats, sheep, pigs, poultry and non-conventional livestock as a contribution to curbing the met consumption deficit and exporting the remnant to the sub-region.

Species	Description of policies or programmes
Chickens	The government of Cameroon adopted and is implementing a vision which aims at making the country and emerging economy, democratic and united in its diversity by 2035. The period 2010 to 2020 was dubbed the Growth end Employment strategy period of that vision 2035. the Growth and Employment Strategy, sets sector specific objectives, and the livestock and fisheries sub-sector is in the Rural Sector along with Agriculture, Forestry and Environment sub-sectors, sharing a common Sector strategy. The livestock and fisheries sub-sector has a sub-sector specific strategy guiding all policies, programmes and activities and aligned to the Rural Sector Strategy and National development Strategy, the GES. The livestock and fisheries sub-sector strategy has four programmes 406, 407, 408 and 409 for; Animal Production and Animal Industries Development; Veterinary Services Development; Fisheries Aquaculture and Fisheries Industries Development and Institutional Capacity development respectively. As prescribed by the strategies, program 406 has activities aimed at promoting short cycle speculations, goats, sheep, pigs, poultry and non-conventional livestock as a contribution to curbing the met consumption deficit and exporting the remnant to the sub-region.

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

Species	Description of consequences
Cattle (specialized dairy)	The implementation of the policies and programs have brought about an increase in milk production.
Cattle (specialized beef)	The implementation of the policies and programs have brought about an increase in beef production. A negative consequence is the abandonment of small stature local breeds like the kouri, kapsiki, Namchi, Bakweri, Bakossi, Toupouri which have been classified as threatened and compelling the Government to start preservation activities. The Bamileke taurine is extinct.
Cattle (multipurpose)	The implementation of the policies and programs have brought about an increase in beef production. A negative consequence is the abandonment of small stature local breeds like the kouri, kapsiki, Namchi, Bakweri, Bakossi, Toupouri which have been classified as threatened and compelling the Government to start preservation activities. The Bamileke taurine is extinct.
Sheep	The implementation of the policies and programs have brought about an increase in sheep production.
Goats	The implementation of the policies and programs have brought about an increase in goat production.
Pigs	The implementation of the policies and programs have brought about an increase in pig production. A negative consequence is the neglect of local pig breeds whose population is greatly dwindling.
Chickens	The implementation of the policies and programs have brought about an increase in milk production. Local poultry breeds production once threatened by the imported commercial breeds have benefited from Government support and the sector is improving now.

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

The main constraints are financial and organisational. The farmers have to adhere to whatever plicies and programs that are proposed and for that reason they should be structured and organised in specialised cooperatives which have proven to be more effective than Common Initiative Groups. They can then benefit from capacity building and financial support.

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)	A pilot national program funded by the EU has begun and it is hoped it will be extended over the national territory. The medium term objective is to overturn the deficit, satisfy national domestic demand and export to the sub-region.
Cattle (specialized beef)	The medium term objective is to overturn the deficit, satisfy national domestic demand and export to the sub-region.
Cattle (multipurpose)	The medium term objective is to overturn the deficit, satisfy national domestic demand and export to the sub-region.
Sheep	The medium term objective is to overturn the deficit, satisfy national domestic demand and export to the sub-region.
Goats	The medium term objective is to overturn the deficit, satisfy national domestic demand and export to the sub-region.
Pigs	The medium term objective is to overturn the deficit, satisfy national domestic demand and export to the sub-region.
Chickens	The medium term objective is to overturn the deficit, satisfy national domestic demand and export to the sub-region.

CONSERVATION

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

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

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

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

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

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

- (●) yes
- ( ) no

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

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

	Considered in formal prioritization approaches
Risk of extinction	yes
Genetic uniqueness	yes
Genetic variation within the breed	no
Production traits	yes
Non-production traits	no
Cultural or historical importance	yes
Probability of success	no

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	yes	no	yes	yes	no	no	no	no	yes	yes
Private sector	no	no	no	no	no	no	no	no	no	yes	no	yes
Cattle (specialized dairy)	yes	no	no	no	yes	no	no	no	no	no	yes	yes
Cattle (specialized beef)	yes	yes	yes	no	yes	yes	no	no	no	no	yes	yes
Cattle (multipurpose)	yes	yes	yes	no	yes	yes	no	no	no	no	yes	yes
Sheep	no	no	yes	no	yes	yes	no	no	no	yes	yes	yes
Goats	no	no	yes	no	yes	yes	no	no	no	yes	yes	yes
Pigs	no	no	yes	no	yes	no	no	no	no	yes	yes	yes

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
Chickens	no	no	yes	no	yes	no	no	no	no	yes	yes	yes

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

Conservation is essentially carried out by the Ministry of Livestock, Fisheries and Animal industries, The Institute of Agricultural Research of the Ministry of Scientific Research and Innovation.

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 are plans to set up a national gene bank as well as plans to participate in initiatives targeting the creation of sub-regional and regional gene banks.
For now, genetic material is stored in gene banks belonging to Government ranches, Research, Universities, Farmers' Cooperative Societies and Non Governmental Organizations and it is these that i will describe.

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

	Stored in national genebank
Semen	yes
Embryos	yes
Oocytes	yes
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)	3	3	yes	no	yes	yes	yes
Cattle (specialized beef)	4	4	yes	no	yes	yes	yes
Cattle (multipurpose)	4	4	yes	no	yes	yes	yes
Sheep	3	3	yes	no	yes	yes	yes
Goats	3	3	yes	no	yes	yes	yes
Pigs	3	3	yes	no	yes	yes	yes
Chickens	0	0	no	no	no	no	no

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

The Namchi bos taurus was considered threatened and efforts were made to reconstitute the population artificial insemination and embryo transfer using Goudali zebu cows. The AI using Namchi cows was successful while the embryo transfer using Goudali zebu females was inconclusive.

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.

A concept note to hat effect was submitted to FAO in 2012 by Cameroon, Chad and the Central African Republic. The objective was to obtain support from the FAO to formulate a sub-regional project for the sustainable management of AnGR with an in-vitro conservation plan in the conservation component. This was based on the recommendations of a sub-regional study carried-out in 2004 by the ECCAS (Economic Commission of Central African States) Economic Commission for Livestock, Meat and Fisheries Resources CEBEVIRHA (Commission Economique du Bétail, de la Viande et des Ressources Halieutiques de la CEMAC).
The sub-regional Focal point for Central and West Africa equally envisages the creation of in-vitro conservation facilities. Cameroon is a member of the Sub-regional focal point.

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.

Most of the taurines were considered threatened and in 2013 the Government through the National Coordination for Sustainable management of animal genetic resources and in implementation of the GPA, supported the creation of 3 specialized breed preservation cooperative societies for in-situ preservation of the Namchi taurine, the Kapsiki taurine and the Kouri taurine in Poli, Rhumsiki and lake Chad their respective cradles.

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.

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

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

The use of biotechnology in livestock production is essentially limited to artificial insemination. Earlier efforts had been made to repopulate the Namchi taurine by artificial insemination and embryo transfer into Goudali cows

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

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

Nearly all stakeholders practice artificial insemination, government institutions are capable of embryo transfer

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

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

30.1. Please briefly describe the research.

Research in the stated fields has been going on for decades now in Livestock stations and ranches of the Ministry of Livestock, Fisheries and Animal Industries as well as the different Stations of the National Institute for Agricultural Research and the Faculty of Agronomy of the University of Dschang.

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

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

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

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

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	low	low	low	n/a	low
Artificial insemination using nationally produced semen from exotic breeds	low	low	low	n/a	low
Artificial insemination using imported semen from exotic breeds	medium	low	low	n/a	medium
Natural mating	high	high	high	n/a	medium

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	low	low	low	n/a	low
Artificial insemination using nationally produced semen from exotic breeds	low	low	low	n/a	low
Artificial insemination using imported semen from exotic breeds	low	low	low	n/a	low
Natural mating	high	high	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	low	low	low	n/a	low
Artificial insemination using nationally produced semen from exotic breeds	low	low	low	n/a	low
Artificial insemination using imported semen from exotic breeds	low	low	low	n/a	low
Natural mating	high	high	high	n/a	high

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

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

Industrial production is limited to the poultry sector and the major constraint there is the very limited number of parent stock farms. The uncertainty of the quality of fertilized eggs and day old chicks imported are also worth mentioning. Biotechnology to address these constraints is expedient. Another major constraint that cuts across the board is awareness and stakeholder adherence even when efforts are made to provide solutions. There is an acute need for extension service redynamisation, research development and capacity building for all stakeholders.

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	N/A
Collaboration in the characterization, surveying or monitoring of genetic resources, production environments or ecosystems	none	N/A

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

2. Please describe any other types of collaboration.

N/A

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

All genetic resources are inter-related and as such a collaborative approach to their management could only be beneficial to all parties concerned.

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

The major constraint is the unclear attribution of responsibilities between the major production ministries Livestock and fisheries; Agriculture ; and Forestry) in a domain that necessitates clarity and accountability.
The main factor that could facilitate collaboration is the existence of a Ministry of Environment which is a transversal and common stakeholder in all the concerned domains. A positive collaboration could be achieved by granting the Ministry of Environment and Sustainable Development a central and facilitative role in the management of genetic resources.

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

The main factor that could facilitate collaboration is the existence of a Ministry of Environment which is a transversal and common stakeholder in all the concerned domains. A positive collaboration could be achieved by granting the Ministry of Environment and Sustainable Development a central and facilitative role in the management of genetic resources.

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).

N/A

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

N/A

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

N/A

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

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

- ○ yes
- ◉ no

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

N/A

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).

N/A

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).

N/A

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.

Conflicts of interest between the concerned administrations.

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.

N/A

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.

There is a GPA and the next step in improving the sustainable management of AnGR for the provision of regulating and/or supporting ecosystem services as well as for the intrinsic economic importance of the activity should be the formulation of a national strategy, action plan and specific programs and projects targeting attainment of desired results. The process should be participative and include all stakeholders.

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.

N/A

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:

A national agriculture and livestock census was carried out in 1984 and a comprehensive inventory was carried out as part of the data collection process in preparing the first national report.

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:

Phenotypic characterization has been going on since independence.

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:

Genetic characterization based on visible genetic profiles was carried out on a 1081 sample goat population in northern Cameroon in 1993.

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:

There are annual national pastoral surveys to that effect since 2009.

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 the responsibility of the Ministry of Livestock, Fisheries and Animal Industries.

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:

In the mean time we are using the questionnaires of the annual national pastoral surveys.

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:

The annual national pastoral surveys are for cattle, sheep, goats, poultry and pigs.

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:

All the FAO criteria.

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:

This will be developed in the National Strategy and action Plan.

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:

Research dates decades back and is still on-going.

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:

Funding.

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:

Make the national coordination operational and reinforce its technical and financial capacities.
Adopt and implement a National Strategy , action plan and corresponding projects and programs

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:

N/A

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:

N/A

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:

For cattle, pigs, goats and poultry.

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:

N/A

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:

Formulation and implementation of a National Action Plan and Projects to that effect. The formulation and implementation of the National action Plan(and its component projects) will be the major guarantee for the enhancement of the sustainable use and development of AnGR in Cameroon.

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:

There are no available reports of studies or publications to that effect

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:

Breeding programs with recording systems have been implemented in cattle, goats, pigs for decades now.

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:

A National Committee will soon be created by Prime Ministerial Decree. A multi-stakeholder platform that will support the coordination of the sustainable management of AnGR.

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:

Regular sensitization campaigns are carried out during the annual pastoral surveys and the annual vaccination campaigns.

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:

National strategy for access and benefit sharing validated in 2012.

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:

The Ministry of Livestock, Research and NGOs like Heifer Project International train and support livestock farmers.

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:

Within the framework of the National Strategy and action Plan.

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:

Yes, especially in the poultry sector where a comprehensive support project was instituted for local poultry production.

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:

Within the framework of the national Strategy and Action Plan.

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

N/A

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

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

STRATEGIC PRIORITY AREA 3: CONSERVATION

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

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

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

Please provide further details:

This was done during the preparation of the first country report but updating is expedient.

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:

Rapid urbanization, unregulated crossbreeding, agricultural mechanization, loss of grazing land, climate change.

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:

The Goudali zebu in the Adamaoua Region
The Namchi taurine in Poli
The Kapsiki taurine in Rhumsiki
The kouri taurine in Lake Chad

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:

Within the framework of the National Strategy and action Plan.

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 Goudali in the Adamaoua Region
The Namchi in Poli
The Kapsiki in Rhumsiki
The kouri in Lake Chad

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:

All threatened breeds are conserved ex-situ in the SODEPA ranches and Livestock Stations.

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:

Much work was done in Livestock stations and the Institute for Agricultural Research preserving the Namchi cattle semen and embryos.

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:

Much work was done in Livestock stations and the Institute for Agricultural Research preserving the Namchi cattle semen and embryos.

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

- ◉ a. Yes
- ○ b. No

Please provide further details:

To be done in the livestock stations of wakwa,Kounden and Louggerre as well as in IRAD Centers.

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:

Funding.

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:

Within the framework of a National Strategy and Action Plan.

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:

N/A

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:

N/A

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:

IRAD

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:

This is carried out by the Ministry of Livestock, Fisheries and Animal Industries, the universities and the National Institute for Agricultural Research.

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

Funding.

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

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

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

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

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

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

- ○ d. No, but action is planned and funding is sought
- ○ e. No

Please provide further details:

The various stakeholder ministries.

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

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

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

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

The terms of references were validated and the procedure budgeted in 2013, but it was later decided that the NAC be created by Prime Ministerial decree given the cross-sectoral nature of its membership.

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:

They are addressed but not as much as it should and could be if the national coordination of AnGR was implicated in the process which was coordinated by the Ministry of the Environment.

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

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

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

The national livestock sector strategy is the ministerial strategy and it adequately addresses AnGR.

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:

Within the framework of the national strategy and action plan.

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:

N/A

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:

It has been prepared but it was decided that it be created by Prime ministerial decree, considering the cross-sectoral nature of its membership. The Decree is still awaited.

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:

Within the framework of the NAC.

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:

There have been regular sensitisation campaigns which culminated in the creation of three specialised cooperatives for the preservation of three threatened cattle breeds in 2013.

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:

They are dispersed between the Ministry in charge of livestock and that in charge of the environment.

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:

Programs exist in the ministry in charge of livestock, the faculty of Agronomy of the University of Dschang and the National Institute for Agricultural research.

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:

There are several organizations for all the species and some specific for certain breeds.

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:

N/A

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:

The faculty of Veterinary Medicine of the University of Ngaoundere, the Faculty of Agronomy of the University of Dschang.

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:

A comprehensive sub-regional project for the sustainable management of AnGR in Central Africa 9Cameroon, Chad and the Central african republic) is in gestation.

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:

Heifer Project International.

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

- ◉ a. Yes
- ○ b. No

Please provide further details:

The ministry in charge of livestock budgeted approximately 80 000 US Dollars for AnGR in 2013. The highest amount ever.

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:

N/A

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:

N/A

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:

N/A

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:

N/A

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:

CEBEVIRHA Study and report.

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:

Through CEBEVIRHA and Lake Chad Basin Commission.

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:

IRAD.

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:

Through the creation and funding of a specialized cooperative society for the preservation of the Kouri taurine in lake Chad.

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:

As part of the Sub-regional focal point for central and west africa and within the framework of the planned sub-regional project for the sustainable management of AnGr in Central Africa between Cameroon, Chad and the Central African Republic.

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:

Adoption of ABS strategy in 2012

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:

As a member of the RFP-CWA, CEBEVIRHA and the Lake Chad Basin Commission.

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

- (●) a. Yes
- ( ) b. No, but action is planned and funding identified
- ( ) c. No, but action is planned and funding is sought
- ( ) d. No

Please provide further details:

Participation in electronic conferences and questionnaire answering.

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

Submit by Email