

STATUS OF THE WORLD'S LIVESTOCK GENETIC RESOURCES. PREPARATION OF THE FIRST REPORT ON THE STATE OF THE WORLD'S ANIMAL GENETIC RESOURCES

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Introduction

FAO's Commission on Genetic Resources for Food and Agriculture is the intergovernmental forum for negotiating action on genetic resources for food and agriculture. This commission deals with all aspects of genetic resources: plant, animal, forest and fisheries, and holds regular sessions every two years. Technical guidance on the domestic animal side is provided by a working group of this commission, the Intergovernmental Technical Working Group on Animal Genetic Resources. Member countries represented in these intergovernmental bodies have requested FAO to develop and implement a *global strategy for the management of farm animal genetic resources* as a strategic framework to guide international efforts in the animal genetic resources sector. Aims of the *global strategy* are to enhance awareness of the multiple roles and values of animal genetic resources, to provide guidance for establishing national, regional and global policies, strategies and actions, and to facilitate and coordinate the activities of many independent organizations that have an interest in animal genetic resources. In the context of the *global strategy for the management of farm animal genetic resources*, member countries have requested FAO to prepare the *First Report on the State of the World's Animal Genetic Resources* Status on the progress of this process is reported in the present paper.

Farm animal genetic resources at risk

Farm animal genetic resources face a double challenge. On the one hand the demand for animal products is increasing in developing countries: FAO has estimated that demand for meat will double by 2030 (2000 basis); over the same 30-year period, demand for milk will more than double. On the other hand, animal genetic resources are disappearing rapidly worldwide. Over the past 15 years, 300 out of 6000 breeds identified by FAO have become extinct. Many breeds of local importance for food security are not being improved or utilized in a sustainable manner and are in danger being lost or diluted by crossbreeding.

Conservation and development of local breeds is important because many of them utilize lower quality feed, are more resilient to climatic stress, are more resistant to local parasites and diseases, and represent a unique source of genes for improving health and performance traits of industrial breeds. It is important also to develop and utilize local breeds that are already adapted to their environments, the majority of which are harsh, with very limited natural and managerial input. Animals genetically adapted to these conditions are expected to be more productive at lower costs, support food, agriculture and cultural diversity, and be effective in achieving local food security objectives.

In many countries local communities depend on these adapted genetic resources. Their disappearance or drastic modification, for example by crossbreeding, absorption or replacement by exotic breeds, will have serious negative impacts on these human populations. Presently most breeds at risk of extinction are not supported by any established conservation

programmes or active conservation through sustainable utilization (breeding plans) and thus breed extinction rates are increasing globally.

The global strategy for the management of farm animal genetic resources

The key component of the *global strategy* is the country-based planning and implementation infrastructure, which includes five structural elements:

- The global focal point at FAO Headquarters leads the planning, development and implementation of the overall strategy; develops and maintains the information and communication systems; oversees preparation of guidelines; coordinates regional activity; prepares reports and documents for meetings; facilitates policy discussions; identifies training, education and technology transfer needs; develops programme and project proposals; and mobilizes donor resources;
- Regional focal points facilitate regional communications; provide technical assistance and leadership; coordinate regional training, research and planning activities; help develop regional policies; assist in identifying project priorities and proposals, and interact with government agencies, donors, research institutions and non-governmental organizations;
- National focal points lead, facilitate and coordinate country activities; identify capacity-building needs; develop project proposals; assist with the development and implementation of country policy; interface with national stakeholders and with the regional and the global focal points;
- Donor and stakeholder involvement is necessary to provide financial and institutional support to the *global strategy*. In this context, the global focal point seeks to ensure stakeholder involvement in all major aspects of the *global strategy*, facilitating opportunities for governmental and non-governmental contributions;
- DAD-IS, the Domestic Animal Diversity Information System (<http://www.fao.org/dad-is/>) is a widely available and easily accessible global data base and information source. This global facility makes it possible to share data and information among countries, allowing a rapid and cost effective distribution of guidelines, reports and meeting documents, and providing a platform to exchange views and address specific information requests, linking breeders, scientists and policy makers. A key feature of DAD-IS is the breeds database, which provides the data for the early warning system for animal genetic resources through the *World Watch List for Domestic Animal Diversity*, the third edition of which was released in 2001.

First report on the state of the world's animal genetic resources

As part of the *global strategy for the management of farm animal genetic resources*, FAO invited 188 countries to participate in the *First report on the state of the world's animal genetic resources*, to be completed by 2006. To date 151 countries have accepted to submit country reports. Guidelines for preparation of country reports have been published in *Animal Genetic Resources Information Bulletin* (FAO) number 30. These guidelines are used in assisting countries in the preparation of reports as strategic policy documentation covering the state of animal genetic resources, state of the art and national capacity to manage these resources, and country needs and priorities. Country reports will serve as the base documentation for the state of the world reporting process; thus the involvement of all stakeholders in the development of these reports is strongly encouraged.

The objective of the country and global assessments is to provide a comprehensive analysis of the status and trends of the world's farm animal biodiversity and of their underlying causes, as well as of local knowledge regarding its management. The task is to go beyond description of the resources by analyzing the state of these resources and capacities to manage them, drawing lessons from past experiences and identifying problems and priorities. Country reports are policy documents covering the three strategic questions: *Where are we? Where do we need to be? How do we get to where we need to be?* Country reports are intended to be used in planning and implementing priority country actions. In addition, the country report will serve as documentation for development of the regional and global *reports on strategic priorities for action* and, subsequently, the first global report on the state of farm animal genetic resources.

Country reports provide an assessment in three major areas:

- the state of diversity as an assessment of the state of conservation, erosion and utilization of farm animal agricultural biodiversity, and an analysis of the underlying processes;
- the state of national capacity to manage animal genetic resources, including existing policies, management plans, institutional infrastructures, human resources and equipment; and
- the state of the art as the available methodologies and technologies to assist farmers, breeders, scientists to better understand, use, develop, and conserve animal genetic resources, and thereby contribute to global food security and rural development.

International organizations are also being invited to contribute to the state of the world's animal genetic resources preparatory process in the form of reports. The long-term aim of the process is for countries and regions to build on the analyses contained in the country reports in order to plan and implement appropriate management of their farm animal genetic resources.

The *First report on the state of the world's animal genetic resources* will contain the *report on strategic priorities for action*. The global report will be based on a synthesis of country reports, thematic studies and reports from international organizations.

Field work at country and regional levels

Countries were requested to nominate a national focal point and designate a national coordinator to facilitate the development of the country network on management of animal genetic resources and serve as official contact with the global focal point. Keeping in mind that the process involves both scientific and policy matters, the establishment of a National Consultative Committee is recommended to identify the primary areas and issues that need to be addressed in the preparation of the country report and to oversee its preparation. It is essential that the National Consultative Committee has wide and diverse representation and develops a broad network to ensure opportunities for all stakeholders to contribute to the country report.

The response of countries to the invitation of the Director General of FAO to participate in the *First report on the state of the world's animal genetic resources* and submit a country report has been very positive. During part of 2001 and 2002 FAO trained almost 400 professionals from 178 countries in the preparation of national reports. At the moment FAO has a team of 15 consultants working in 14 country groupings in all regions of the world. Most countries have undertaken the organization of national stakeholder workshops to elaborate their animal

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genetic resources policies leading to the country reports. Table 1 shows the regional distribution of country reports submitted to FAO.

Table 1. Draft, final and expected number of country reports submitted to FAO (15.02.2005)

Country reports	Africa	Asia - Pac	Europe	LatAmCar	Near East	NAmerica	Non FAO	
Drafts	6	5	3	6	3	0	1	24
Finals	38	26	35	16	10	2	2	129
Expected	3	2	2	10	0	0	0	17
Total nr reports	47	33	40	32	13	2	3	170
Total nr countries	48	39	44	33	21	2	3	190
Expected result (%)	97.92	84.62	90.91	96.97	61.90	100.00	100.00	

FAO has organized 14 sub-regional workshops to discuss draft country reports and regional priorities for action. This has promoted regional cooperation since it is a way for countries that may be experiencing delays, to catch-up with those in a more advanced state of country report preparation, and learn from their experiences. These sessions were coordinated by the regional facilitators acting as FAO consultants.

FAO has implemented technical and financial support to 115 countries with contributions from the Governments of The Netherlands and Finland, and from the Nordic Gene Bank. FAO thanks especially the collaboration of the World Association for Animal Production – WAAP, in the framework of an agreement to provide technical and operational support for the state of the world reporting process, including training and country follow-up. FAO considers this cooperation a prime example of the effective collaboration between with an international non-governmental organization.

Finalization of the First report on the state of the world's animal genetic resources

2005

FAO will convene regional consultations using as a basis for discussion the first draft of the *Report on Strategic Priorities for Action*, to review and determine regional priorities, identify funding options and expose gaps where international assistance is required. Such consultations will depend to a large extent on the availability of extra-budgetary resources.

FAO will prepare a draft of the first *Report on the State of the World's Animal Genetic Resources*. The results of the regional consultations, the available Country Reports, reports from international organizations and thematic studies will provide the basis for preparing the first draft of the first *Report* by the end of 2005.

2006

Review of the first draft of the first *Report on the State of the World's Animal Genetic Resources* will be undertaken by governments and stakeholders in the first half of 2006. A second Global Workshop for National Coordinators and a stakeholders meeting will be convened to undertake a comprehensive technical review of the draft early in 2006. The Working Group will meet in 2006 in order to review the first draft of the first *Report on the State of the World's Animal Genetic Resources*, evaluate operation of the follow-up mechanism and prepare a draft agenda for an *intergovernmental technical conference on animal genetic resources* to be held in 2007. The Commission, at its Eleventh Regular Session in 2006, will review the first draft of the first *Report on the State of the World's*

Animal Genetic Resources; evaluate the follow-up mechanism and endorse an agenda for the first intergovernmental technical conference on animal genetic resources.

Recommendations of the Commission on Genetic Resources for Food and Agriculture

The Commission made a series of recommendations to FAO (Table 2) that are based on three main elements:

- Completion of the state of the world's animal genetic resources process;
- Establishment of a *follow-up mechanism* with the following objectives:
 - mobilization of financial resources;
 - providing support in project design, development and submission to relevant funding agencies;
 - raising global awareness of animal genetic resources roles and values and their contribution to food and agriculture; and
- Continue development of the global strategy for the management of farm animal genetic resources.

Table 2. Summary of recommendations of the Tenth Regular Session of the Commission on Genetic Resources for Food and Agriculture (8 -12.11.2004)

Task	Overall activity
Assist countries at local and national levels, strengthen National Focal Points, implement concrete actions in countries, involve policy-makers	Regional networking
Establish and promote sustainable Regional Focal Points, support the informal network of regional facilitators	Regional networking
Facilitate regional training in conservation and sustainable utilization of animal genetic resources	Regional networking
Conduct regional consultations to discuss and endorse regional priorities for action	Regional and national policy level
Establishment of a follow-up mechanism with a national and a regional focus	Planning the follow-up mechanism
Develop and present detailed operational plan for state of the world report	Planning the state of the world
Writing of the state of the world report as platform for policy discussion and public awareness	Draft of the state of the world report
Further development of the report on strategic priorities for action	Draft of the report on strategic priorities for action
Development of decision-support tools for breeding programmes	Animal breeding plans
Development of DAD-IS	Data base and information
Prepare a proposal for monitoring system	Conceptual development
Develop conceptual approach to conservation	International seminars
Develop plan for international technical conference	Planning for 2007
Funding for follow-up mechanism	Fund raising
Funding for international technical conference in 2007	Fund raising

Special studies

The following thematic studies are being conducted for inclusion in the state of the world report:

- Valuation of animal genetic resources
- Community-based management of local animal genetic resources
- Gene flow of major domestic animal species among countries and regions
- Options for the conservation of threatened farm animal populations
- Legal issues in management of animal genetic resources
- Biotechnology and animal genetic resources
- Measurement of domestic animal diversity (MoDAD)
- Animal genetic resources and environment
- Impact of emergencies and interventions on animal genetic resources

Regional priorities identified by countries

The following is a list of regional priorities identified in regional workshops:

- Institutional development and capacity building for the management of animal genetic resources
- Characterization and valuation of animal genetic resources
- Sustainable use and improvement of animal genetic resources
- Mainstreaming animal genetic resources into national policies
- Development of national and multi-lateral legislation regarding animal genetic resources
- Conservation programmes, both in-situ (breeding schemes) and ex-situ (cryo-conservation)
- Use of traditional knowledge in the management of animal genetic resources
- Cooperation in research and biotechnology aiming at reducing gaps between developing and developed countries
- Monitoring animal genetic resources and developing emergency response mechanisms
- Enhancement of public awareness of the value and utilization of animal genetic resources

REFERENCE LIST

All cited bibliography and related publications can be found in www.fao.org/DAD-IS.
All documentation pertaining to the Commission on Genetic Resources for Food and Agriculture and the Intergovernmental Working Group on Animal Genetic Resources can be found in www.fao.org/ag/cgrfa.