

# International Agreements Relevant to the Management of Farm Animal Genetic Resources



**D**omestication of animals has made it possible for humans to survive in a wide range of environments for more than 12,000 years. Domestic animals contribute to support humankind in many ways providing meat, milk products, eggs, fiber, fertilizer for crops, manure for fuel and essential draught power. In addition, animal genetic resources reduce farmers' risk exposure, generate employment and contribute to rural development. In the course of the development of diverse human societies, livestock became a very important cultural element and is essential in maintaining many traditional lifestyles. It is estimated that directly and indirectly, domestic animals supply 30%-40% of the total value of food and agriculture production.

Farmers and breeders have been effectively using animal genetic diversity to develop breeds and varieties suitable for local environmental conditions and capable to meet different human needs. The domestication process and breeding under different environments resulted in over 6,000 identified breeds developed within about 40 animal species. The diversity of animal genetic resources available to farmers makes it possible for humans to survive in a wide range of production environments and climatic zones, from hot-humid tropics to arid deserts and mountainous regions.

Demand for livestock products in the developing world is expected to double over the next 20 years, because of population growth, urbanization and rising incomes. To meet this demand, animal agriculture is intensifying and relies increasingly on a few breeds that can produce high yields. While the contribution of livestock to food security and rural development is significantly increasing, animal genetic diversity is eroding at a rapid rate as a result of human population and development pressures and the rapid transformation of traditional agricultural systems. However, traditional systems still account for 75% of production in the developing world.

Loss of animal genetic resources has been greatest in developed countries, where there has been a tendency to concentrate on a few high-output breeds. This has had the unfortunate consequence of completely displacing locally-adapted breeds. Genetically-uniform breeds are highly productive in high-input, high-output production strategies in countries with favorable climates, and when high levels of inputs can be maintained. Animal genetic resources are also eroding in developing countries where traditional agricultural systems are being rapidly transformed. This transformation often



includes the indiscriminate use of exotic animal genetic resources, which is now the primary force contributing to the loss of livestock breeds in developing countries. The latest information available from the World Watch List for Domestic Animal Diversity published by FAO, indicates that 32% of the world's domestic animal breeds are at the risk of extinction.

Sustainable intensification of livestock systems requires wise utilization of available inputs including choice of genetic material. This is necessary throughout the broad range of production environments. Especially in the low-input to medium-input production environments that are more common in the developing world, the sustainable use and development of animal genetic resources needs to be closely monitored.

Conservation of animal genetic resources is therefore essential. To enable farmers to respond to changing environmental conditions and consumer demands in the best interest of societies, they need to ensure that farmers and breeders have access to the widest possible range of animal genetic resources so that they can effectively react to change.

International awareness of the roles and values of animal genetic resources, and concern for their rapid loss, must be translated into effective action at the local, national, regional and global levels. Management activities in the next few decades will, to a large degree, determine the future role and contribution of animal genetic resources towards global food security. To ensure that essential animal genetic resources are conserved, used and developed, systematic and effective planning is required, as is increased capacity building; especially in developing countries where most of the world's animal genetic resources are found.



New technologies - such as information technologies, powerful tools for statistical analysis, and emerging biotechnological tools - will increase the ease and speed of further development of animal genetic resources. These technologies will not replace, but will complement traditional approaches to genetic improvement. The challenge will be to ensure that the technologies employed to intensify food and agriculture production and productivity are appropriate to the particular production system. To conserve breeds that are at high risk of loss, and to develop adapted genetic resources more sustainable and rapidly respond to the food and agriculture imperatives of the twenty-first century, immediate national and international action is required. The response to the global loss and decline of domestic animal genetic resources, and to the lack of breed improvement activities for most of these resources, must be comprehensive and integrated.

## **The Convention on Biological Diversity and Farm Animal Genetic Resources**

International awareness of the essential role of animal genetic resources in food and agriculture is gradually increasing. Agricultural biological diversity has been discussed by the Conference of the Parties to the Convention on Biological Diversity (CBD). The major discussion on agricultural biodiversity took place at the Third Conference of the Parties in Buenos Aires, in 1996, whereby Decision III/11 Parties decided to develop a program of work on agricultural biological diversity. Moreover, Parties strongly endorsed the further development of the Food and Agriculture Organization (FAO) Global Strategy for the Management of Farm Animal Genetic Resources and supported development of inventories to better understand the status of farm animal genetic resources and measures necessary for their conservation and sustainable utilization. In 1996, the World Food Summit recognized the contribution of animal genetic resources to food security, poverty alleviation and rural development.

While developing Agenda 21, the Commission on Sustainable Development strongly emphasized the importance of promoting sustainable agriculture and rural development (SARD), and underlined the essential need to ensure the conservation and sustainable use of genetic resources in achieving sustainable agriculture. At its Eight Session, in 2000, the Commission on Sustainable Development adopted a decision on sustainable agriculture and rural development, which, *inter alia* urges Governments to "implement and actively contribute to the further development of the Global Strategy for the Management of Farm Animal Genetic Resources". Sustainable agriculture has also been an important agenda item at the World Summit on Sustainable Development (Rio+10) in 2002.

## **The Global Strategy for the Management of Farm Animal Genetic Resources**

In its leading efforts to sustainably use, develop and conserve animal genetic resources, FAO has been engaged in the preparation of the Global Strategy for the Management of Farm Animal Genetic Resources since 1993. The Global Strategy is intended to serve as a strategic framework to guide international efforts in the animal genetic resources sector.

**The Global Strategy is necessary to enhance awareness of the multiple roles and values of animal genetic resources.**

It provides a framework for establishing national, regional and global policies, strategies and actions, and can serve to facilitate and coordinate the activities of many independent organizations that have an interest in animal genetic resources within the broader context of sustainable agricultural and rural development.

**The Global Strategy is necessary to promote the establishment of cost-effective approaches to conserving animal genetic resources, which might not be of interest to farmers at present. The large number of currently-threatened animal genetic resources requires a global strategy for their conservation. The magnitude of this crisis cannot be solved by one or a few nations acting independently.**

The most important role of the Global Strategy is to assist countries in developing their capacity to manage their animal genetic resources for food and agriculture. In this respect, countries need to plan, design and implement sound livestock production systems properly that are sustainable and cost-effective over time.



**The Global Strategy provides the necessary forum and focal point to discuss and debate policies and programs and provides the mechanism for global reporting on the state of animal genetic resources.**

This focal point is necessary to coordinate the many activities required to manage animal genetic resources, and to mobilize financial and other resources that are necessary to build capacity in livestock management in developing countries.

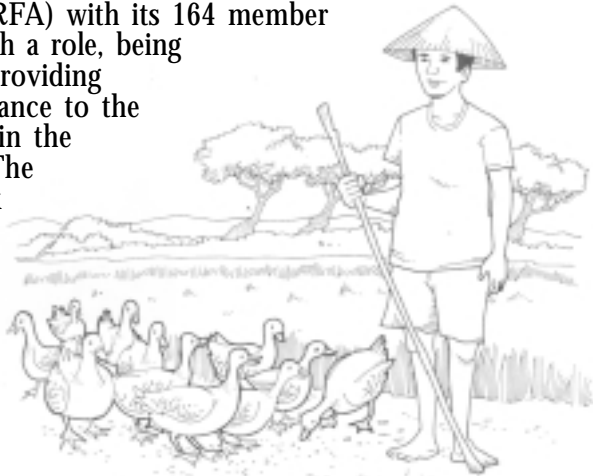
**The Global Strategy ensures that the required range of animal genetic resources is improved and maintained.**

This will ensure that animal genetic resources will continue to contribute to the further development of new foods and food products, new medicines and manufactured goods, and other important goods and services. Conservation of these resources ensures continued contribution to human development and well-being.

The Global Strategy has been designed to provide a comprehensive framework for the management of farm animal genetic resources. It consists of four inter-related components, each of them composed of several elements. The major components are:

- an **Intergovernmental Mechanism** that ensures direct government involvement and continuity of policy advice and support;
- a **Planning and Implementation Infrastructure**, providing the enabling framework for country action at regional and global support;
- a **Technical Program of Work**, aimed at supporting the effective management of animal genetic resources at country level; and
- a **Reporting and Evaluation Component**, to provide the critical data and information required for guidance, cost-effective planning and action, and progress evaluation in implementation of the Global Strategy.

The first component, the Intergovernmental Mechanism, is essential to ensure governmental and stakeholder involvement in the further development, and the implementation and monitoring of the Global Strategy. The Commission on Genetic Resources for Food and Agriculture (CGRFA) with its 164 member countries has such a role, being responsible for providing government guidance to the FAO Secretariat in the area of AnGR. The preparatory work and the conduct of the Commission's activities are funded from Regular Program budget sources.



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.
- **Regional Focal Points** facilitate regional communications and provide technical assistance and leadership.
- **National Focal Points** lead, facilitate and co-ordinate country activities and assist with the development and implementation of country policy, and inter-face with the range of country stakeholders, including the focus for biological diversity, and with the Regional Focal Point and the Global Focal Point.
- The **Donor and Stakeholder Involvement Mechanism** is meant to mobilize the range of stakeholders, providing broad-based support for the Global Strategy. The Global Focal Point seeks to ensure stakeholder involvement in all major aspects of the Global Strategy, using a variety of communication means. The Stakeholder mechanism provides additional opportunity for non-governmental contribution.
- The **Domestic Animal Diversity Information System (DAD-IS)** (<http://www.fao.org/dad-is/>) functions as the Clearing House Mechanism for the Global Strategy. It is a widely available and easily accessible global data and information system. Development and use of such global facility makes it possible to effectively share data and information among countries.

A Technical Program of Work covers several elements: National Management Plans for Animal Genetic Resources, Sustainable Intensification, Characterization, Conservation, Communication and Emergency Plans and Response. To support the implementation of the Technical Program of Work at the country level, FAO has developed a series of guidelines, which provide an effective means to identify various technical issues and offer options for their solutions. Beyond Primary Guidelines, focused on the development of National Farm Animal Genetic Resources Management Plans, there are

several Secondary Guidelines, addressing various aspects of AnGR management, like measurement of domestic animal diversity (MoDAD), sustainable intensification of AnGR, including animal recording and improvement in low- and medium-input production systems, breeding strategies development and management of small populations at risk.

The final component provides for reporting on the status of animal genetic resources as well as monitoring and evaluation of progress in the implementation of the Global Strategy. The most important element here is the First Report on the World's Animal Genetic Resources of which the findings will guide the further development of the Global Strategy and the Follow-up Actions.

There are also two cross-cutting areas which contribute to implementation of all four components of the Global Strategy, namely **Capacity-Building** and **Technical Assistance**.



## Development of the Global Strategy and Establishment of the Intergovernmental Mechanism

In terms of the future development of the Global Strategy, FAO continues to develop approaches, procedures and tools to further assist countries on economic valuation and genetic development of locally adapted genetic resources. There is also a need to investigate, in partnership with donor and recipient countries, guidelines to plan best livestock programs; identify options for establishing a country-driven early warning and emergency response mechanism for the AnGR most at risk; identify ways to enhance AnGR characterization studies in the light of new and emerging technologies; continue to enhance technical support to countries and regions; continue to provide adequate support to maintain and further develop DAD-IS; coordinate the preparation of an assessment of current rapid loss of AnGR

on food security, rural development and sustainable livelihoods; consider convening a panel of biotechnology experts in animal sciences to assess the potential use of existing and emerging technologies and methodologies for the cost-effective conservation of AnGR.



At its 9th regular session CGRFA (held over 14-18 October 2002), the member countries expressed concern about the erosion of animal genetic resources and urged for urgent action, including training, technical support and research, to assist developing countries and countries with economies in transition to conserve their animal genetic resources, and better use these resources to enhance agricultural production and productivity. The CGRFA accepted the process for preparing the first Report on the State of the World's Animal Genetic Resources, on the basis of Country Reports, which should be used to develop the report on Strategic Priorities for Action. The Commission emphasized the need to complete the first Report on the State of the World's Animal Genetic Resources by 2006. The countries stressed the importance of a regional focus, through networking and training, and agreed that regional efforts should continue where required, using existing structures. They further stressed the need to continue to involve relevant international organizations and non-government organizations. The possibility of completing the process for the development of the first Report on the State of the World's Animal Genetic Resources at a first international technical conference on animal genetic resources was considered. Such a conference could provide a framework for advancing the conservation and sustainable use of animal genetic resources for food and agriculture. Pros and cons were expressed on the possible need for a Treaty on Animal Genetic Resources for Food and Agriculture.

## The State of the World's Animal Genetic Resources Process

Preparation of the first country-driven Report on the State of the World's Animal Genetic Resources has been initiated as an essential element of the Global Strategy. The first critical step in the process for developing the report will be the preparation of Country Reports. The objective of the country and global assessments is to provide a comprehensive analysis of the status and trends of the world's animal biodiversity and of their underlying causes, as well as of local knowledge and its management.

The Country Report for the SoW-AnGR will be a strategic policy document covering the three strategic questions:

- Where are we?
- Where do we need to be?
- How do we get to where we need to be?

The task is to go beyond description of the resources: to analyze and report on the state of these resources and capacities to manage them, to draw lessons from past experiences and identify problems and priorities. It also provides an important opportunity to look ahead and identify potential and likely needs, demands, trends and national capacity building requirements in all aspects of the management of AnGR. While it is essential to understand the state of the resources and management capacities, Country Reports must also assess the underlying policies that affect both the resources and the existing capacity to manage them. The strategic priority actions report and the global report will be based on country reports, thematic studies and reports from international non-governmental organizations.

**Country Reports provide an assessment in three major areas:**

- a) the **State of Diversity**: an assessment of the state of conservation, erosion and utilization of farm animal agricultural biodiversity, and an analysis of the underlying processes;
- b) the **State of Country Capacity** to manage animal genetic resources including existing AnGR policies, management plans, institutional infrastructures, human resources and equipment; and
- c) the **State of the Art** and the available methodologies and technologies to assist farmers, breeders, scientists to better understand, use, develop and conserve AnGR, and thereby contribute to global food security and rural development.



In each country, the preparation of the Country Report will also facilitate the development of a comprehensive national databank for use in planning and implementing follow up action, and in training and further capacity building.

Countries were asked to nominate a National Focal Point designating their National Coordinator. The National Coordinator coordinates the development of the country network and overall management of AnGR and is the official contact for communication with the Global Focal Point. Keeping in mind that the process involves both scientific and policy matters, the establishment of the National Consultative committee is recommended to identify the primary areas and issues that need to be addressed in the preparation of the Country Report, frame out the report and oversee its preparation. It is essential that the National Consultative Committee has diverse representation, and also develops a broader network to ensure opportunities for the full range of stakeholders to contribute to the Country Report.

International Organizations are also being invited to contribute to the SoW-AnGR preparatory process in the form of reports.

The long-term aim of the SoW-AnGR process is for countries and regions to build on the analyses contained in the Country Reports to plan and implement appropriate AnGR management.

### References:

FAO. 1999. The Global Strategy for the Management of Farm Animal Genetic Resources. Executive Brief. FAO, Rome, Italy.

FAO/UNEP. 2000. World Watch List for Domestic Animal Diversity. Third ed. (Ed. Beate D. Scherf). FAO, Rome.

FAO. Domestic Animal Diversity Information System - DAD-IS 2.0 at <http://www.fao.org/dad-is/>

Contributed by:  
**Beate Scherf**  
(Email: [Beate.Scherf@fao.org](mailto:Beate.Scherf@fao.org))

Sourcebook produced by CIP-UPWARD,  
in partnership with GTZ GmbH, IDRC of  
Canada, IPGRI and SEARICE.