The Global Strategy for the Management of Farm Animal Genetic Resources with its first Report on the State of the World’s Animal Genetic Resources

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Animal Production & Health Division
Food and Agriculture Organization of the United Nations
The Global Strategy for the Management of Farm Animal Genetic Resources

The Commission on Genetic Resources for Food and Agriculture

The first Report on the State of the World’s Animal Genetic Resources

The Report on Strategic Priorities for Action

The first International Technical Conference Animal Genetic Resources
People and animals: Africa
The Global Strategy for the Management of Farm Animal Genetic Resources

- strategic framework to guide international efforts in the animal genetic resources sector
- assist countries in developing their capacity to manage their animal genetic resources
Successful management is technically & operationally challenging

Management of AnGR

Understanding + Using + Developing + Maintaining + Accessing

Utilization

Conservation
Global Strategy for the Management of Farm Animal Genetic Resources

- Inter-governmental Mechanism
- Country-based Planning and Implementation Infrastructure
- Technical Programme of Work
- Reporting and Evaluation

Follow-up Mechanism

Strategic Priorities for Action

Regional Consultations

draft Report on Strategic Priorities for Action

Technical Conference

First Report on the State of the World’s Animal Genetic Resources

Country reports
The Commission on Genetic Resources for Food and Agriculture

The **CGRFA** develops *international agreements, policies, and priorities* for Genetic Resources for Food and Agriculture and related technologies and monitors their implementation.

Enlarged in 1995 to include all GRFA: Plant, Animal, Fisheries and Forestry. **Intergovernmental Technical Working Groups on AnGR** and **PGR** provide technical support.

**National Governments**

Develop and implement policies and strategies for sustainable use, development and conservation of GRFA
Intergovernmental Technical Working Group on AnGR (ITWG-AnGR)

- makes recommendations to the Commission
- reports to the Commission on its activities
- considers progress made in implementing the programme of work in AnGR and the Global Strategy for the Management of Farm Animal Genetic Resources
- reviews issues on agrobiodiversity in AnGR
COP decisions with regard to AnGR

Decision III/11
- appreciates the importance of the country-based Global Strategy for the Management of Farm Animal Genetic Resources under the FAO of the UN and strongly supports its further development.

Decision IV/6
- welcomes the establishment by the CGRFA, of an ITWG-AnGR for F&A.
COP decisions

Decision VI/5

- welcomes the process initiated by the FAO for the preparation of the first Report on the State of World's Animal Genetic Resources

- welcomes that the FAO process will contribute to conservation, sustainable use, access and benefit sharing of animal genetic resources for food and agriculture

- encourages Parties to participate in the development of the first Report, in particular through the preparation of country reports
COP decisions

Decision VI/5

- invites Parties, other Governments, the financial mechanism and funding organizations to provide adequate and timely support to enable countries to participate fully in the preparatory process, and implement follow-up actions identified through the process.
People and animals: North America
### Population genetics in GRFA

#### AnGR
- Genetic variation lies between individuals within breeds and between breeds
- Inbreeding and random genetic drift are common in small populations. Maintaining sufficient population size is crucial.
- Breeds are principal conservation unit
- Difficult ex-situ conservation
- Few wild relatives left
- Centers of domestication have no important role in present world animal production

#### PGR
- Uniformity within varieties/ lines
- Relatively easy *ex-situ* conservation
- CGIAR and other collections
- Many wild relatives left
- Centers of origins still important
### Conservation strategies for AnGR and PGR

<table>
<thead>
<tr>
<th>AnGR</th>
<th>PGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Little or no information on current <em>ex-situ</em> AnGR conservation</td>
<td>- International, regional, national <em>ex-situ</em> collections</td>
</tr>
<tr>
<td>- Financial problems [costs of collecting, processing, storing, renewal]</td>
<td>- Financial resources (Global Crop Diversity Trust)</td>
</tr>
<tr>
<td>- Technical problem [material, cryopreservation]</td>
<td>- Technology manageable</td>
</tr>
<tr>
<td>- Strategies missing [target populations, breed back-up, combining <em>in-situ</em> with <em>ex-situ</em>]</td>
<td>- Maintenance (technical and Global Crop Diversity Trust)</td>
</tr>
<tr>
<td>- Legal instrument missing</td>
<td>- Legal instrument in place (IT-PGR)</td>
</tr>
</tbody>
</table>

Mainly *in-situ* use and development of AnGR by local communities and farmers/livestock keepers
Different strategies for plant and animal genetic resources for food and agriculture developed by the CGRFA

- Global Strategy for the Management of Farm Animal Genetic Resources
- Strategic Priorities for Action Report (draft 2005)
- Global Plan of Action for Plant Genetic Resources for Food and Agriculture (1996)
- GPA Facilitating and Monitoring Mechanism
- International Treaty for Plant Genetic Resources for Food and Agriculture (entered into force 2004)
People and animals: Latin America
The first Report on the State of the World’s Animal Genetic Resources
State of the World’s-Animal Genetic Resources (SoW-AnGR)

- The **CGRFA** recommended that FAO should coordinate the first (country-driven) Report on the State of the World’s Animal Genetic Resources.
- **188 countries** were invited to participate in the SoW-AnGR in 2001.
- **Donor support:** Governments of Finland, Germany, The Netherlands, Norway; Nordic Gene Bank-AnGR; FAO-Netherlands Partnership Programme; GTZ-Germany.
From assessment to action

Countries assess animal genetic resources

Countries identify needs

Countries implement action

- National and regional political commitment to support sustainable livestock production
- **donor commitment** in long-term development projects
**Progress on the SoW-AnGR**

- **156 countries** received technical and/or financial **support** from FAO in partnership with the World Association for Animal Production (WAAP)

- **396 persons** from 178 countries **trained** in 15 sub-regional workshops in country reporting

- 20 sub-regional **follow-up workshops** were organized involving more than 150 countries for identification of national and regional priorities

- **170 Country Reports** **officially submitted** to FAO by January 2006
## Country Report submission to FAO

<table>
<thead>
<tr>
<th>Region or sub-region</th>
<th>COUNTRY REPORTS</th>
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<tr>
<td></td>
<td>Final</td>
<td>Draft</td>
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<tr>
<td>Africa</td>
<td>44</td>
<td>3</td>
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<tr>
<td>Asia and Pacific</td>
<td>28</td>
<td>5</td>
<td>33</td>
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<td>Europe</td>
<td>36</td>
<td>3</td>
<td>39</td>
<td></td>
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<tr>
<td>Latin America and Caribbean</td>
<td>20</td>
<td>10</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Near East</td>
<td>11</td>
<td>5</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>North America</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Non-Member Countries</td>
<td>2</td>
<td>1</td>
<td>3</td>
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<td><strong>Total</strong></td>
<td><strong>143</strong></td>
<td><strong>27</strong></td>
<td><strong>170</strong></td>
<td></td>
</tr>
</tbody>
</table>
Other activities in the SoW-AnGR process

- Invitation to international organizations to contribute their reports
- Finalization of 15 thematic studies, others in preparation
- Analysis of Country reports and preparation of draft Report on Strategic Priorities for Action
- Improving the information systems DAD-IS
- Updating of the global database (14000 national breed populations)
Information recorded in the Global Database for AnGR

**Mammals**

- Breed populations recorded
- Breed populations classified as at risk
- With population data
- Breed populations extinct

**Poultry**

- Breed populations recorded
- Breed populations classified as at risk
- With population data
- Breed populations extinct
Status of reporting to FAO to-date

Which populations belong to one breed?

- attempt to link populations across countries ‘transboundary breeds’
  - regional transboundary breeds
  - international transboundary breeds
- local breeds: indigenous, adapted imported, undefined breeds
- ~ 9 000 breeds of livestock worldwide
## Transboundary and local breeds

<table>
<thead>
<tr>
<th>Mammals</th>
<th>transboundary</th>
<th>local</th>
<th>Poultry</th>
<th>transboundary</th>
<th>local</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>208</td>
<td>1138</td>
<td>Chicken</td>
<td>160</td>
<td>1240</td>
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<tr>
<td>Sheep</td>
<td>232</td>
<td>1191</td>
<td>Goose</td>
<td>24</td>
<td>161</td>
</tr>
<tr>
<td>Horse</td>
<td>129</td>
<td>651</td>
<td>Duck</td>
<td>27</td>
<td>221</td>
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<tr>
<td>Goat</td>
<td>86</td>
<td>537</td>
<td>Turkey</td>
<td>26</td>
<td>79</td>
</tr>
<tr>
<td>Pig</td>
<td>62</td>
<td>778</td>
<td>Guinea fowl</td>
<td>5</td>
<td>49</td>
</tr>
<tr>
<td>Rabbit</td>
<td>59</td>
<td>184</td>
<td>Ostrich</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>Ass</td>
<td>15</td>
<td>141</td>
<td>Muscovy duck</td>
<td>1</td>
<td>23</td>
</tr>
<tr>
<td>Buffalo</td>
<td>15</td>
<td>122</td>
<td>Pigeon</td>
<td>1</td>
<td>67</td>
</tr>
<tr>
<td>Deer</td>
<td>13</td>
<td>13</td>
<td>Quail</td>
<td>1</td>
<td>49</td>
</tr>
<tr>
<td>Dromedary</td>
<td>5</td>
<td>65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bactrian Camel</td>
<td>2</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alpaca</td>
<td>2</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Llama</td>
<td>2</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guinea Pig</td>
<td>1</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yak</td>
<td></td>
<td>27</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

~ 155 transboundary breeds in >10 countries
## Local breeds by region

<table>
<thead>
<tr>
<th>Region</th>
<th>Mammalian breeds</th>
<th>Avian breeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>980</td>
<td>163</td>
</tr>
<tr>
<td>Asia</td>
<td>1489</td>
<td>392</td>
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<tr>
<td>Europe</td>
<td>2166</td>
<td>1005</td>
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<tr>
<td>Latin America and the Caribbean</td>
<td>881</td>
<td>196</td>
</tr>
<tr>
<td>Near East</td>
<td>227</td>
<td>37</td>
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<tr>
<td>North America</td>
<td>284</td>
<td>64</td>
</tr>
<tr>
<td>Southwest Pacific</td>
<td>170</td>
<td>91</td>
</tr>
<tr>
<td><strong>World</strong></td>
<td><strong>6197</strong></td>
<td><strong>1948</strong></td>
</tr>
</tbody>
</table>
Local breeds by country

Number of livestock breeds per country
(Transboundary breeds not included, mammalian and avian combined)

- 1 - 7
- 8 - 21
- 22 - 42
- 43 - 274
- >275

Data not available

Regional risk status of breeds
(Transboundary breeds not included mammalian and avian combined)

- % unknown
- % extinct
- % at risk

North America
Europe
Asia
Near East
Africa
Latin America and the Caribbean
Southwest Pacific
People and animals: Asia and Pacific
The Report on Strategic Priorities for Action
Objectives of the RSPA

- to propose policies and strategies for the conservation and sustainable utilization of AnGR at national, regional and global levels;
- to assist countries in elaborating plans or programmes of priority action for sustainable use and conservation activities at the national level;
- to propose appropriate and feasible measures to make the Global Strategy for the Management of FAnGR more effective; and
- to focus on assisting countries in strengthening national capacities for management of animal genetic resources.
Content of the RSPA as endorsed by the CGRFA

The RSPA includes

- a description of the problems, including a summary of relevant conclusions from the analysis of Country Reports;

- identification of gaps and assessment of factors limiting the optimum utilization, development and conservation of AnGR; and

- the need for follow-up action, including financial and technical assistance, policy development and awareness raising and education.
Producing the RSPA

November 2004: First draft presented to the 10th Regular Session of the CGRFA
January-May 2005: Compilation of an updated version based on 141 country reports
June–August 2005: Internal and external review
Sept-Dec 2005: Regional consultations
January-May 2006: Regional priorities and final revision
June 2006: RSPA will become part of the First Report SoW-AnGR
## Sub-regional e-mail consultations for RSPA review

<table>
<thead>
<tr>
<th>Region</th>
<th>contacted</th>
<th>subscribed</th>
<th>No contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern Europe and Caucasus</td>
<td>54</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>Europe</td>
<td>166</td>
<td>44</td>
<td>7</td>
</tr>
<tr>
<td>South Asia</td>
<td>31</td>
<td>12</td>
<td>21</td>
</tr>
<tr>
<td>Central Asia</td>
<td>19</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>West Africa</td>
<td>103</td>
<td>54</td>
<td>77</td>
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<tr>
<td>East Africa</td>
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<tr>
<td>South Africa</td>
<td>79</td>
<td>45</td>
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</tr>
<tr>
<td>South West Pacific</td>
<td>20</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>South America</td>
<td>50</td>
<td>29</td>
<td>57</td>
</tr>
<tr>
<td>Central America</td>
<td>52</td>
<td>25</td>
<td>34</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>622</strong></td>
<td><strong>267</strong></td>
<td><strong>290</strong></td>
</tr>
</tbody>
</table>
Structure of the RSPA

- 4 Main Areas for Strategic Priorities (SP)
- 23 Strategic Priorities,
  - 15 at national level, 8 at international level
  - 110 Actions (1-9 per SP)
Main areas for strategic priorities

- Improving the understanding of the status and characteristics of AnGR to enable their sustainable use, development and conservation (5 SP*)
- Enhancing the use and development of AnGR in all relevant production systems as part of efforts to achieve food security and alleviate poverty (4 SP)
- Conserving AnGR to ensure their availability for future use and development in all production systems (5 SP)
- Enhancing institutional development and capacity building to achieve the successful implementation of national programmes for AnGR (9 SP)

*SP= Strategic Priorities
People and animals: Europe
Opportunities for AnGR

- populations that retain value for current use
- sustainable animal production systems for food security
- access to wide range of AnGR necessary for producing under diverse environments
- genetic resources for cross breeding and development of new genotypes
- options to meet the demands of new markets for livestock products and services
- options for adaptation to changing environmental conditions
Implications for conservation

- strategic investments critical
- diversity in AnGR as insurance policy
- maintain sufficient genetic diversity to meet the needs of current and future utilization
- preserve cultural and historical values
- fulfil the rights of an existing genetic resource to continue to exist
People and animals: Near East
The first
International Technical Conference
Animal Genetic Resources
Decisions of the 10th session of the CGRFA

- decided that the first Report on the State of the World’s Animal Genetic Resources should be finalized at the First International Technical Conference on Animal Genetic Resources in 2007,

- agreed that a committee be set up, to plan for the Conference, and to develop an agenda, in consultation with the Inter-governmental Technical Working Group on Animal Genetic Resources.

- stressed the importance of the Conference, both to provide an excellent opportunity to reach agreement on how to best address priorities for the sustainable use, development and conservation of animal genetic resources, and to raise awareness and appreciation of the various roles and values of these essential resources.
Next steps in the preparation

**Dates**

10 October 2006  National Coordinator workshop  
11-13 Oct 2006  ITWG#4 in Rome: review of the SoW report  
Spring 2007  CGRFA # 11  
3-7 Sept 2007  International Technical Conference

**Action**

- Prepare for review by the next sessions of the ITWG-AnGR and the CGRFA
  - draft programme outline
  - set up scientific committees
- Organize awareness raising campaign
- Continue fundraising
Thank you. We look forward to seeing you at the International Technical Conference AnGR, September 2007 in Interlaken, Switzerland