Progress report on the implementation of the *Global Plan of Action for Animal Genetic Resources - 2007 to 2011*

Country: Poland

Strategic Priority Area 1: Characterization, Inventory and Monitoring of Trends and Associated Risks

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

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

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

a. Completed before the adoption of the GPA ◉

b. Completed after the adoption of the GPA ○

c. Partially completed (further progress since the adoption of the GPA) ○

d. Partially completed (no further progress since the adoption of the GPA) ○

Please provide further details:

The inventory of Polish AnGR was generally completed a long time ago. However, some inventory-type activities have been undertaken in the last several years.

There are two native breeds that had been considered already extinct: the White-backed cattle and the Carpathian goat. The inventory in the region of origin of the White-backed cattle conducted in 2000-2002 and the Carpathian goat in 2006 allowed individuals with a phenotype typical of these breeds to be found. Molecular characterization confirmed genetic diversity of the Whitebacked cattle in comparison to other dairy breeds kept in Poland. A breed restoration process is currently being carried out for these two populations.

In the case of two native sheep breeds, the Polish Merino old type and the Cakiel sheep, assessment and selection of ewes to be initially included in the conservation programme was conducted in 2007 on many private sheep farms. This work was performed by a special commission, including representatives of the Polish Union of Sheep-Farmers, the National Research

Institute of Animal Production (NRIAP) and members of the Working Group on sheep genetic resources, established to undertake this task.

Moreover, initiation of a number of conservation programmes in 2007, for the Polish Red and White and the Polish Black and White cattle as well as Sztumski i Sokolski horses, was based careful analysis of pedigree and identification of animals that have met relevant pedigree criteria.

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 ○

g. None, but action is planned and funding is sought ○

f. None ○

Please provide further details:

There were many studies focused on the phenotypic and performance characterization of breeds kept in Poland. Some of them were directly related to enhancement of the breeds' performance and the profitability of their utilization in commercial production, others had more general objectives, e.g. understanding the inheritance of coat colour. Such studies are being continued after the adoption of the GPA.

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:

A number of molecular characterization studies have been undertaken over time to characterize native breeds of key livestock species (e.g. the Polish Red cattle, Zlotniki pigs, Olkuska sheep, Green-legged partridge chicken and so on). However, the current level of understanding of the molecular characterization of our AnGR, and especially native breeds, is still not sufficient.

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:

Baseline surveys are conducted regularly at species level by the Central Statistical Office of Poland (http://www.stat.gov.pl/gus/yearbooks_ENG_HTML.htm). The Statistical yearbook of agriculture is issued every year, the last one available online presents the results from 2010; the full census is performed about every 10 years.

Within each species, only the age structure of the population is estimated (e.g. total cattle, cattle less than 1 year old, between 1-2 years, over 2 years old, total cows and dairy cows), but not the breed structure. The Central Statistical Office of Poland conducts surveys only for key livestock species, those of the highest importance for agricultural production. The information on population sizes of under-utilized species is limited.

Moreover, the Animal Identification and Registration system managed by the Agency for Restructuring and Modernisation of Agriculture (ARMA) provides information on the size of commercial populations of those species (horses, cattle and sheep) that are under obligatory individual identification and registration.

In the case of the active population (pedigree animals, under recording scheme), systematic monitoring of each breed is in place as a by-product of performance recording and herd books registrations. This activity is conducted by breeders' societies. In the case of commercial populations, only limited information is available as regards breed structure and trends.

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:

Monitoring of commercial populations at species level:

- the Central Statistical Office of Poland: census and monitoring of livestock populations;
- the Agency for Restructuring and Modernisation of Agriculture (ARMA): the Animal Identification and Registration System.

No monitoring of trends in the total population size of individual breeds has been carried out, except for horses and cattle for which breed information is included in the animal passport of individual animals. In the case of sheep, for a few years only, when commercial flocks were financially supported by the state, information on individual breed population size was also available.

The monitoring of active populations under performance recording is conducted by the respective breeders' societies or other entities (e.g. Agricultural Universities, the Chamber of Agriculture, the National Animal Breeding Centre) that have been entrusted by the Ministry of Agriculture and Rural Development with the management of herd books for the respective species or breeds.

The monitoring of populations under the conservation programme is conducted by the National Research Institute of Animal Production in cooperation with breeders.

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:

The breeders' societies (as well as other entities entrusted by the Ministry with breeding activities) are responsible for reporting, on an annual basis, on the status of the populations under the performance recording they carry out and the number of females and males registered in herd books within each breed.

7. Are the population status and trends of your country's animal genetic resources being monitored regularly for all livestock species of economic importance (SP 1, Action 2)?

a. Yes, regular monitoring commenced before the adoption of the GPA ○

b. Yes, regular monitoring commenced after the adoption of the GPA ○

c. Yes, regular monitoring is being undertaken for some species (coverage increased since the adoption of the GPA) ○

d. Yes, regular monitoring is being undertaken for some species (coverage not increased since the adoption of the GPA) ◉

e. No, but action is planned and funding identified ○

f. No, but action is planned and funding is sought ○

g. No ○

Please provide further details:

The Central Statistical Office of Poland is conducting regular monitoring of the total population size of key species: those of highest importance for agricultural production. The age structure within each species is included in this monitoring.

The Agency for Restructuring and Modernisation of Agriculture (ARMA) is responsible for implementation of the Animal Identification and Registration System.

Since the establishment of the National Focal Point, the monitoring of populations under the conservation programme has been conducted by the National Research Institute of Animal Production in cooperation with breeders.

8. Which criteria do 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 ○

If applicable, please describe your national criteria or provide link to website describing criteria of international body:

The European Union criteria for identifying breeds that require intervention and some conservation measures have been applied in Poland in our AnGR conservation programmes.

The EU criteria are set out in Annex IV (THRESHOLDS FOR ENDANGERED BREEDS (REFERRED TO IN ARTICLE 27 (4)) of the EC regulation 1974/2006 of 15 December 2006, laying down detailed rules for the application of Council Regulation (EC) No 1698/2005 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD) (http://www.agriculture.gov.ie/farmerschemespayments/crosscompliance/legislation/).

The criteria developed by FAO to identify acute risk situations such as critical and endangered populations are also used to highlight the most endangered AnGR.

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:

It is rather an overstatement, but no other option seems to fit better to our situation.

In Poland, since the initiation of the formal conservation programme in 1999, every breeder participating in the conservation programme and receiving financial support from the state has been obliged to give the National Focal Point for AnGR a notice, 3-6 months ahead, about his plans to sell his herd/flock. It gives us an opportunity to look for a potential new location for the herd.

The lesson learnt from the foot-and-mouth disease epidemic in the UK resulted in the introduction of the obligatory measure to inform the Poviat Veterinary service of the location of conservation herds within the area of their responsibility, in case of disease outbreaks.

So far, there is no specific emergency response system for AnGR to address natural disaster situations. The general national emergency response system includes preparedness measures for saving human and animal life in the case of natural disasters.

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:

To some extent such research has been undertaken and methods have been developed, especially in the area of performance characterization.

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. ○

If yes, please list them, being as specific as possible:

The major obstacles to successful monitoring of the commercial populations include:

- a strictly economic approach in the current monitoring system carried out by the Central Statistical Office of Poland; the monitoring system based only on the age structure of the population of a given species does not allow information to be gathered on breed structure within the population;
- limited access to databases related to the Animal Identification and Registration System managed by the Agency for Restructuring and Modernisation of Agriculture due to the legislation that imposes restrictions on access to personal data (breeders' personal data, including address and phone number);
- small size and dispersedness of farms;
- limited financial resources to undertake additional monitoring focused on AnGR.

12. If applicable, please list the priority measures that need to be taken to address these barriers and obstacles and to enhance your country's inventory, characterization and monitoring programmes - please be as specific as possible:

The priority measures will be identified in the National Strategy for Sustainable Utilisation and Conservation of the Farm Animal Genetic Resources with Action Plan for 2012-2020/2025, which is currently under preparation.

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):

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 the text of the policies or a web link to the document:

There is, so far, no policy document that addresses specifically sustainable use of animal genetic resources. However, there are the following policy and legislative documents:

- National Strategic Plan for 2007-2013 Rural Development
- Rural Development Programme for 2007-2013

(Both documents are available at http://www.minrol.gov.pl/eng/content/view/full/18575)

- Animal breeding law of 29th June, 2007
- The National Biodiversity Strategy and Action Plan that addresses the agricultural biological diversity (http://www.cbd int/doc/world/pl/pl-nbsap-v2-en.pdf targets 39 - 47)

The national agrobiodiversity strategy to complement the National Biodiversity Strategy and Action Plan is still in preparation.

Moreover, the “Strategy for sustainable development of rural areas, agriculture and fisheries” is under preparation; the public consultations were concluded in 2011. The latest version of the document, of 12th October 2011, contains goal 5.1. “Conservation of natural environment in the agricultural sector and agricultural biological diversity in the rural areas”.

The National Strategy for Sustainable Utilisation and Conservation of the Farm Animal Genetic Resources with Action Plan for 2012-2020/2025 will provide a strategic vision and action plan for AnGR and fill this gap.

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:

The National Biodiversity Strategy and Action Plan 2007-2013 takes into account the agro-ecosystem approach. Operational target 40 = The implementation of the ecosystem approach in farming (http://www.cbd.int/doc/world/pl/pl-nbsap-v2-en.pdf).

16. Are breed development programmes revised, for all major species and breeds in your country, with the aim of meeting foreseeable economic and social needs and market demands (SP4, Action 2)?

a. Yes, regular revisions commenced before the adoption of the GPA ◉

b. Yes, regular revisions commenced 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 information:

The breeders' societies that are in charge of breed development programmes evaluate the results of the implementation of breeding programmes on regular basis. The revision and update of breeding programmes takes place as required.

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 ○

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. ○

If yes, what are they?

Q 17: Breeding programmes are in place for all major livestock species and breeds within these species.
The major barriers and obstacles to enhancing sustainable use and development of AnGR include:

- the continuously decreasing profitability of livestock production, especially in the pig sector, creates difficult conditions

for sustainable use and further development of AnGR and livestock production as such;
- high share of small farms that, due to the small scale of production, have difficulties in selling their products (especially milk) to processing plants; and
- very high veterinary requirements (higher than in the other EU member states) for on-farm processing and sail of animal origin food products at local markets.

19. Have the long-term impacts of the use of exotic breeds on local 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.

a. No exotic breeds are being used for agricultural production ○

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

c. Yes, assessments were introduced after the adoption of the GPA ○

d. No, but action is planned and funding identified ○

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

f. No ○

Please provide further information:

The key example of using exotic genetic material on local breed populations is backcrossing of the native lowland black and white cattle with Holstein-Friesian. As a result of this long-term continuous backcrossing, an active black and white cattle population was completely replaced with Holstein genotype. This process led, in 2005, to recognition of a new breed, the Polish Holstein-Friesian cattle, and to the opening of herd books for this breed. At the same time, it was necessary to include in the conservation programme the remaining animals representing the traditional dual-purpose type: the Polish Black and White and the Polish Red and White cattle.

There were many positive experience in using exotic breeds. These include:
- use of exotic breeds for upgrading local populations (development of the Polish lowland and longwool sheep breeds with contribution of the English longwool breeds, upgrading the Polish Red cattle with Angler, upgrading the Polish landrace and Yorkshire pigs with imported genetics);
- development of the Polish heavy coldblooded horses using Arden and Belgian horses;
- crossing local populations (eg commercial cross-breeding with imported meat breeds in prime lamb production); and
- development of the beef cattle sector since 1994 based on imported European beef breeds, in the absence of native ones.

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 ○

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 ○

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 ○

23. Has your country developed agreements for equitable sharing of the benefits resulting from access to, and use and development of, animal genetic resources and associated traditional knowledge (SP3, Action 2)?

a. Yes, sufficient agreements have existed since before the adoption of the GPA ○

b. Yes, sufficient agreements exist because of progress made since the adoption of the GPA ○

c. Yes, some agreements exist (progress has been made since the adoption of the GPA) ○

d. Yes, some agreements 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 information:

The exchange of animal genetic resources is based on private contracts; the price of the animal reflects its genetic/

commercial value. No additional arrangements are in place.

24. Have training and technical support programmes for the breeding activities of livestock-keeping communities 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 ◉

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 ◉

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 ◉

27. Have efforts been made in your country to promote products derived from indigenous and local species and 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

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

The priority measures will be identified in the National Strategy for Sustainable Utilisation and Conservation of the Farm Animal Genetic Resources with Action Plan for 2012-2020/2025.

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):

In Poland, indigenous production systems and associated traditional knowledge and practices related to animal genetic resources are of a relatively low importance. The prevailing production system is conventional, based on family farms, or intensive, with industrial farms. Generally, local rural communities are practising traditional husbandry practices.

The mechanism to facilitate interactions among stakeholders, scientific disciplines and sectors is supported by:

- establishment of Breeding Councils by relevant breeders' societies; and
- conducting, on a regular basis, consultations between the Ministry of Agriculture and Rural Development, breeders' societies and NGOs.

Farmers and livestock keepers are provided with information on the results of performance recording carried out by breeders' societies and other relevant organizations. The results of breeding value estimation in key livestock species, both in the form of publications and on the website, is provided by the National Research Institute of Animal Production, which is in charge of this work.

Extensive training for farmers is provided by a number of entities: advisory service, breeders' societies, the National Research Institute of Animal Production, the Ministry of Agriculture and Rural Development, and within various projects carried out by local/regional authorities (e.g. Sheep Plus project) and NGOs.

Some efforts have been made to promote traditional food products, also derived from native breeds, through a registration system of regional products established by the Ministry (http://www.minrol.gov.pl/pol/Jakosc-zywnosci/Produkty-regionalne-i-tradycyjne/Lista-produktow-tradycyjnych/ in Polish).

The National Research Institute of Animal Production, in cooperation with Slow Food, initiated promotion and popularization of products derived from native breeds. There are opportunities to develop more speciality products from native breeds, as necessary measures for their recognition on the market are already in place.

Transhumant grazing system of Polish mountain sheep provides an example of a traditional production system that is recognized and supported because of its importance in maintaining natural ecosystems in Podhale region and its role in the development of highlanders' culture and typical speciality product - oscypek cheese.

Another example is the goose meat production system based on oat feeding, which provides an excellent quality product.

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 ○

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:

There is generally no erosion at breed level; we have not lost any breed since the establishment of the NFP. The population size of almost all breeds included in the *in situ* conservation programme is systematically increasing, with the exception of native pig breeds due to the lack of profitability in the pig sector. Financial constraints and small size of the goat population resulted in a decision to conclude the performance recording service in 2007, with the exception of Saanen goats. This will affect management of goat genetic resources in the country.

The potential erosion of within-breed diversity requires better assessment; this work has only been initiated and so far undertaken for a limited number of breeds. There is a need to increase awareness about the importance of maintaining within-breed diversity in commercial populations.

The National Research Institute of Animal Production is developing databases for all populations under conservation programmes, which will enable evaluation of their inbreeding level.

32. Does your country have conservation policies and programmes in place to protect breeds at risk in all important livestock species (SP 7, SP 8 and SP 9)?

a. Yes, comprehensive policies and programmes have been in place since before the adoption of the GPA ◉

b. Yes, comprehensive policies and programmes exist because of progress made 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 ○

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 ○

34. What measures are being used in your country to conserve breeds at risk of extinction and to prevent breeds from becoming at risk (SP 8 and SP 9)?

In situ

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

a. Yes ◉

b. No, but action is planned and funding identified ○

c No, but action is planned and funding is sought ○

d. No ○

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:

In situ conservation is the most important conservation measure implemented in Poland. It is based on broad participation of farmers, and financed either from the agri-environmental measures within the Rural Development Programme (breeds of cattle, horses, sheep and goats) or by state aid (poultry, fur animals, fish and bees).

Ex situ in vivo

Glossary: Ex situ in vivo - *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.*

e. Yes ◉

f. No, but action is planned and funding identified ○

g. No, but action is planned and funding is sought ○

h. No ○

Please describe the measures (indicating for each whether they were introduced before or after the adoption of the GPA) or provide a web link to a published document that provides further information:

Ex situ in vivo conservation measures are also applied in Poland thanks to the initiatives of the public sector, agricultural universities and research institutes that decided to establish herds/flocks of native breeds, usually outside of the region of origin of these breeds. Usually, such initiatives were undertaken a long time ago to ensure the survival of a given breed (e.g. an Olkuska sheep flock established in the central Poland at the Warsaw University of Life Sciences experimental farm in 1992). A majority of poultry breed collections are also kept at experimental farms outside the traditional production systems, so can be considered *ex situ in vivo* collections. However, there is no national level coordination of the implementation *of ex situ in vivo* conservation methods.

Ex situ in vitro

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.*

i. Yes ◉

j. No, but action is planned and funding identified ○

k. No, but action is planned and funding is sought ○

l. No ○

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:

At present, there is no a comprehensive *ex situ in vitro* conservation programme in Poland, but a new facility to host the AnGR gene bank is being developed in the National Research Institute of Animal Production in Balice, as a part of the Multi-year Programme of Work of the Institute for 2011-2015.

The largest collection of AnGR material *in vitro* is located in the Bank of Biological Material of the NRIAP in Balice. The collection consists mainly of bull semen; it is both a historical and a working collection, the semen is actively used to support the current conservation programme.

The scope of cattle semen collection in 2011 is presented in the table below (Barbara Szczęśniak-Fabijanczyk, 2012):

	Number of doses	**Number of donors**
Polish Red cattle	40 512	129
White-backed cattle	1 050	12
Polish Red and White	5 152	16
Polish Black and White	4 810	17

The historical genetic material stored in the Bank of Biological Material of the NRIAP in Balice includes (Krupiński and Martyniuk, 2009):
· 680 semen samples of Swiniarka rams
· 1217 semen samples of Wrzosówka rams
· 2575 semen samples of Olkuska rams
· 1916 embryos sired by 47 bulls of the Polish Red cattle

There are also some dispersed collections of genetic material of native breeds, and local lines of fish (carp and rainbow trout) usually acquired within research projects carried out by agricultural universities and research institutes.

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

a. Yes ◉

b. No ○

36. Has your country identified the major barriers and obstacles to enhancing the conservation of its animal genetic resources?

a. Yes ◉

b. No ○

c. No major barriers and obstacles exist. Comprehensive conservation programmes are in place ○

If yes, please list them, being as specific as possible:

Although we have a comprehensive *in situ* conservation programme, the key future priority is establishment of an *ex situ in vitro* programme.

The major obstacles to enhancing the conservation animal genetic resources include:

- insufficient financial resources for the *ex situ in vitro* conservation programme including systematic collection of

genetic material;

- insufficient financial resources for conservation of breeds financed by state aid (fur animals, poultry, fish and bees) - which restricts the enhancement of conserved populations; and
- occasional difficulties in ensuring collaboration between the many various stakeholders involved in AnGR conservation (AI organizations, ARMA, breeders' societies).

37. 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?

c. Yes ○

d. No, but action is planned and funding identified ◉

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

f. No ○

38. 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 ◉

39. 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 ◉

40. 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 ○

If yes, briefly describe the research:

The National Research Institute of Animal Production in Balice and some other research teams are working on methods to improve the efficiency of *in vitro* conservation of animal biological material. The studies are focused on the development of the best semen diluters and conditions for conducting the freezing process, especially in the cases of pigs, rabbits and so on.

41. 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 ○

42. What are your country's priority requirements for enhancing conservation measures for animal genetic resources? Please list them, being as specific as possible:

The priority measures will be identified in the National Strategy for Sustainable Utilisation and Conservation of the Farm Animal Genetic Resources with Action Plan for 2012-2020/2025. However, some priorities can already be indicated:

- operational gene bank for AnGR;
- establishment of a comprehensive *ex situ in vitro* conservation programme;
- enhancing the profitability of *in situ* conservation through development of niche products from native breeds; and
- introduction of measures to manage genetic diversity within breeds.

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

As regards Q38, there are no specific arrangements in place to protect breeds and populations that are at risk from natural or human-induced disasters, except the overall national emergency response system. However, with dispersed conservation flocks/herds and also double collections of the poultry in *ex situ in vivo* conditions, a certain level security of our AnGR is maintained.

As regards Q41, various activities are undertaken to promote documentation and dissemination of knowledge, technologies and best practices for conservation of AnGR, including:

- regular contacts with breeders participating in the conservation programmes by species coordinators;
- organization of conferences, and meeting with breeders keeping the given breed;
- dissemination of information via website and various publications; and
- organization of native breed shows and exhibitions.

Regional cooperation:

- active participation in activities of the European Regional Focal Point (ERFP).

Please find additional information in Annex 1.

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

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

44. Has your country assessed its national institutional capacity to support holistic planning of the livestock sector since the adoption of the GPA (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 ○

45. Have tools been developed for national planners to use in shaping the future development of the livestock sector in accordance with national priorities, including in relation to the deployment of animal genetic resources (SP 12, Action 4)?

a. Yes, the development of tools commenced before the adoption of the GPA ○

b. Yes, the development of tools 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 ◉

If yes, please describe the tools:

46. 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 a copy of your country's national strategy and action plan as a separate document or a web link to the document:

http:// [ ]

47. 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 ○

48. Has your country established or strengthened a national database for animal genetic resources (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 ○

49. 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 ○

50. 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 ○

If yes, list its main functions:

The main functions of the National Advisory Board for AnGR include:
- developing a vision for AnGR conservation and sustainable use in Poland;
- supervision of overall AnGR conservation activities in Poland;
- undertaking various initiatives related to AnGR management;
- analysing and addressing potential conflicts in the implementation of the conservation programmes;
- providing guidance on the process of preparing the NSAP (national strategy and action plan for AnGR);
- overseeing and evaluating progress in preparing the NSAP;
- mobilizing support for development and implementation of the NSAP;
- establishing criteria for evaluating progress in the implementation of the NSAP;
- evaluating the performance of the National Focal Point.

51. 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 ○

52. Does the National Focal Point 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 ○

If yes, briefly describe them:

Activities to increase public awareness include:
- organization of annual exhibition of native breeds during the National Animal Show;
- organization of regional animal shows;
- organization of seminars, lectures and presentations on native breeds;
- preparation of various gadgets for the public: T-shirts, clips for fridge, etc;
- development of printed promotional/information materials;
- preparation of a book on native breeds;
- interaction with the media - mainly Polish radio and press and TV;
- promotion of products derived from native breeds;
- organization of lessons for school children, and demonstration of native breeds; and

- organization of visits to conservation farms.

53. Have national policies and legal frameworks for animal genetic resources been reviewed and appropriate changes made if necessary (SP 20)?

a. Yes, frameworks were reviewed before the adoption of the GPA and appropriate changes made ◉

b. Yes, frameworks have been reviewed since the adoption of the GPA and appropriate changes made ○

c. Yes, frameworks have been reviewed since the adoption of the GPA, but appropriate changes not yet made ○

d. No, but action is planned and funding identified ○

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

f. No ○

54. Have your country's needs for research and education been reviewed in all areas of management of animal genetic resources since the adoption of the GPA (SP 13, 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 ○

If yes, briefly describe them:

55. Have partnerships been established among research, training and extension institutions and networks of researchers, breeders and conservation organizations to support the implementation of the Global Plan of Action (SP 14, Action 2)?

a. Yes ◉

b. No, but action is planned and funding identified ○

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

e. No ○

56. 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 ○

57. 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:

Some of the NGOs identified below are involved in agrobiodiversity and AnGR conservation and sustainable use or promotion of organic agriculture. Others have objectives related to the protection of nature/birds or social development and poverty eradication. However, all of them have been implementing AnGR projects, taking into account various roles and values of livestock, and especially native breeds.

Society for Traditional Breeds and Varieties: http://www.ddoir.org.pl/site/
Polish Association of Users and Friends of Working Horses: http://www.konierobocze.pl/
Social Ecological Institute: http://sie.org.pl/english

Foundation for Sustainable Development: http://fer.org.pl/index.php?dzial=2&kat=8
Association Solidarity "PLUS" EKO "School of Life »: http://www.ekosz.republika.pl/
Barka Foundation for Mutual Help: http://barka.org.pl/taxonomy/term/28
Society of Friends of the upper Vistula River: http://www.tpdw.pl/

Polish Society for Birds Protection http://www.ptop.org.pl/
Association Stork: http://www.bocian.org.pl/
Agri-Natura Foundation: http://www.agrinatura.pl/

58. 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 ○

d. No ○

59. Please provide further comments describing specific activities related to Strategic Priority Area 4: Policies, Institutions and Capacity-building (including regional and international cooperation):

Specific comments on Strategic Priority Area 4.

As regards Q 53, the animal breeding law, since its amendment in 2004, includes special provisions for AnGR conservation; the new law on organization of animal breeding and reproduction, of 29th June 2007, has a specific article on AnGR conservation.

There have been a lot of activities to strengthen research and educational institutions in the field of animal genetic resources management (Q58). In the National Research Institute of Animal Production, a special unit was established and species coordinators nominated to support conservation activities.

A number of agricultural universities established courses on AnGR and/or biodiversity and textbooks were prepared for students.

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

60. 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 ○

If yes, briefly describe the collaboration:

Examples of international collaboration include:

- collaboration in the management of Hutsul horse transboundary population - the studbooks of origin are kept in Poland;
- bilateral cooperation with Ukraine - provision of breeding material of Hutsul horses and Polish Red cattle, as well as conducting training;
- organization of a seminar for Armenian school children - the Polish Ministry of Foreign Affairs cooperation project executed by Heifer International;
- participation in training workshops organized by ERFP;
- bilateral cooperation with Lithuania as regards Whitebacked cattle; and
- participation in various other activities of the ERFP.

61. 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:

The SAVE Foundation ran a project related to conservation of the Polish Red cattle in the south of Poland in the late 1990s. Heifer Project International is very active in Poland, also in promotion of native breeds.

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

a. Yes ◉

b. No ○

If yes, provide brief details:

The State of the World process enhanced awareness of AnGR, and most of all led to the amendment of the animal breeding law in 2004 and an increase in funding for *in situ* conservation.

The total financing for AnGR conservation from the state budget in 2004 was at the level of 2.7 million PLN (as subsidies provided directly for breeders). In the period of 2007-2013, the projected budget for conservation of cattle, horse, sheep and pig breeds was over 200 million PLN. Breeds under conservation within other species are financed from state aid at a slightly higher level than in 2004.

63. Has your country received external funding for implementation of the GPA?

a. Yes ◉

b. No ○

If yes, provide brief details (from whom, for what, how much):

Financial support for the conservation of native endangered breeds was partly supported by the EU, according to Article 39. Agri-environment payments, of the COUNCIL REGULATION (EC) No 1698/2005 of 20 September 2005 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD).

64. Has your country established or strengthened international research and education programmes to assist developing countries and countries with economies in transition to better manage animal genetic resources (SP 16)?

a. Yes, programmes established before the adoption of the GPA and strengthened since ○

b. Yes, programmes established before the adoption of the GPA but not strengthened since ○

c. Yes, programmes established 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 ◉

If yes, briefly describe them:

65. Has your country established or strengthened international support to assist developing countries and countries with economies in transition to obtain training and technologies and to build their information systems (SP 15)?

a. Yes, programmes established before the adoption of the GPA and strengthened since ○

b. Yes, programmes established before the adoption of the GPA but not strengthened since ○

c. Yes, programmes established 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 ◉

If yes, provide brief details:

66. 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 ◉

If yes, provide brief details and specify whether it was bilateral or multilateral; research cooperation or aid; and to whom and for what it was given:

Annex 1. Additional information to question 43:

Table 1. The development of the *in situ* conservation programme in Poland (Martyniuk and Krupiński, 2009).

Species	1999		2008		2013 (projected)	
	Number of breeds	Number of females	Number of breeds	Number of females	Number of breeds	Number of females
Cattle	1	150	4	3270	4	10350
Horses	2	400	7	4660	7	10800
Sheep	10	3645	13	24400	13	40300
Pigs	3	575	3	2150	3	4500
Fur animals	5	202	12	1204	12	1200
Chickens*	10	5500	10	5500	10	5500
Geese*	14	3200	14	3213	14	3200
Ducks*	10	2340	10	3056	10	3200
Bees	4	120	4	1041	4	1100
* number of females and males together						