



# 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: Philippines

## 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).

In the Philippines, the key trends and driving forces affecting AnGR management are the following:

1. increase in population,
2. climate change,
3. changing consumer demands and patterns (acceptance of organically grown/produced food products)
4. appreciation on the role of native food animals both by policy makers and consumers
5. access to information and technology regarding AnGR
6. improved animal health status of the country (FMD-free, HPAI-free)

The following strengths relate to the capacity to manage AnGR are:

1. policy support,
2. more collaborative endeavors between government and research institutions resulting to improved resource mobilization,
3. increasing role of the private sector in management and utilization of AnGR

The key constraints and challenges include:

1. lack of trained technical personnel,
2. inadequate infrastructure to undertake a nationwide census particularly on the breeder level
3. lack of strategically located conservation centers

Priorities and strategic directions of the Philippines include:

1. legislation in support of the current program on conservation, utilization and genetic improvement of Philippine native animals
2. strategic human resource development
3. strengthen collaborative efforts within the country and potential international partners

- 4. development of climate resilient breeds
- 5. *in situ* and *ex situ* conservation

## 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.

Imports of dairy buffaloes to the Philippines from Brazil (2,049 head) and Italy (1,253 head)

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).

<http://www.bai.da.gov.ph/index.php/annual-accomplishments-reports>; this covers only dairy buffaloes

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.

Importation of dairy buffaloes from Brazil (South America) and Italy (Europe)

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.*

For exotic and commercial poultry (broiler and layer) & swine genetics, their continuous introduction have changed the way they are raised. We are now seeing production systems applying controlled environments (e.g. tunnel ventilation) and climate resilient housing system (elevated). With the improved animal health status, non-traditional sources of breeding animals were identified i.e. dairy buffaloes from Brazil and Italy were imported. Other development includes

crossbreeding trial on other breeds of cattle for evaluation and adaptation in the Philippines in government stations (Senepol, Wagyu, Red Angus), use of an radio frequency identification (RFID) system for imported buffalo breeders from Brazil and Italy.

## 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	Continuous search/identification of breeds of animals that can produce more meat, milk and eggs
Changing demand for livestock products (quality)	medium	medium	Middle income families demand more quality products; organically-grown or "healthy" foods are being demanded by more people; Halal products are also in demand.
Changes in marketing infrastructure and access	high	high	Need for more efficient value chain and marketing system
Changes in retailing	high	high	Increasing awareness on food safety from farm to fork
Changes in international trade in animal products (imports)	high	high	Quarantine protocol and Sanitary and Phyto-sanitary (SPS) measures in the production system
Changes in international trade in animal products (exports)	medium	high	Inclusion of Sanitary and Phyto-sanitary (SPS) measures in the production system
Climatic changes	high	high	Country frequently visited by typhoons (average of 20 storms), the strongest reported was Typhoon Haiyan which devastated human lives as well as animals, affected areas experienced extensive loss of animals and livelihood; there will be restocking of animals to affected areas coming from government stations/farms.
Degradation or improvement of grazing land	low	medium	While there are areas that are degraded especially in typhoon affected areas, there are also areas in the country that expanded with improved pastures to support the various animal production systems particularly with ruminants. Some areas have concerns on land conversion hence this limits their opportunity for raising large ruminants.

Drivers of change	Impact on animal genetic resources and their management over last ten years	Future impact on animal genetic resources and their management (predicted for the next ten years)	Describe the effects on animal genetic resources and their management
Loss of, or loss of access to, grazing land and other natural resources	medium	medium	Land conversions into subdivisions, golf courses, industrial estates lessens areas devoted for animal production.
Economic, livelihood or lifestyle factors affecting the popularity of livestock keeping	high	high	Livestock keeping is less popular with the younger generation.
Replacement of livestock functions	low	medium	Because of the increasing cost of oil, many farmers still rely on large animals for draft; livestock as savings for farmers still practiced in the provinces.
Changing cultural roles of livestock	low	low	Ceremonies, festivals, shows and sports involving animals will remain part of the Philippine culture and tradition.
Changes in technology	medium	high	Application of biotechnology has improved and are more accessible that can be used in improving production system and facilitate breeding and genetic work i.e. reproductive biotechnology.
Policy factors	high	high	Over the past 5 years, policy support towards conservation and improvement has markedly improved including access to genetics abroad.
Disease epidemics	medium	medium	Need to maintain freedom from FMD & HPAI and address threats of exotic and emerging diseases.

## OVERVIEW OF ANIMAL GENETIC RESOURCES

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

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

Species	Locally adapted breeds	Exotic breeds
Cattle (specialized dairy)	4	1
Cattle (specialized beef)	25	2
Cattle (multipurpose)	2	0
Sheep	5	3
Goats	9	2
Pigs	13	1
Chickens	25	4
Ducks	8	0
Muscovy ducks	1	0
Horses	10	0

Species	Locally adapted breeds	Exotic breeds
Turkeys	1	2
Quails	4	0
Pigeons	1	0
Buffaloes	6	0

## 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)	0	1	none	none	none	none	none	none
Cattle (specialized beef)	0	2	low	low	none	none	none	none
Cattle (multipurpose)	0	0	none	none	none	none	none	none
Sheep	0	0	none	none	none	none	none	none
Goats	0	1	low	low	none	none	none	none
Pigs	0	2	low	low	none	none	none	none
Chickens	0	8	medium	medium	none	medium	none	none
Ducks	0	3	medium	medium	none	none	none	none
Horses	0	1	low	none	none	none	none	none
Buffaloes	1	1	medium	medium	medium	low	low	low


## INSTITUTIONS AND STAKEHOLDERS

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

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

	Score
Education	low
Research	medium
Knowledge	medium
Awareness	high
Infrastructure	low
Stakeholder participation	high
Policies	medium
Policy implementation	medium
Laws	low
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	Only very few universities offer post degree courses related to animal genetic resources management.
Research	Over the last 3 years, there were significant increases in funding support to undertake studies on genetics and breeding work on native chickens, ducks, pigs, goat, horses and cattle; collaboration between government and research institutions have improved significantly as evidenced by the establishment of the Philippine Native Animal Development (PNAD) Program Technical Working Group which is composed of government, academe and funding institutions.
Knowledge	With the advent of internet, research studies of other institutions became readily accessible. 
Awareness	The same is true in generating awareness for the general public through quad-media (print, radio, television and internet).
Infrastructure	Lack of strategically located conservation centers; need to upgrade existing farm facilities
Stakeholder participation	There are organized commodity stakeholders such as the Federation of Cattle Raisers Associations of the Philippines, Federation of Goat and Sheep Producers Associations of the Philippines, Inc., Accredited Swine Breeders Association of the Philippines, Philippine Duck Meat Association, Philippine Association of Breeder Layers, Inc., United Broilers Association, National Federation of Hog Farmers, Inc, ProPork Philippines, eventually the native animal raisers will be forming their own association.
Policies	These stakeholders actively participate in formulating policies particularly trade related concerns; the government through the Department of Agriculture supported the creation of the Philippine Native Animal Development (PNAD) Program.

	Description
Policy implementation	To a certain extent, policies on AnGR are implemented i.e. Memorandum of the Secretary of Agriculture Institutionalizing the PNAD Activities and Plans Under the Genetic Improvement Program of the Department.
Laws	Bureau of Animal Industry created by Commonwealth Act 3639; Philippine Carabao Center was created by Republic Act 7307; National Dairy Authority was created by Republic Act 7884; there is a pending Bill to support the native animal development program.
Implementation of laws	These are all currently being implemented.

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>).*

Native animal raisers have decided to form the Native Animals Raisers Association in October 2013 c/o Lanie Estole.

## 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	no	no	no	no	no	no
Cattle (specialized beef)	yes	no	yes	no	no	no	no
Cattle (multipurpose)	no	no	no	no	no	no	no
Sheep	yes	no	yes	no	no	no	no
Goats	yes	no	yes	no	no	no	no
Pigs	yes	no	no	yes	yes	no	no
Chickens	yes	no	yes	yes	no	no	no
Ducks	yes	no	no	no	no	no	no
Muscovy ducks	no	no	no	no	no	no	no
Horses	yes	no	no	no	no	no	no
Turkeys	no	no	no	no	no	no	no
Quails	no	no	no	no	no	no	no
Pigeons	no	no	no	no	no	no	no
Buffaloes	yes	no	no	no	no	no	no

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

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)	2	1	2	0	2	0	2	0	2	0	0	0	0	0	2	1
Cattle (specialized beef)	15	2	1	0	6	0	6	0	6	0	0	0	0	0	14	2
Sheep	3	3	3	3	2	2	3	3	0	0	0	0	0	0	3	2
Goats	7	2	6	2	6	2	6	2	0	0	0	0	0	0	5	2
Pigs	8	1	7	0	7	0	5	0	3	0	3	0	0	0	5	1
Chickens	3	1	3	1	3	1	0	0	0	0	2	1	0	0	0	0
Ducks	5	0	4	0	4	0	0	0	0	0	3	0	0	0	0	0
Muscovy ducks	1	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0
Horses	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0
Turkeys	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quails	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pigeons	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buffaloes	3	0	3	0	2	0	2	0	2	0	2	0	2	0	2	0
Cattle (multipurpose)	1	0	0	0	1	0	1	0	1	0	0	0	0	0	1	0

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

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

Species	Breeding method			
	Straight/pure-breeding only		Straight/pure-breeding and cross-breeding	
	Loc	Ex	Loc	Ex
Cattle (specialized dairy)	0	0	2	0
Cattle (specialized beef)	0	0	6	1
Cattle (multipurpose)	0	0	1	0
Sheep	0	0	3	3
Goats	0	0	6	2
Pigs	0	0	7	0
Chickens	0	0	3	1
Ducks	0	0	4	0
Muscovy ducks	0	0	1	0
Horses	0	0	1	0
Buffaloes	0	0	3	0

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

Species	Training	Research
Cattle (specialized dairy)	medium	medium
Cattle (specialized beef)	medium	medium
Cattle (multipurpose)	low	low
Sheep	none	none
Goats	medium	medium
Pigs	high	high
Chickens	high	high
Ducks	medium	medium
Buffaloes	high	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)	high
Cattle (specialized beef)	high
Cattle (multipurpose)	none
Sheep	medium
Goats	medium
Pigs	high
Chickens	high
Ducks	medium
Horses	low

Species	Organization of livestock keepers
Buffaloes	medium

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Species	Policies or programmes
Cattle (specialized dairy)	yes
Cattle (specialized beef)	yes
Cattle (multipurpose)	yes
Sheep	yes
Goats	yes
Pigs	yes
Chickens	yes
Ducks	yes
Muscovy ducks	yes
Horses	yes
Buffaloes	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)	Development of locally adapted Philippine dairy cattle; genetic improvement program aimed at producing Holstein-native cattle cross ("Philstein") and Jersey-native cattle cross ("Philsey") for milk production; these programs are being implemented in identified dairy zones of the National Dairy Authority (NDA).
Cattle (specialized beef)	Development of locally adapted Philippine beef cattle; genetic improvement program for Brahman cattle and experimental crossbreeding trials (Wagyu, Senepol, Red Angus) in government stations; native cattle are currently undergoing phenotypic and molecular characterization using FAO guidelines.
Cattle (multipurpose)	Development of locally adapted Philippine multipurpose cattle; genetic improvement program currently being developed at the Department of Agriculture (DA) level; we now recognize the role of artificial insemination in developing a multipurpose cattle breed adapted to local conditions.
Sheep	We are now looking into the potential of developing the sheep industry because of adaptability to local conditions; Performance evaluation of selected breeds under Philippine conditions (St. Croix, Katahdin, Dorper, White Dorper, Damara) in government stations; genetic improvement program currently being developed at the DA level.
Goats	Development of native goats and performance evaluation of selected breeds; genetic improvement program for exotic breeds (Anglo Nubian, Boer, Saanen, Alpine, Oberhasli, Toggenburg) in government and some private farms; native goats are currently undergoing phenotypic and molecular characterization using FAO guidelines.
Pigs	Development and utilization of different strains of Philippine native pigs (Bureau of Animal Industry - Tiaong (BT) black, Kalinga, Marinduque, Bondoc Peninsula); support to identification of production-related traits and genetic defects of commercial swine breeds; plan to establish a breed-based swine registry for commercial breeds; production of native pigs is being promoted by the government in support to the demand for "lechon" or roasted pig market.
Chickens	Development and utilization of different strains of Philippine native chickens; eight (8) genetic groups have just recently undergone phenotypic and molecular characterization using FAO guidelines.
Ducks	Development and utilization of egg-type ducks and meat-type ducks was conducted at the National Swine and Poultry Research Development Center (NSPRDC), Tiaong, Quezon of the Bureau of Animal Industry; Some egg-type ducks (filial generation 5 or F5) are now provided to private farms for continuing trials. A meat type duck was also developed. We are developing the egg-type ducks for the production of duck eggs for traditional Filipino delicacies of salted eggs and embryonated eggs. Duck meat is also in high demand from restaurants (particularly Pekin). Since we maintain our HPAI-free status, there is potential of exporting these products to Filipino communities abroad.
Muscovy ducks	Development for production of meat-type ducks at NSPRDC
Horses	Development of Philippine native horses for draft purposes
Buffaloes	Genetic improvement program for riverine and swamp-type buffaloes being implemented by the Philippine Carabao Center.

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 development of the Philstein and Philsey only launched last year by the NDA; no results yet.
Cattle (specialized beef)	Continuous reliance on imported genetics due to the lack of locally adapted beef cattle hence we are now organizing a genetic improvement program to address this issue for self reliance at the DA level.
Cattle (multipurpose)	Genetic improvement program still being developed at the DA level.
Sheep	No breeding program in place but the DA to address this issue within the year.
Goats	No breeding program for native goats; private farms have identified a triple crossbred animal intended for market purposes; genetic improvement program to be addressed by the DA level within the year.
Pigs	Breeding program for native pigs developed at the NSPRDC and promoted to neighboring municipalities with good adoption among women cooperatives and farmers of Quezon province. This breeding program will be recommended nationwide. Other private entrepreneurs realized the potential of native pigs and have adopted our breeding program or modified part of it for production of more native pigs for the lechon market. There is a private artificial insemination center that has native pig semen for sale to smallhold farmers. Others are using native pigs for production of organically-produced meat. The recent Typhoon Haiyan affected areas have shown the native pig's resiliency to climatic events since they have survived the typhoon.
Chickens	There is increasing demand for native chicken products (particularly meat and roasted chickens) such that many regions of the country have adopted our conservation and development efforts for their native chickens (Camarines, Bohol and Zamboanga Peninsula). There is a breed development initiative in NSPRDC for native chickens and is in its first year of trial (Paraoakan and Banaba). There is also a growing consumer awareness and demand for organically produced chickens.
Ducks	Our breeding program for egg-type ducks was successful in identifying two (2) strains segregated based on plumage pattern. We are now in the stage of disseminating these strains to private cooperators for production trials. A meat type duck was also produced at NSPRDC.
Muscovy ducks	No breeding program in place yet. Trials are undergoing at NSPRDC for meat-type ducks to lessen reliance on imported genetics and maintain HPAI-free status.
Horses	We are developing native horses as draft animals particularly in mountainous areas and recreational purposes.
Buffaloes	The Philippines is harnessing the potential of buffaloes for meat, milk and draft.

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.

except for the government research facility for buffaloes, among the main constraints include lack of training for qualified staff; lack of well-equipped facilities. We have developed the native strain of chickens, ducks and pigs for smallhold raisers capitalizing on their climate resiliency and growing popularity and acceptability to local consumers.

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)	Development of locally adapted dairy cattle
Cattle (specialized beef)	Development of locally adapted beef cattle

Species	Description of future objectives, priorities and plans
Cattle (multipurpose)	Development of dual type cattle that can provide both meat and milk
Sheep	Development of meat type sheep
Goats	Development of locally adapted goats
Pigs	Continuous identification of native pigs and their development to include their characterization
Chickens	Continuous identification of native chickens and their development including their characterization
Ducks	Further purification and molecular characterization of native ducks; production of strains with improved production performance
Muscovy ducks	Development of meat type ducks
Horses	Improvement of native stocks in the countryside
Buffaloes	Genetic evaluation of the different breeds infused into the country

## 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	low	none
Cattle (specialized beef)	medium	medium	medium
Cattle (multipurpose)	low	none	none
Sheep	low	low	none
Goats	low	low	medium
Pigs	high	medium	none
Chickens	high	medium	none
Ducks	high	medium	none
Muscovy ducks	low	medium	none
Horses	medium	low	none
Buffaloes	low	medium	high

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

- yes  
 no

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

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

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

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

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

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

There are several in situ conservation projects for the different genetic groups of native chickens throughout the country: Darag chicken in West Visayas State University in Iloilo province; Boholano chicken in Bohol; Camarines chicken in Camarines Sur; and Zamboanga Peninsula chicken in Zamboanga. There are villages in Tabuk, Kalinga that raise native pigs communally in Pasong Ilat, Tuga, Lacnog and Lumbanag barangays and inside the Kalinga Apayao State College. Other areas that maintain native pigs include Marliit Conservation Farm in Lambunao, Iloilo province, Marinduque State College, Marinduque province and Bondoc Peninsula, Quezon province. For the native cattle of Batanes, Vuhus island has a center for Vuhus cattle.

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.

The Philippine Carabao Center has developed an in vitro gene bank and facilities and is planning to extend to other species for conservation of germplasm. Other species have semen genebank at the Bureau of Animal Industry (cattle, small ruminants).

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

	Stored in national genebank
Embryos	yes
Oocytes	yes
Somatic cells (tissue or cultured cells)	yes
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)	2	1	yes	no	yes	yes	no
Cattle (specialized beef)	15	2	yes	no	yes	yes	yes
Cattle (multipurpose)	1	0	no	no	no	no	no
Sheep	3	1	yes	no	no	yes	no
Goats	7	2	yes	no	yes	yes	no
Pigs	0	0	no	no	no	no	no
Chickens	0	0	no	no	no	no	no
Buffaloes	3	3	yes	no	yes	yes	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.

Semen, embryos, oocytes & somatic cells are stored at the cryobank facility of the Philippine Carabao Center.

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.

India, Pakistan for buffaloes

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

None

## REPRODUCTIVE AND MOLECULAR BIOTECHNOLOGIES

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

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

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

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

Applicable reproductive biotechnologies are utilized in support to the genetic improvement and cryobanking for buffaloes and other livestock species.

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	no	no
Embryo transfer	no	no	no	no	no	no

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

Public sector (government) usually expected to bring in or develop genetic materials except for the commercial pig and broiler and layer industries; Donors and development agencies are instrumental in the development of the earlier reproductive biotechnology in the country (Japan for Artificial Insemination); lately, Korean government provided support for the development of the cryopreservation facility of the Philippine Carabao Center; there are external commercial breeding companies that promote exotic breeds of pigs, chickens and even ducks.

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

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

30.1. Please briefly describe the research.

Ongoing research on in vitro fertilization / multiple ovulation and embryo transfer in buffaloes



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.

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

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

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

The cryopreservation protocols for various genetic resources: semen, oocyte, embryos, somatic cells etc are in place.

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

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

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

	Extent of collaboration	Description
Development of joint national strategies or action plans	limited	There is an initiative but there is no formal collaboration yet. Meetings have been organized by a project called Biodiversity Partnerships Project and Biodiversity Finance Initiative.
Collaboration in the characterization, surveying or monitoring of genetic resources, production environments or ecosystems	limited	-do-
Collaboration related to genetic improvement	none	none
Collaboration related to product development and/or marketing	none	none
Collaboration in conservation strategies, programmes or projects	none	none
Collaboration in awareness-raising on the roles and values of genetic resources	none	none
Training activities and/or educational curricula that address genetic resources in an integrated manner	none	none
Collaboration in the mobilization of resources for the management of genetic resources	none	none

2. Please describe any other types of collaboration.

Only meeting are conducted, no formal collaboration yet.

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

Holistic approach will be achieved in the management of biodiversity in the country.

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

An integrated national policy for the management of genetic resources is needed.

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

There should be national policy in place.

## 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).*

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).

No idea yet

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).

No idea yet

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.

Plan to identify breeds of native animals that are climate resilient. Use of animal waste into biogas production and biocomposting

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).

No measurement yet but there are ongoing initiatives.

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

None yet

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.

Problem of implementation

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

None

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

No definite plan yet.

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

None so far.

#### **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:

Efforts to build inventory for native breeds of animals.

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 using FAO guideline for native chicken, pigs, goats and horses.

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:

Molecular characterization is being undertaken with one of the state university on native chicken. Goats and horses to follow.

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:

Native chicken population has been included in the national census but not on breed level yet; Recommendation that native pigs be included in the national population surveys.

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

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

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

Please provide further details:

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

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

Please provide further details:

Funding sought.

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:

Regular population survey and statistics for swine, chicken, ducks, cattle, dairy and goats but no breed level information gathered.

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

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

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

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

none

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

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

Please provide further details:

none

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

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

Please provide further details:

FAO guideline is used.

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 constraint to undertake inventory characterization.

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:

Incorporate into the national policy, breed level population surveys but it will entail additional cost.

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:

Philippine Native Animal Development (PNAD) program ([www.pnad.ph](http://www.pnad.ph)); other Department Administrative Orders on breeder accreditation ([www.da.gov.ph](http://www.da.gov.ph))

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:

We need yet to integrate the agro-ecosystem approach.

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

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

Please provide further details:

Breeding program for native animals particularly pigs, chickens, ducks

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:

Major livestock species are handled by specific government agencies including the formulation of their breeding program.

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:

Barriers and obstacles to be still identified.

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.*

e. No, but action is planned and funding is sought.

Please provide further details:

The Philippine Carabao Center has undertaken and evaluated the performance of crossbreeding program using exotic breeds ([www.pcc.gov.ph](http://www.pcc.gov.ph)).

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:

Beef Cattle Performance Recording; Buffalo Performance Recording, select breeds of native pigs and chicken.

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:

Creation of the National Technical Working Group of the PNAD demonstrates collaboration between government, academe and research institutions; participation in scientific conferences has promoted various activities of PNAD among researchers, extensionists and smallholder farmers; regular consultation with organized breeding organizations occurs (Philippine Brahman Breeders Association, Federation of Cattle Raisers Associations of the Philippines, goat and sheep raisers, etc).

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:

PNAD website development provides general information; social media (facebook) also a means for promotion.

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:

Executive Order # 247 was issued for the wildlife flora and fauna. A proposed law for native animals is yet to be passed.

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:

After the GPA, training and technical support has been provided particularly to recipients of exotic breeds infused and native pigs and chickens.

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:

Funding is sought.

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:

Recognized during the first Philippine Native Animal Summit in 2012

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:

We have a research unit called Animal Products and By-products Development Center ([www.bai.da.gov.ph](http://www.bai.da.gov.ph)) that promotes use of native animals.

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

Law to sustain gains of the PNAD.

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.*

Need further international collaboration and funding sought especially for molecular characterization.

### 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:

Funding is sought.

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:

Indiscriminate crossbreeding; 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:

PNAD program but a law will strengthen current efforts.

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:

Regular consultative meetings are undertaken with stakeholders.

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:

Chickens and pigs, buffaloes, cattle; some islands being considered as conservation centers (e.g. Batanes for Vuhus cattle).

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:

Native chickens and pigs as well as goat and cattle at government stations ([www.pnad.ph](http://www.pnad.ph), [www.bai.da.gov.ph](http://www.bai.da.gov.ph)).

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:

The Philippine Carabao Center has established facilities for cryobanking of genetics.

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:

After the adoption of the GPA.

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

- a. Yes
- b. No

Please provide further details:

We have established and continue to implement conservation programs.

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:

Trained manpower, facilities and funding sought.

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:

Funding and additional manpower sought considering the whole government bureaucracy is undergoing rationalization process so hiring of young and new staff is delayed.

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

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

Please provide further details:

The recent experience with Typhoon Haiyan has taught us to protect breeds and populations at risk. The Philippine



Carabao Center had established a cryobank facility and are offering to store semen, embryos and somatic cells.

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:

We are now implementing the Animal Relief and Rehabilitation for Typhoon Haiyan affected areas through animal restocking and extraction of germplasm from conservation centers.

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:

See previous answers.

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:

PNAD

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

Establishing more conservation centers, more training and advocacy

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:

While we have initiatives, we believe it is not sufficient.

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:

Currently undergoing a Department-wide review of organizational arrangements.

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:

Meetings are organized but no formal collaboration yet.

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:

Need to review and incorporate other aspects of the GPA.

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:

Need to review and incorporate breed level information to the regular national surveys.

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:

Data is currently being reviewed for uploading to DAD-IS.

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:

Only for Native animals - provide policy directions.

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:

Periodic meetings and conferences conducted.

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:

First Native animal summit in 2012; second native animal summit planned in October 2014.

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:

Carabao has legislation; need legislation for native animals.

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:

Continuous training and technology transfer for regional focal persons since 2012.

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:

Community-based breeding programs for native chickens and pigs.

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

- a. Yes
- b. No

Sustainable use and development?

- c. Yes
- d. No

Conservation of breeds at risk?

- e. Yes
- f. No

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

None that we know of.

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:

With academe (University of the Philippines Los Banos - Animal and Dairy Science Cluster), Philippine Carabao Center, Philippine Council for Agriculture Aquatic Natural Resources Research and Development ([www.pcaarrd.dost.gov.ph](http://www.pcaarrd.dost.gov.ph)).

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:

Philippine carabao center has established international collaboration with Korean, Japanese and Taiwanese research institutions.

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

Characterization?

- a. Yes
- b. No

Sustainable use and development?

- c. Yes
- d. No

Conservation of breeds at risk?

- e. Yes
- f. No

If yes, please list the international NGOs:

None that we know of.

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

- a. Yes
- b. No

Please provide further details:

Funding for the implementation of PNAD was identified and provided by the Department.

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:

Funding sought.

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

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

Please provide further details:

None that we know of.

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

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

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

Please provide further details:

none

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

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

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

none

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

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

Please provide further details:

none

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

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

Please provide further details:

none so far

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

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

Please provide further details:



none

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

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

Please provide further details:

none

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

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

Please provide further details:

none

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

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

Please provide further details:

none

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

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

Please provide further details:

none

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

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

Please provide further details:

none

## EMERGING ISSUES

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

Issues to be addressed in future

Issues to be addressed in future (next ten years)	Reasons	Actions required
Climate change	Philippines is frequently visited by natural calamities.	Emergency preparedness plan for animal genetic resources

Submit by Email