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Item 6 of the Provisional Agenda

COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

**INTERGOVERNMENTAL TECHNICAL WORKING GROUP ON ANIMAL GENETIC
RESOURCES FOR FOOD AND AGRICULTURE**

Fourth Session

Rome, 13 – 15 December 2006

**PROGRESS IN THE IMPLEMENTATION AND THE FURTHER DEVELOPMENT OF
THE GLOBAL STRATEGY FOR THE MANAGEMENT OF FARM ANIMAL GENETIC
RESOURCES**

REPORT ON ACTIVITIES

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PROGRESS IN THE IMPLEMENTATION AND THE FURTHER DEVELOPMENT OF THE GLOBAL STRATEGY FOR THE MANAGEMENT OF FARM ANIMAL GENETIC RESOURCES

I Introduction

1. The Food and Agriculture Organization of the United Nations (FAO) initiated the development of the Global Strategy for the Management of Farm Animal Genetic Resources (Global Strategy) in 1993. The Global Strategy consists of four main components: an Intergovernmental Mechanism; Country-based Planning and Implementation Infrastructure; a Technical Programme of Work; and a Reporting and Evaluation component and a number of interrelated cross-cutting elements. These provide a strategic framework to advance work on animal genetic resources.

2. During its Tenth Session, the Commission on Genetic Resources for Food and Agriculture (Commission), reaffirmed the need to enhance progress in the implementation of the Global Strategy, noting that the erosion of animal genetic resources was continuing at an unacceptable rate. The current document reports on progress made in the implementation and further development of the Global Strategy since the 10th Regular Session of the Commission. Progress is reported on the components and elements of the Global Strategy. Significant progress was made in several key areas. However, due to a lack of financial resources, some areas for development recommended by the Commission were not initiated or completed.

II Progress in the implementation of various components of the Global Strategy

A. THE INTERGOVERNMENTAL MECHANISM

3. Since the 3rd meeting of the Working Group, the main activity of the Global Focal Point in relation to the Intergovernmental Mechanism was the preparation for the Tenth Regular Session of the Commission. A number of documents were prepared to assist the Commission to consider future work on animal genetic resources.

4. The Commission underlined the need to better inform and involve policy-makers in order to enhance political commitment for the implementation of priorities identified in Country Reports for Animal Genetic Resources. FAO presented a progress report on the development of the Global Strategy to two meetings of donor and implementing agencies related to Livestock Production and Animal Health¹ (France, March 2004, and United Kingdom, May 2006). A side event, jointly organized by FAO and the Government of Switzerland, was held during the first meeting of the Governing Body of the International Treaty on Plant Genetic Resources in Spain (June 2006).

5. The Global Focal Point continues to inform the Convention on Biological Diversity (CBD) about progress in the implementation of the Global Strategy. A side event, jointly organized by FAO and the Government of Switzerland, was held during COP8 in Brazil. The further development of the Global Strategy will be informed by and contribute to the programme

¹ <http://iri.virtualcentre.org/>

of work on agricultural biodiversity of the CBD. The COP8 of the CBD, in decision VIII/23 welcomed the progress on the State of the World process. The Parties welcomed the timely inputs of the *State of the World's Animal Genetic Resources* for the review of the Programme of Work on Agricultural Biodiversity and as a contribution to the Cross-cutting Initiative on Biodiversity for Food and Nutrition.

B. COUNTRY-BASED PLANNING AND IMPLEMENTATION INFRASTRUCTURE

National Focal Points

6. During its Tenth Session, the Commission stressed the need to strengthen National Focal Points for Animal Genetic Resources, as a crucial structure to further implement the Global Strategy. As of September 2006, 144 countries have officially nominated their National Coordinators for animal genetic resources. However, a number of National Coordinators reported that their Focal Point was not fully operational, as available financial resources are inadequate to enable them to conduct all necessary activities. Several countries reported that advisory committees, often established as part of the Country Report process, continue to make significant contributions.

Regional Focal Points and Networking

7. The Commission indicated the importance of improving networks for animal genetic resources and further encouraged establishment of Regional Focal Points, where appropriate.

8. The European Regional Focal Point (ERFP) is fully operational since 2000. The ERFP provides important opportunities for National Coordinators to share experiences, to raise awareness about the roles and values of animal genetic resources, to consider policies and to develop proposals for European Community funded projects that focus on characterization, documentation, conservation and sustainable use of animal genetic resources. A key feature of its operation is the convening of a National Coordinators' workshop, which occurs in association with the annual meeting of the European Association for Animal Production², and the publication of an annual report on country activities³. In January 2006, the ERFP with the support of the European Commission (EC), organized a two-day workshop⁴ to exchange views on legal and strategic aspects related to animal genetic resources, and to further harmonize animal genetic resources policies with core livestock policies.

9. Although the Commission on Genetic Resources for Food and Agriculture had stressed the importance of Regional Focal Points, mobilizing financial resources to enable their establishment remains difficult. However, some progress has been made. In September 2005, FAO conducted a workshop for National Coordinators at Arusha, Tanzania titled "FAO Workshop for National Coordinators of Eastern and Southern African countries: Capacity building for functional Regional Focal Points for Animal Genetic Resources", to examine the feasibility of establishing a regional focal point for animal genetic resources and to discuss regional priorities related to the *State of the World's Animal Genetic Resources* process. The workshop involved

² 2005: Algeria, Austria, Belgium, Brazil, Czech Republic, Denmark, Ethiopia, Estonia, Georgia, Germany, Greece, Hungary, India, Iran., Italy, Kenya, Laos, Lithuania, Norway, Poland, Republic of Korea Spain, Slovenia, Sweden, Thailand, Togo, Turkey, United Kingdom, Vietnam, Zimbabwe.

2006: Albania, Belarus, Belgium, Cyprus, Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, The former Yugoslav Republic of Macedonia, Norway, Poland, Romania, Serbia, Slovakia, Slovenia, South Africa, Spain, Switzerland, Turkey, United Kingdom

³ www.rfp-europe.org

⁴ Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom

participants from 21 countries from Eastern and Southern Africa⁵. Following the workshop, the University of Nairobi offered to host the East Africa Regional Focal Point and nominated a staff member to coordinate activities.

10. In November 2005, a sub-regional workshop was held at Aleppo, Syria to examine priorities for animal genetic resources management and regional collaboration. The workshop which involved the participation of nine countries⁶ was organized by FAO and ICARDA. Following the meeting, ICARDA offered to host the Regional Focal Point for West Asia and the Near East, and made available staff and facilities to operate the Focal Point.

11. In December 2005, a subregional policy workshop on animal genetic resources in Mesoamerica was jointly organized by GTZ, InWENT (Capacity Building International, Germany) and FAO in Nicaragua. A back-to-back workshop on regional priorities for animal genetic resources management in Mesoamerica was organized by FAO. The 13 participating country representatives⁷ expressed the view that the establishment of a regional focal point would require support from FAO. Discussions with the Inter-American Institute for Cooperation on Agriculture are continuing.

12. In February 2006, an East Asia regional meeting on strategic priorities for action in animal genetic resources was organized by China involving three countries⁸. Participants agreed on the need for regional cooperation on the management of animal genetic resources, including research and capacity building.

13. In May 2006, a South West Pacific regional workshop on animal genetic resources, funded by the Government of Australia and supported by the Secretariat of the Pacific Community, was held in Nadi, Fiji. Representatives from 16 countries⁹ adopted workshop resolutions to identifying priority actions, and agreed on the need for regional cooperation in the management of animal genetic resources, including furthering establishment of animal genetic resources networks. This was endorsed by a meeting of the Pacific Heads of Veterinary and Animal Production Service.

14. In June 2006 a 3-day Central Asia-Caucasian Workshop: “Sustainable Management of Animal Genetic Resources: Priorities, Policies, Capacity Building and Conservation”, was held in Almaty, Kazakhstan with the participation of 12 countries¹⁰. The main objectives of the meeting were to prepare for the establishment of a regional focal point and to discuss strategic priorities for regional cooperation in the management of animal genetic resources. Kazakhstan considered offering to host a Regional Focal Point for Central Asia. All countries expressed appreciation for this offer and signed a Memorandum of Understanding for regional cooperation.

15. In 2005, at Minsk, Belarus, a workshop was convened involving animal genetic resources specialists and *AgroWeb*¹¹ managers from 6 countries¹². A Memorandum of Understanding was prepared that provides for a coordination group for Eastern European countries.

⁵ Burundi, Comoros, Djibouti, Ethiopia, Ghana, Kenya, Lesotho, Madagascar, Mauritius, Mozambique, Namibia, Nigeria, Senegal, Seychelles, Somalia, South Africa, Sudan, Swaziland, Tanzania, Zambia and Zimbabwe

⁶ Algeria, Egypt, Iran, Jordan, Mauritania, Tunisia, Syria, Turkey, Yemen

⁷ Bolivia, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guyana, Haiti, Honduras, Mexico, Nicaragua, Peru, Venezuela

⁸ China, Japan, the Republic of Korea

⁹ American Samoa, Australia, Cook Islands, Fiji Islands, Guam, Kiribati, Malaysia, Marshall Islands, New Zealand, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Vanuatu

¹⁰ Azerbaijan, Uzbekistan, Kazakhstan, Turkmenistan, Russian Federation, Ukraine, Islamic Republic of Iran, Afghanistan, Tajikistan, Kyrgyzstan, Mongolia, China

¹¹ <http://www.agroweb.com/>

¹² Belarus, Georgia, Lithuania, Moldova, the Russian Federation and Ukraine

16. In order to support the establishment of Regional Focal Points and benefit from the experience gained in Europe, the Global Focal Point has developed guidelines on the establishment of Regional Focal Points. Draft guidelines were distributed at various regional meetings and are currently being finalized. The draft guidelines are available to the Working Group in the information document “Guidelines for the development of Regional Focal Points”¹³.

17. Although countries agreed in subregional meetings to create networks or sub-regional focal points, follow up from countries within each of the subregions is weak due to a lack of critical mass in financial and human resources and political support at national and regional levels. The extra-budgetary resources required for (sub)regional focal point development were neither made available to FAO nor directly to sub-regions or countries. National involvement is becoming more important in view of the recent trends in international financing of development projects. Leadership through decision-making and programming at the national level is essential for access to funding. Such new funding modalities require approaches that include national contributions and participation of national stakeholders. With the exception of the European Regional Focal Point, FAO is not aware of any funding proposal of a Regional Focal Point or regional network to donors. The strengthening of the role of National Focal Points, together with mainstreaming animal genetic resources in national policies and strategies, will be essential to effectively set-up regional focal points.

The Domestic Animal Diversity Information System

18. During its Tenth Regular Session, the Commission stressed the crucial importance of data and information-sharing, as a key means to further efforts to achieve the sustainable use, development, and conservation of animal genetic resources, and to address common challenges¹⁴. It agreed that the Domestic Animal Diversity Information System¹⁵ (DAD-IS) should be further developed, taking into account the needs of Member States, and that donor support for this purpose should be encouraged. Further development of DAD-IS should be user-driven.

19. An auto-evaluation of DAD-IS was conducted in late 2004 including a survey addressing nearly 7,000 users subscribed to the system¹⁶. In addition to requests for improved user-friendliness, improved data quality and better access to quality images, one of the main recommendations resulting from evaluation was to establish a well-documented and automated mechanism for updating databases in the System. This recommendation was in line with the further development of DAD-IS, which has resulted in FAO’s participation in the European Commission funded project called “European Farm Animal Biodiversity Information System” (EFABIS). This project was coordinated by the European Association for Animal Production and technically led by the Institute for Animal Breeding of the Federal Agricultural Research Centre (Mariensee, Germany).

20. The objective of the EFABIS project was to establish an internet-based system that allows direct and automatic transmission of updated data from the national level to the regional and global levels. The system allows countries and regions to define specificities in addition to the

¹³ CGRFA/WG-AnGR-4/06/Inf. 8

¹⁴ CGRFA-10/04/REP para 46

¹⁵ <http://www.fao.org/dad-is/>

¹⁶ A total of 284 responses were received. Of these, 45% had found out about the product through a web search, 26% through a colleague and 15% through a DAD-IS moderator. Thirty-eight percent of respondents work for a university, 25% for a research institute, 22% for government and 9% as private consultants. Eighty percent of respondents used the online version of DAD-IS. Seventeen percent use the product at least monthly, and 53% reported occasional use. Fifty-eight percent use DAD-IS for browsing, 48% conduct targeted information retrieval, and 32% use it as a teaching tool. Thirty-five percent consider it to be of high, 49% of moderate and 5% of little usefulness to them. The need for updating of the information provided was specifically mentioned by 9% of respondents. Twelve percent had problems with the usage and navigation of the product, whereas 67% had no problems. Eight percent had difficulties understanding the outputs, whereas 60% had none.

core data structure. A specific tool has been developed to support translation of national and regional systems into languages other than FAO languages. Poland set up a national node within the system in both Polish and English. The regional EFABIS node was launched in April 2006 and training was provided to European National Coordinators of 24 countries in a two-day workshop. New open-source software has been developed and has been used as basis for the development of DAD-IS:3, which will be launched in December 2006. The web-based interface has been designed according to comments and proposals made by users of DAD-IS:2. DAD-IS:3 gives full responsibility of data quality to National Coordinators. Tools have been developed within the EFABIS project to support National Coordinators in updating, managing and reporting of national AnGR related data. The National Coordinators are able to update their national databases in DAD-IS, including uploading of high quality images and references through the internet. A number of output options have been developed for analysis of data, including an early warning tool to project the population size and structure of breeds in future. Currently, the Global Focal Point is arranging for the translation of DAD-IS:3 into Spanish and French.

21. While the primary aim of EFABIS was a holistic database system, a follow-up project called EFABIS-net, which is also being funded by the European Commission, will support establishment of national databases. At present, 13 countries have signed EFABIS-net agreements and others have indicated interest in participating. The experience gained through the EFABIS-net project is likely to help animal genetic resources data and information system development in other regions – especially in establishing national databases with direct links to the global database contained in DAD-IS.

The Domestic Animal Diversity Network

22. In February 2005, the Domestic Animal Diversity Network (DAD-Net) was established at the Global Focal Point to enhance communication. The network has proven to be an effective means for sharing experiences, enabling network participants to request information, and in facilitating informal discussions among individuals involved in various aspects of the management of animal genetic resources. Network registration is provided free-of-charge. Initial invitations for subscription were sent to the persons registered in DAD-IS. Currently more than 1000 subscribers participate in the network.

C THE TECHNICAL PROGRAMME OF WORK

Inventory

23. Significant effort was made to improve the information base on the status of animal genetic resources for food and agriculture. A major initiative undertaken by the Global Focal Point was updating the Global Databank for Farm Animal Genetic Resources (Global Databank) with information contained in the 169 Country Reports for Animal Genetic Resources that were received by FAO by December 2005, followed by a request for further updating and correction to all National Coordinators.

24. This update resulted in a significant increase of the total number of breed records in the Global Databank. As of January 2006, the Global Databank contained 14,017 records (10,512 for mammalian and 3,505 for avian breed populations). Population data for many breeds are still weak or missing, as many Country Reports contained information on the breeds being used, but often lacked data on the population size for each breed. Such information is still not easily available to National Coordinators. As of June 2006, the geographic coverage of the Global Databank included 182 countries.

25. To improve understanding of the total number of the breeds worldwide, a desk study was undertaken, with the results having been sent to all National Coordinators for verification. A new breed classification system was developed using the following categories: Transboundary breeds are those that are kept in more than one country. It is estimated that there are 1,080

transboundary breeds. These breeds were subdivided into transboundary regional breeds (breeds that occur only in one of seven regions ¹⁷) totalling 523 breeds; and transboundary international breeds (breeds that occur in more than one region) of which 557 breeds were identified. A total of 6,536 local breeds (breeds that occur only in one country) were classified. Using the new classification system, it is estimated that in total, 7,616 breeds of livestock are used worldwide, with 86 percent of these being local breeds.

26. The image database of DAD-IS has been upgraded significantly. All images received by FAO from National Coordinators and collected through a project funded by the Government of Japan, have been scanned, inserted into the database and linked to breed information. The system now contains 5,500 images illustrating more than 1,700 breeds

27. Within the framework of the 2010 Biodiversity Indicator Development Plan under the Convention on Biological Diversity (CBD), the Global Environment Facility (GEF) accepted the 2010 Biodiversity Indicators Partnership project, a cross-sectoral project, which includes a component on animal genetic resources. The project will further develop the indicators selected by the CBD for monitoring progress towards the 2010 biodiversity target. The CBD headline indicator is “trends in genetic diversity of domesticated animals, cultivated plants, and fish species of major socioeconomic importance”. The project will begin in 2007. In order to report on the indicator, countries need to improve data quality of their national data bases in DAD-IS.

Characterization

28. Work on characterization continues to be an important element of the technical programme. To complement the guidelines developed for the Measurement of Domestic Animal Diversity (MoDAD), the Global Focal Point has initiated preparation of guidelines for phenotypic traits characterization.

29. The work of the International Society of Animal Genetics (ISAG)/FAO Advisory Group on Animal Genetic Diversity progressed during the current reporting period. The ISAG/FAO Advisory Group revised and expanded the marker lists to cover cattle, sheep, goat, yak, buffalo, horse, ass, pig, camelids, chicken, and ducks. The Advisory Group met in Japan in September 2004. It recommended the establishment of a bank of standardized micro-satellite primers for small ruminants and agreed to assist with their application in genetic diversity studies. For better standardization, standard samples from animals of a wide allele range will also be sent on request. ILRI and the ECONOGENE project, which was funded by the EC, are ready to provide such standard samples for small ruminants. A session on “Biodiversity research: understanding the past, designing the future” was held during the 30th ISAG conference in August 2006 in Brazil, where also another meeting of the ISAG/FAO Advisory Group took place.

30. The FAO/International Atomic Energy Agency Joint Division for Nuclear Techniques in Food and Agriculture (AGE) undertook with the participation of ILRI, a coordinated research project entitled, “Gene-based Technologies in Livestock Breeding: Characterization of Small Ruminant Genetic Resources in Asia”. The project involves phenotypic and genetic characterization of nearly 100 sheep and goat breeds in 8 Asian and Near East countries¹⁸. Molecular markers for characterization include micro-satellites, single nucleotide polymorphisms in expressed genes, and sites of polymorphism in mitochondrial DNA. Equipment and training for participating scientists were provided by the project. It was planned to expand this activity, and establish banks of standard primers for other major livestock species and make them available to all interested parties. However, the funds to support the elaboration of the primers have still to be secured.

¹⁷ Seven regions: Africa, Asia, Europe, Latin America and the Caribbean, Near and Middle East, North America, Southwest Pacific

¹⁸ Bangladesh, China, Indonesia, Iran, Pakistan, Sri Lanka, Saudi Arabia, Vietnam

31. The FAO workshop “The Role of Biotechnology for the Characterization and Conservation of Crop, Forestry, Animal and Fishery Genetic Resources” was held March 2005, in Italy. The book “The role of biotechnology in exploring and protecting agricultural genetic resources” resulting from this workshop has been published¹⁹. The workshop was attended by participants from 38 countries²⁰.

Sustainable Utilisation

32. The Commission, at its Tenth Regular Session, recognized the importance of the need for training in sustainable utilisation and stressed the need to mobilize additional financial resources for training²¹. However, FAO was not able to secure matching extra-budgetary sources to conduct the required levels of training. Nevertheless, several initiatives have been undertaken in the current reporting period.

33. The FAO Regional Office for Asia and Pacific contributed to training courses organized by ILRI and Swedish University of Agricultural Sciences. The workshop “Goats, an undervalued asset in Asia?”, which focussed on production, breeding and marketing of goat genetic resources, was held during the Animal Production and Health Commission for Asia and the South Pacific (APHCA) annual meeting in Laos, with participants from 18 countries.

34. In July, 2006, the Global Focal Point, in association with the World Association on Animal Production, organized an expert meeting on sustainable utilization of animal genetic resources in Terni, Italy. Seven experts representing four regions participated in the meeting²². The aim was to define the concept of sustainable utilization of animal genetic resources in line with the Addis Ababa Principles and Guidelines developed under the CBD. The conceptual framework and guiding principles developed during the meeting will provide a key input for developing guidelines on sustainable utilization of animal genetic resources. The report of the meeting is available to the Working Group as the information document “Report on the Expert Meeting on Sustainable Utilization, as a support to the further development of the Global Strategy for the Management of Animal Genetic Resources, Ferentillo, Italy, 1-4 July 2006.”²³.

35. FAO, with extra-budgetary funding from the Government of Norway, continued the development of guidelines and simple support tools to assist in planning of breeding programmes, particularly in low- to medium-input production systems. This covers the design and development of the decision-support tools, their field testing, the subsequent refining of the guidelines, and regional training workshops.

36. A number of projects on the sustainable utilization of animal genetic resources were initiated. FAO is a partner in two ILRI led projects: “Development and Application of Decision-Support Tools for Conservation and Sustainable Use of Genetic Diversity in Indigenous Livestock and Wild Relatives in Asia”²⁴ that has been submitted to the GEF for funding, and “In-situ conservation of endemic ruminant livestock in West Africa”²⁵, which has been approved for funding by the GEF and is co-funded by the African Development Bank.

¹⁹ /ftp.fao.org/docrep/fao/009/a0399e/a0399e00.pdf

²⁰ Australia, Bangladesh, Benin, Bosnia and Herzegovina, Brazil, Cameroon, Canada, Colombia, Denmark, Egypt, France, Gambia, Germany, Guyana, India, Indonesia, Italy, Kenya, Madagascar, Malaysia, Mexico, Namibia, Netherlands, Nigeria, Pakistan, Panama, Peru, Philippines, South Africa, Spain, Sri Lanka, Switzerland, Tanzania, Thailand, United Kingdom, United States of America, Venezuela, Zambia

²¹ CGRFA-10/04/REP Para 48

²² Argentina, Canada, Germany, Japan, Sri Lanka and The Netherlands. The expert invited to represent Africa was unable to obtain a visa but contributed remotely.

²³ CGRFA/WG-AnGR-4/06/Inf. 5

²⁴ Bangladesh, Pakistan, Sri Lanka, Vietnam

²⁵ Gambia, Guinea, Mali, Senegal

37. FAO has been invited to partner in project proposals on characterization, network development and capacity building, which were submitted to the European Commission.

Conservation

38. The Commission stressed at its tenth Regular Session that further action is required to prevent the continuing erosion of animal genetic resources. According to the latest analysis, many breeds continue to be at risk of being lost. The *State of the World* process has helped to improve understanding of the number of breeds being used and their status. The Global Databank indicates that of the total known number of breeds (7,616 breeds) 1,491 breeds or 20 percent are at risk. However, this figure is likely to underestimate of the total number of breeds at risk, as population data for many breeds is still inadequate.

39. A number of initiatives were undertaken to consider conservation options for animal genetic resources since the third meeting of the Working Group. The Commission requested FAO to elaborate a conceptual approach to the conservation of animal genetic resources, considering complementary *in situ* and *ex situ* measures, taking into account recent advances in relevant technologies and methodologies²⁶. In response, FAO prepared a discussion paper, which is provided to the Working Group in the information document “A strategic approach to the Conservation of Animal Genetic Resources”²⁷.

40. An international conference on “Options and Strategies for the Conservation of Farm Animal Genetic Resources,” was held in Montpellier, France in November 2005.²⁸ The aim of the conference was to identify strategic priorities for action and to contribute to the development of a global framework for animal genetic resources conservation. The conference also served to assist the CGIAR System-wide Genetic Resources Programme and the Future Harvest Centres to further define their roles and potential contributions. Participants recommended 13 priority areas of action for conserving the world’s farm animal genetic resources.

41. In 2005, the CGIAR Science Council commissioned a report on the Conservation of Livestock and Fish Genetic Resources. The Report and the Science Council commentary were published in November 2005²⁹. Following the finalization of the report, a meeting with representatives of the CGIAR Centers and FAO was convened in May 2006, to discuss implementation of priority actions identified in the report, including preparation of plans for the conservation of indigenous livestock breeds.

Technical Assistance

42. The need for technical assistance, especially for capacity building, was a major priority area identified in Country Reports. The Commission, at its tenth Regular Session³⁰, stressed the need to take immediate steps to implement national priorities. National Coordinators for animal genetic resources have requested training and support to develop their technical capacity.

²⁶ CGRFA-10/04/REP Para. 50

²⁷ CGRFA/WG-AnGR-4/06/4 Inf.6

²⁸ Organization of the conference described in the CGRFA/WG-AnGR-4/06/2

²⁹ <http://www.sciencecouncil.cgiar.org/activities/spps/pubs/AnFiGR%20study%20report.pdf>

³⁰ CGRFA-10/04/REP Para. 45

43. In response to the need for technical assistance to ensure the better use, development and conservation of animal genetic resources, FAO has furthered invested in providing assistance, directly and through cooperation with other organizations. Several of the technical assistance initiatives for the current reporting period, including FAO Technical Cooperation Projects (TCP), are listed below:

- Development of local goat production and change of regulation related to EIA (environmental impact assessment) to include agrobiodiversity in Laos PDR, supported through the FAO/Netherlands Partnership Programme.
- A Technical Cooperation Project on genetic improvement of dairy goats in Democratic Peoples Republic of Korea has been finalized in 2005.
- A strategy for active conservation of the dual-purpose Pinzgau cattle breed is being developed in the Slovak Republic and in Romania.
- A capacity building project has being initiated to support *in situ* conservation and use of animal genetic resources in Albania.
- Technical Cooperation Project proposals are under development on dairy cattle improvement for Bangladesh, Myanmar, Sri Lanka and to upgrade the national Animal Breeding Programme in Mongolia. In Mongolia this would be supplementing and expanding a current project funded by the Government of Japan. Technical Cooperation Projects on buffalo improvement in Pakistan and on dairy cattle improvement in Nepal are under preparation.

44. The FAO/International Atomic Energy Agency Joint Division for Nuclear Techniques in Food and Agriculture (AGE) supported Regional Technical Cooperation projects on animal breeding in Asia and Africa. Participants from 18 African countries and 13 Asian countries received technical support for the establishment and management of artificial insemination (AI) centres, including monitoring of female reproductive performance. Guidelines for establishing AI centres in each of the regions were developed.

45. Other ongoing AGE projects are addressing the conservation and sustainable management of animal genetic resources. An expert meeting on selection criteria for breeding heifers was held in Bangladesh, in February, 2006. A training course on selective breeding and gene technologies was held in the Republic of Korea in April, 2006.

46. The AGE is supporting a National Technical Cooperation project in Peru, "Use of Nuclear Techniques to Improve Alpacas Productive and Reproductive Methods". DNA analysis equipment has been provided and a training workshop on strategies for genetic improvement of South American camelids was held in June, 2006.³¹

47. The AGE has financially supported activities within the scope of the "BovHapMap Project" and a gene mapping project for helminth resistance in sheep in collaboration with ILRI and USDA. The AGE also has supported two training courses on molecular genetic methods convened at ILRI, in Kenya in 2004 and 2005/2006.³²

48. FAO, together with the International Committee for Animal Recording (ICAR), organized two technical workshops in Tunisia in 2004, with approximately 60 participants attending from 46 countries³³. The first workshop addressed the development of animal identification and

³¹ Argentina, Bolivia, Chile, Ecuador, Peru

³² Bangladesh, China, Indonesia, Italy, Iran, Kenya, Pakistan, Saudi Arabia, Sri Lanka, Vietnam

³³ Australia, Austria, Belgium, Bolivia, Brazil, Canada, Chile, Croatia, Cyprus, Czech Republic, Denmark, Egypt, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Korea, Latvia, Lithuania, Luxemburg,

recording systems for developing countries. The workshop proceedings were translated into Arabic and distributed. The second workshop addressed the status of genetic resources, recording and production systems in African, Asian and American Camelids.

Communication

49. Communication with stakeholders remains an important function of the Global Focal Point, in order to increase awareness of the roles, values and functions of animal genetic resources and to keep stakeholders informed of progress made in relation to various initiatives. FAO published a number of technical studies and materials, contributed to publications produced by other organizations and set-up and continued to maintain DAD-Net. The major publications are listed in the *Appendix* to this document. The Global Focal Point developed and published the following communication products both in hard copy and in electronic format within the DAD-IS library:

- Communication newsletters #4 and #5, which were sent to National Coordinators, Permanent Representatives and FAO Representatives.
- A third brochure on the State of the World's Animal Genetic Resources process "*Protecting animal genetic diversity for food and agriculture – Time for Action*", which was produced in 6 languages (Arabic, Chinese, English, French, Spanish and Russian) and widely distributed to Permanent Representatives, FAO Representatives and through the global animal genetic resources network (National Coordinators, National Consultative Committees and NGOs).
- A CD containing all workshop documents and other materials prepared for the National Coordinators' Workshop that was held prior to the third session of the Working Group. The Poster Book continues to be disseminated.

D REPORTING AND EVALUATION COMPONENT

State of the World Process

50. Progress made in the preparation of Country Reports and the *State of the World's Animal Genetic Resources* is provided to the Working Group in working document "Progress report on the preparation of the *State of the World's Animal Genetic Resources* and the *Strategic Priorities for Action*"³⁴.

Country Initiatives

51. A large number of country and regional initiatives were undertaken to achieve the use, development and conservation of animal genetic resources over the past two-years. Some of these initiatives, which have been reported to FAO using the DAD-Net network, are described as follows:

- **Tanzania** has prepared a National Breeding Policy. Upon approval, an implementation strategy and action plan will be prepared. The Government has also made specific provisions to support indigenous breeds. *In situ* conservation programmes will be developed involving farmer groups in selected areas of the country.
- **Malawi** reported activities for improving their institutional framework for animal genetic resources since the preparation of their Country Report. This includes: policy and legal frameworks for biodiversity, preparation of a biodiversity strategy and

Mongolia, Morocco, Namibia, Netherlands, New Zealand, Oman, Pakistan, Peru, Poland, Portugal, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Syria, Thailand, Tunisia, United Kingdom, United States of America

³⁴ CGRFA/WG-AnGR-4/06/2

action plan, and national guidance for the conservation and sustainable use of biodiversity.

- **Ethiopia** and **Malawi** reported on the development of policy and legislation governing access and benefit sharing for genetic resources.
- In **China**, a new Animal Husbandry Law became effective July 1, 2006. To implement provisions of the law, the Ministry of Agriculture has developed a series of regulations and actions for the conservation and management of animal genetic resources. The Ministry of Agriculture launched a nation-wide survey on animal genetic resources using recently developed guidelines, and a list of key indigenous breeds for conservation was announced. China implemented a number of awareness raising measures, such as the production of a stamp collection displaying indigenous breeds, and the China National Commission for the Management of Farm Animal Genetic Resources prepared a calendar.
- **Albania** and **Indonesia** are in the process of preparing breeding laws that address the conservation of animal genetic resources. In **Albania**, the new breeding law will provide for the establishment of an Albanian genebank.
- In **Slovenia**, the "Regulation on Conservation of Farm Animal Genetic Resources" was adopted, as a key element of the Livestock Breeding Act.
- In **Poland** and in the **Czech Republic**, animal breeding laws were amended to include separate chapters on animal genetic resources.
- In **South Africa**, the collection of wildlife and indigenous livestock biomaterials established in the Wildlife Biological Resource Centre has been recently recognised by the Government as a national asset. A consortium, Biobank SA, was established to involve stakeholders in addressing issues such as access and benefit sharing, policy and legislation, research and innovation in biomaterial banking.
- In **Czech Republic**, negotiations are underway to set rules for access to biological material in gene banks.
- The European Commission prepared new legislation for 2007-2013 on rural development, which provides measures to support the conservation of genetic resources for food and agriculture within the **European Union**.
- In **Bulgaria**, the Association of Indigenous Breeds initiated a project for preserving four native breeds. This involved detailed breed descriptions and genetic analysis.
- Since 2004, with financial support from the Government of the United States, **Bangladesh** has operated a project on characterization, conservation and development of the Red Chittagong indigenous cattle breed.
- In cooperation with FAO, **Turkey** has prepared a GEF project proposal on the conservation of farm animal genetic resources.
- **The United Kingdom** produced a film called "Managing the UK's farm animal genetic resources – planning for the future." The film raises key questions regarding development of a national action plans for animal genetic resources and presents views of various stakeholders.
- **Japan**, in cooperation with FAO, has published a World Farm Animal Breed Encyclopaedia (in Japanese).

The Early Warning System for Animal Genetic Resources

52. The Commission on Genetic Resources for Food and Agriculture (CGRFA) at its tenth Regular Session requested FAO, to prepare a proposal, in collaboration with other relevant organizations, for a monitoring system for animal genetic resources, with options for establishing a country-based early warning and response mechanism³⁵. This proposal should link directly to the development and revision of indicators enabling monitoring of endangerment status and trends, taking into account regional specificities. However, this recommendation has not been implemented to date, as a result of the high priority given to the preparation of the *State of the World's Animal Genetic Resources*. Additional extra-budgetary resources need to be mobilized, in order to develop and establish a global monitoring and early warning system for animal genetic resources.

³⁵ CGRFA-10/04/REP Para. 49

Appendix

Recent FAO publications on Animal Genetic Resources:

- *Animal Genetic Resources Information Bulletin*: Issues 35, 36, 37 and 38. The publications are available in the DAD-IS library.
- *Country Posters Describing Animal Genetic Resources Activities*. Over 70 posters produced by countries to increase awareness of the functions and values of animal genetic resources and the need for continued efforts to implement priority actions identified in Country Reports. The posters are available in the DAD-IS library.
- FAO Legislative Study 89 titled: *The legal framework for the management of animal genetic resources* has been produced in cooperation between FAO's Animal Genetic Resources Group and the Development Law Service of the Legal Office³⁶. Since January 2006, 1200 copies have been distributed.
- *Livestock Report 2006*. The chapter: "Animal genetic resources – time to worry?" was prepared to highlight critical issues within the livestock sector arising from globalization³⁷.
- *Marker-Assisted Selection in Crops, Livestock, Forestry and Fish: Current Status and the Way Forward*, a peer-reviewed publication produced in collaboration between several groups of FAO, directed to scientists and decision-makers in developing countries (in print).
- *Indigenous Breeds, Local Communities - Documenting Animal Breeds and Breeding from a Community Perspective* published by Lokhit Pashu-Palak Sansthan. The publication was produced with the support of the German Agency for Technical Cooperation (GTZ) and FAO. The publication is available in the DAD-IS library.
- *Farm Animal Genetic Resources - Safeguarding National Assets for Food Security and Trade* jointly published by GTZ, FAO SADC (Southern African Development Community) and CTA (Technical Centre for Agricultural and Rural Cooperation). This publication is based on a series of four workshops. The publication is available in the DAD-IS library.
- *La biodiversite agricole en Afrique de l'Ouest. Situation actuelle, experiences et perspectives*. (Agricultural biological diversity in West Africa). Proceedings of the Workshop held in Bamako, 2003. The publication is available in the DAD-IS library.
- *Applications of Gene-Based Technologies for Improving Animal Production and Health in Developing Countries*, Edited by Harinder P.S. Makkar and Gerrit J. Viljoen. Springer Publishers³⁸.
- *Improving Artificial Breeding of Cattle in Africa*. Guidelines and Recommendations. IAEA TECDOC Series No. 1437³⁹
- *Improving Artificial Breeding of Cattle and Buffalo in Asia*. Guidelines and Recommendations. IAEA TECDOC Series No. 1440⁴⁰

³⁶ <http://www.fao.org/Legal/legstud/l89/l89e.pdf>

³⁷ http://www.fao.org/ag/againfo/resources/en/publications/sector_reports/2006livestockreport/a0255e00.pdf

³⁸ <http://www-naweb.iaea.org/nafa/aph/public/d3-gene-based.html>

³⁹ http://www-naweb.iaea.org/nafa/aph/public/te_1437_web.pdf

⁴⁰ <http://www-naweb.iaea.org/nafa/aph/public/ras-ai-mar04.pdf>

- *Development of Animal Identification and Recording Systems for Developing Countries.* FAO-AGA, ICAR T.S. no. 9, 2004⁴¹.
- *Current status of genetic resources, recording and production systems in African, Asian and American Camelids.* Proceedings of an ICAR/FAO seminar held in Sousse, Tunisia, 30 May 2004, FAO-ICAR, ICAT TS no 11 ⁴²

⁴¹ http://www.icar.org/docs/technical_series/tec_series_9_sousse.pdf

⁴² http://www.icar.org/Documents/technical_series/tec_series_11_sousse.pdf