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Продовольственная и
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COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Item 3.2 of the Provisional Agenda

Fifteenth Regular Session

Rome, 19 – 23 January 2015

PREPARATION OF *THE SECOND REPORT ON THE STATE OF THE WORLD'S ANIMAL GENETIC RESOURCES FOR FOOD AND AGRICULTURE*

TABLE OF CONTENTS

	Paragraphs
I. Introduction.....	1 - 2
II. Resource mobilization	3
III. Preparatory process.....	4 - 14
IV. Provisional key findings and changes since the preparation of the First Report	15
V. Proposed procedure and timeline for finalization of the Second Report	16
VI. Guidance sought.....	17

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I. INTRODUCTION

1. At its Fourteenth Regular Session in April 2013, the Commission on Genetic Resources for Food and Agriculture (Commission) requested FAO to prepare *The Second Report on the State of the World's Animal Genetic Resources for Food and Agriculture* (Second Report), focusing on changes since the preparation of the first report. It requested FAO to present a draft version of the Second Report to this session of the Commission, for its consideration and to facilitate its deliberations on the potential need to update the Global Plan of Action for Animal Genetic Resources (Global Plan of Action).¹

2. This document provides information on the progress made in the preparation of the Second Report, including the mobilization of resources, and presents a proposal for its finalization. Key findings and changes since the first report are also presented. Draft versions of Parts 1, 2, 3 and 5 of the Second Report are provided to the Commission in the three-part document *Draft Second Report on the State of the World's Animal Genetic Resources for Food and Agriculture*.² It is intended that Part 4 of the Second Report, which addresses the state of the art in the management of animal genetic resources, will be made available by 31 March 2015 as part of the complete revised draft.

II. RESOURCES MOBILIZATION

3. In response to the Commission's request,³ FAO reviewed the budget for the preparation of the Second Report and, by re-organizing and redistributing work within its Animal Genetic Resources Branch, increased the proportion covered by Regular Programme resources. The Regular Programme contribution has been increased to nearly 70 percent of the total budget of the Second Report. In addition, FAO increased its efforts to mobilize extra-budgetary resources, resulting in additional contributions to cover the position of an editor/assistant for 18 months. Extra-budgetary resources were provided by the Governments of Germany and Spain. The Government of France seconded an officer for a period of three years, starting in July 2014. The Government of Norway provided the services of an intern for six months. The work was further supported by interns from France, the Russian Federation, the United Kingdom and the United States of America.

III. PREPARATORY PROCESS

A. Reporting by countries

4. The Commission, at its last session, endorsed the draft questionnaire for collecting national data to support the preparation of the Second Report. It invited countries to provide comments on the questionnaire by 19 May 2013 and requested the Bureau of the Intergovernmental Technical Working Group on Animal Genetic Resources (Working Group) to review the comments and finalize the questionnaire.⁴

5. Comments on the draft questionnaire for the collection of country data for the Second Report were received from two regions and ten countries. The Bureau of the Working Group finalized the questionnaire in July 2013. In August 2013, FAO Member Nations, Non-Member Nations and 69 international organizations were invited, by Circular State Letter, to participate in the reporting process and to submit country reports by 31 January 2014.

6. In the autumn of 2013, National Coordinators for the Management of Animal Genetic Resources (National Coordinators) were invited to report on their countries' legal and policy frameworks affecting the management of animal genetic resources. Responses were received from 46 countries.

7. Notwithstanding the short period countries had in which to prepare their reports, 129 country reports were received (Table 1) between January and May 2014. FAO provided National Coordinators with comments on the reports received. The National Coordinators then revised the country reports

¹ CGRFA-14/13/Report, paragraph 72.

² CGRFA-15/15/Inf.17.1 (Part 1 & 2) ; CGRFA-15/15/Inf.17.2 (Part 3) ; CGRFA-15/15/Inf.17.3 (Part 5).

³ CGRFA-14/13/Report, paragraph 71.

⁴ CGRFA-14/13/Report, paragraphs 71–72.

and submitted final versions. Reporting was also facilitated by the existence of a well-developed network of stakeholders: 173 countries have National Coordinators and regional focal points or networks exist in five regions. In 78 countries, National Coordinators are supported by National Advisory Committees. In some cases, this formal structure is further supported by a network of national stakeholders or by international organizations. Support was also provided via the Domestic Animal Diversity Discussion Network (DAD-Net), with its more than 2500 members. The network provided a source of information on case studies illustrating some of the issues discussed in the Second Report (e.g. breeding programmes in low-input production systems).

8. The African Union Interafrican Bureau for Animal Resources (AU-IBAR) funded and collaborated in the organization of three regional capacity-development workshops that assisted National Coordinators in Africa to prepare their country reports.

9. Data from the country reports were loaded into a relational database, which allowed the data analysis to be undertaken in a short period of time. The database constitutes a baseline for any future State of the World reports.

10. The section of the Second Report that addresses the status and trends of animal genetic resources is based on national data entered by National Coordinators into the Domestic Animal Diversity Information System (DAD-IS).⁵

Table 1: Country reports received

Region ⁶	Countries
Africa (41)	Algeria, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Comoros, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, ⁷ Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, South Africa, Swaziland, Togo, Uganda, United Republic of Tanzania, Zambia, Zimbabwe
Asia (20)	Bangladesh, Bhutan, China, India, Indonesia, Iran (Islamic Republic of), Japan, Kazakhstan, Kyrgyzstan, Malaysia, Maldives, Mongolia, Nepal, Philippines, Republic of Korea, Sri Lanka, Tajikistan, Thailand, Timor-Leste, Viet Nam
Europe and the Caucasus (35)	Albania, Austria, Azerbaijan, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Latvia, Lithuania, Luxembourg, Montenegro, Netherlands, Norway, Poland, Portugal, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom
Latin America and the Caribbean (18)	Argentina, Barbados, Bolivia (Plurinational State of), Brazil, Chile, Costa Rica, Cuba, Dominican Republic, Ecuador, Guatemala, Jamaica, Mexico, Paraguay, Peru, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay
Near East (7)	Bahrain, Egypt, Iraq, Jordan, Kuwait, Oman, Sudan

⁵ <http://dad.fao.org/>

⁶ These regions correspond to those used in the first report on *The State of the World's Animal Genetic Resources for Food and Agriculture* rather than the usual FAO regions.

⁷ The country report was not prepared in the standardized format and thus could not be included in the analysis.

Region ⁶	Countries
North America (1)	United States of America
Southwest Pacific (7)	Cook Islands, Kiribati, New Zealand, Niue, Samoa, Solomon Islands, Tonga

11. Part IV of the country reports consisted of progress reports on the implementation of the Global Plan of Action – 2007 to 2013. In addition to the material presented in the Second Report, detailed analysis of this part of the country reports is presented in the document *Synthesis progress report on the implementation of the Global Plan of Action for Animal Genetic Resources – 2014*.⁸

B. Other sources of information

12. In February 2014, regional focal points and networks for animal genetic resources were invited to report on regional-level activities and priorities related to the implementation of the Global Plan of Action. Four responses were received.

13. In addition, FAO invited, in February 2014, 209 international organizations (including the 69 previously invited) to report on their contributions to the implementation of the Global Plan of Action. Fifteen international organizations reported on their activities (Table 2).

Table 2: International organizations that reported on their activities

ACSAD	Arab Center for the Studies of Arid Zones and Dry Lands
AU-IBAR	African Union Interafrican Bureau for Animal Resources
	Biodiversity International
CBD	Secretariat of the Convention on Biological Diversity
EAAP	European Federation of Animal Science
	Heifer International
IAEA	International Atomic Energy Agency
ICAR	International Committee for Animal Recording
ICARDA	International Center for Agriculture Research in the Dry Areas
ILRI	International Livestock Research Institute
LPP	League for Pastoral Peoples and Endogenous Livestock Development
NordGen	Nordic Genetic Resource Centre
RBI	Rare Breeds International
SAVE Foundation	Safeguard for Agricultural Varieties in Europe
WIPO	World Intellectual Property Organization

C. Thematic studies

14. Two thematic studies were prepared: one on the provision of ecosystem services by livestock species and breeds and one on the patent landscape for animal genetic resources.⁹ The latter was provided by the World Intellectual Property Organization.¹⁰

⁸ CGRFA-15/15/Inf.19

⁹ <http://www.fao.org/3/a-at598e.pdf>

¹⁰ http://www.wipo.int/edocs/pubdocs/en/wipo_pub_947_3.pdf

IV. PROVISIONAL KEY FINDINGS AND CHANGES SINCE THE PREPARATION OF THE FIRST REPORT

15. Provisional key findings and changes since the preparation of the first report are presented below:

- **Livestock diversity and the management of animal genetic resources is high on the agenda of policy-makers** – 129 countries participated in the State of the World reporting process; 173 countries have nominated National Coordinators; 112 countries have completed, are preparing or plan to prepare national strategies and action plans to implement the Global Plan of Action at national level. Many countries report that they have developed legal instruments or policies targeting better management of animal genetic resources in recent years. Moreover, since 2007, the importance of genetic resources for food and agriculture, including animal genetic resources, has been highlighted in several major international initiatives and agreements.
- **Growth in demand for animal-source food is creating major challenges for the sustainable use of animal genetic resources.** South Asia and Africa are the regions that are projected to be the main centres of growth in meat and milk consumption. At the same time, these are very resource-constrained regions, with many small-scale livestock keepers and pastoralists – presenting a major challenge for policy-makers and development agencies.
- **Livestock diversity is needed in order to adapt production systems to future changes and to serve as a source of resilience in the face of greater climatic variability.** Synergies in efforts to promote improved animal genetic resources management and livelihood and environmental objectives need to be exploited.
- **The proportion of livestock breeds classified at risk has increased from 15 percent to 17 percent since 2005.** However, for 58 percent of breeds, no population size has been reported to FAO and thus the number of breeds at risk is likely to be underestimated. Characterization of livestock breeds and monitoring of their populations is a prerequisite for effective management decisions at national level.
- **Threats to animal genetic resources have not been adequately assessed.** Indiscriminate cross-breeding, weaknesses in animal genetic resources management programmes, policies and institutions, degradation of natural resources (or a lack of access to them), climate change and disease epidemics are reported to be major threats, particularly in developing countries.
- **International flows of animal genetic resources have continued to expand over recent years, possibly at an increasing rate.** These flows are still dominated by North–North and North–South exchanges. Imports of high-output international transboundary breeds from the North into Southern countries have increased. There are also significant South–South gene flows, often between a small number of neighbouring countries. Northern countries do not seem to be significantly increasing their imports of genetic resources from the South. Many countries are concerned about the effects of international gene flows on the diversity of their livestock populations.
- **While various livestock functions are gradually being replaced by alternative sources (e.g. a decline in the use of animal power), use of livestock remains very diverse.** Appropriate management strategies require better knowledge of the roles, uses and values of animal genetic resources, particularly in the livelihoods of poor people, and better knowledge on the impacts of livestock on the functioning of ecosystems.
- **Elements of breeding programmes have been increasingly implemented by countries since 2005.** Non-OECD countries need to increase their efforts in performance recording and genetic evaluation. Use of reproductive and molecular biotechnologies has increased since 2005. Inclusion of disease resistance or tolerance in breeding goals can be a valuable element of disease-control strategies, but is far from having reached its full potential. Further research to investigate anecdotal observations is required.
- ***In vitro* gene banks have been established by 64 countries and a further 41 countries are planning to do so.** However, many of these gene banks are in the early stages of development

and the collections often include many gaps in terms of their coverage of relevant livestock populations and species. *In situ* conservation, enabling the continuous adaption of livestock populations to their production environments, is being pursued in many ways. Increasingly, countries report the development of niche or speciality products as a means of ensuring the profitability of potentially threatened breeds.

V. PROPOSED PROCEDURE AND TIMELINE FOR FINALIZATION OF THE SECOND REPORT

16. The Secretariat intends to make a revised and complete draft of the Second Report available by 31 March 2015 at http://www.fao.org/Ag/AGInfo/programmes/en/genetics/Second_state.html for comments and suggested changes by members and observers (by 31 May 2015 via e-mail to SoWAnGR2@fao.org). The Secretariat aims to finalize and publish the Second Report, taking into account all comments received, before the end of 2015, subject to the availability of extra-budgetary funds.

VI. GUIDANCE SOUGHT

17. The Commission may wish to:

- (i) Review the draft Second Report;
- (ii) Invite comments on the draft Second Report from members and observers;
- (iii) Request the Secretariat to finalize the Second Report, taking into account comments received;
- (iv) Request the Secretariat to publish the Second Report in all languages of FAO, subject to the availability of the necessary funds;
- (v) Request the Secretariat to prepare and publish an in-brief version of the Second Report in all FAO languages; and
- (vi) Call upon governments and donors to make available the financial resources necessary to translate, publish, print and distribute the Second Report and its in-brief version.