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Item 3.1(d) of the Draft Provisional Agenda

COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Eleventh Regular Session

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DRAFT *STRATEGIC PRIORITIES FOR ACTION* – CHAIR'S TEXT

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DRAFT *STRATEGIC PRIORITIES FOR ACTION* – CHAIR'S TEXT

I. INTRODUCTION

1. The overall process for the development of the draft report on *Strategic Priorities for Action* is presented to the Commission on Genetic Resources for Food and Agriculture (Commission) in the document *Draft Strategic Priorities for Action for the Sustainable Use, Development and Conservation of Animal Genetic Resources for Food and Agriculture.*[1] The process included a detailed review of the draft *Strategic Priorities for Action* by the Intergovernmental Technical Working Group on Animal Genetic Resources (Working Group), during its fourth session, which was convened in December 2006.

2. The Working Group provided a large number of suggestions for consideration by the Commission on both the content and structure of the *Strategic Priorities for Action*. The suggested revisions provided by the Working Group are available to the Commission in the document *Draft Strategic Priorities for Action for the Sustainable Use, Development and Conservation of Animal Genetic Resources for Food and Agriculture*.[2]

3. To further advance the draft *Strategic Priorities for Action* in preparation for the Eleventh Regular Session of the Commission, the Working Group welcomed a proposal by Mr. Harvey D. Blackburn (United States of America), Chair of the Working Group, to establish a regionally balanced *Friends of the Chair* group. The Government of Switzerland generously offered to host a meeting of the *Friends of the Chair* before the Commission met.

4. Mr. Blackburn agreed to chair the group and noted that it was his intention to prepare a Chair's Report, which would propose how to structure the *Strategic Priorities for Action*, suggest wording to achieve agreement on outstanding matters, and ways and means to reduce duplication, based on comments provided by the Working Group. The meeting of the *Friends of the Chair* took place in Fribourg, Switzerland from 26 – 28 March 2007. The list of members of the group is attached as *Appendix 2*.

5. The current document provides the results of the *Friends of the Chair* meeting. It presents an overview of the suggested revisions to advance the *Strategic Priorities for Action* made by the *Friends of the Chair*. *Appendix 1* contains the consolidated text resulting from the work of the *Friends of the Chair*.

6. Significant progress was made during the *Friends of the Chair* meeting in addressing the comments provided on the draft *Strategic Priorities for Action* by the Working Group. While some brackets remain in the consolidated text (particularly the introduction sections), the *Friends of the Chair* agreed on suggested rewording of Strategic Priorities, Rationale Statements, and Actions. The *Friends of the Chair* also agreed on ways to re-structure and re-organize elements of the text to reduce duplication.

7. The consolidated text in *Appendix 1* provides cross-references with the Working Group's text contained in the document *Draft Strategic Priorities for Action for the Sustainable Use, Development and Conservation of Animal Genetic Resources for Food and Agriculture*,[3] to assist the Commission in understanding how the *Friends of the Chair* addressed the specific suggestions made by the Working Group in regard to re-drafting text and re-structuring the document.

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[1] CGRFA-11/07/6.

[2] CGRFA-11/07/6.

[3] CGRFA-11/07/6.

8. The Working Group recommended that the outcome of the International Technical Conference on Animal Genetic Resources be a *Global Plan of Action for Animal Genetic Resources*, which would contain the *Strategic Priorities for Action.* At the request of the *Friends of the Chair,* the Secretariat consolidated the text in *Appendix 1* accordingly.

II. AMENDMENTS MADE BY THE FRIENDS OF THE CHAIR

9. The consolidated text addresses the suggestions that were made by the Working Group, with agreement having been reached on most of the text that had been placed in brackets by the Working Group. The number of Strategic Priorities has been reduced and the proposed Actions have been logically sequenced. The following provides an overview of the proposed amendments to the *Strategic Priorities for Action* made during the meeting of the *Friends of the Chair.*

10. ***Strategic Priorities for Action*** **Section I:** Due to time constraints, the *Friends of the Chair* did not review in detail the current title and introductory text. However, as indicated above, the *Friends of the Chair* requested the secretariat to consider ways to modify the current document so that *Strategic Priorities for Action* would become a core element of the *Global Plan of Action for Animal Genetic Resources.* To accomplish this, the consolidated text proposes the following changes:

- **The Title**: is proposed to be changed to: *Global Plan of Action for Animal Genetic Resources.*
- **The Introduction:** contains several proposals to change *Strategic Priorities for Action* to the *Global Plan of Action for Animal Genetic Resources.*
- **Aims and Strategies:** are now proposed as the aims and strategies of the *Global Plan of Action for Animal Genetic Resources*, rather than the aims and strategies of the *Strategic Priorities for Action.*
- **The structure and organization section:** is now proposed as the structure and organization section of the *Global Plan of Action for Animal Genetic Resources*, rather than of the *Strategic Priorities for Action.*
- **Livestock:** a footnote has been added to the introduction to clarify that the term "livestock" includes both avian and mammalian species.

11. ***Strategic Priorities for Action*** **Section II: The Strategic Priority Areas:** A large number of changes have been suggested and are reflected in the consolidated text. Consolidations of the Strategic Priorities for Action were based upon Working Group recommendations made in December 2006. The following provides an overview of the detailed proposals made by the *Friends of the Chair* encompassing and building on the suggestions made by the Working Group. The changes to Section II are the following:

- The *Friends of the Chair* removed the distinction between Strategic Priorities to be implemented at national and international level in all Strategic Priority Areas. In the consolidated text the Strategic Priorities and subsequent Actions mention the appropriate level of implementation wherever relevant.
- Strategic Priorities 1, 4 and 6 were consolidated as Strategic Priority 1 to reduce duplication.
- Strategic Priorities 2, 11 and 16 were consolidated as Strategic Priority 14 in Strategic Priority Area 4 to reduce duplication.
- Strategic Priorities 5, 12 and 17 were consolidated as Strategic Priority 16 in Strategic Priority Area 4 to reduce duplication.

- Other Strategic Priorities and Actions have been renumbered accordingly, providing for logical sequencing. The references to the numbers of the Working Group's text can be found in the consolidated text.
- The wording of the Rationale sections and Actions has been significantly improved.

III. CONCLUSIONS OF THE FRIENDS OF THE CHAIR GROUP

12. The *Friends of the Chair* group concluded that while it had made significant progress in advancing the *Strategic Priorities for Action*, some issues remain for the Commission to resolve. The main issues relate to incentive measures, and to financing. Financing is addressed in Strategic Priority 23, with substantial text remaining in brackets. The *Friends of the Chair* group recommends that the Commission give priority to resolving the outstanding issues.

13. The *Friends of the Chair* group recommends that the Commission take advantage of the significant progress made by the *Friends of the Chair* in advancing the *Strategic Priorities for Action*, with a view to develop and forward a first draft *Global Plan of Action for Animal Genetic Resources* for adoption at the International Technical Conference on Animal Genetic Resources. In this regard, the *Friends of the Chair* group recommends that the Commission utilize *Appendix 1* of the current document to further its review of the draft *Strategic Priorities for Action* and to resolve outstanding issues identified by the Working Group.

Appendix 1

CHAIR'S CONSOLIDATED TEXT - SUGGESTIONS TO ADVANCE THE FINALIZATION OF THE STRATEGIC PRIORITIES FOR ACTION FOR ADOPTION AT THE INTERNATIONAL TECHNICAL CONFERENCE ON ANIMAL GENETIC RESOURCES

GLOBAL PLAN OF ACTION FOR ANIMAL GENETIC RESOURCES

I. INTRODUCTION

1. *[*Animal genetic resources for food and agriculture[1] are an essential part of the biological basis for world food security, and contribute to the livelihoods of over a thousand million people. A diverse resource base is critical for human survival and well-being, and the elimination of hunger: animal genetic resources are crucial in adapting to changing socio-economic and environmental conditions, including climate change. They are the animal breeder's raw material and amongst the farmer's most essential inputs. They are essential for sustainable agricultural production. Properly managed, they need never be depleted, for there is no inherent incompatibility between utilization and conservation. The conservation, sustainable use, and the fair and equitable sharing of the benefits from their use, are an international concern and the *Global Plan of Action for Animal Genetic Resources* provides, for the first time, an agreed international framework for the sector. Promoting the broader use of animal biodiversity will contribute to improved human health and nutrition, and expand opportunities for livelihood diversification and income generation.

Development of the *Global Plan of Action for Animal Genetic Resources*

2. In 1990, the FAO initiated the preparation of a comprehensive programme for the sustainable management of animal genetic resources at the global level. In 1993, FAO launched the Global Strategy for the Management of Farm Animal Genetic Resources to guide national, regional and global efforts to strengthen the contribution of domesticated animals and their products to food security and rural development, and to prevent the erosion of animal genetic resources.

3. From 1997, the FAO's inter-governmental Commission on Genetic Resources for Food and Agriculture has guided a country-driven process for the preparation of *The State of the World's Animal Genetic Resources*. In 2001, FAO invited all countries to submit a Country Report on the status and trends of their animal genetic resources; the current and potential contributions of farm animals to food, agriculture and rural development; and the state of national capacity to manage these resources.

4. The Country Reports demonstrate the significant and irreplaceable contribution that the diversity of farm animals makes to the food security and economic development of nations. They show that the full potential of animal genetic resources is far from being realized and confirm the serious erosion of genetic diversity in both developed and developing countries.

5. This erosion has many causes, including changes in production systems, intensive selection, mechanization, the loss of rangeland grazing resources, natural calamities, disease

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[1] Throughout the *Global Plan of Action for Animal Genetic Resources* the term *Animal Genetic Resources* refers specifically to animal genetic resources used in or potentially useful for food and agriculture. The term *Livestock* as used in the document encompasses all domesticated animals used for food and agriculture. The term thus includes both avian and mammalian species that contribute to food and agriculture.

outbreaks, inappropriate breeding policies and practices, the introduction of exotic breeds, loss of animal keepers' security of tenure on land and access to other natural resources, changing cultural practices, the erosion of customary institutions and social relations, the influence of population growth and urbanization, and the failure to assess the impact of practices in terms of sustainability, and develop adequate policies and economic measures. Erosion of animal genetic resources threatens the ability of farmers to respond to environmental and socio-economic changes, including changing diets and consumer preferences.

6. The *Strategic Priorities for Action,* contained within this *Global Plan of Action for Animal Genetic Resources,* propose specific measures to reverse the ongoing trends of erosion and underutilization of animal genetic resources. The implementation of the *Strategic Priorities for Action* will make a significant contribution to international efforts to promote food security and sustainable development, alleviate poverty, in line with the Millennium Development Goals and other international commitments.

The rationale for the *Global Plan of Action for Animal Genetic Resources*

7. For the first time ever, *The State of the World's Animal Genetic Resources* provides a comprehensive global assessment of the roles, values and status of animal genetic resources, which highlights the importance of the livestock sector within agriculture. Specific *Strategic Priorities for Action* for the sustainable use, development and conservation of animal genetic resources for food and agriculture, contained within this *Global Plan of Action for Animal Genetic Resources,* are warranted because of their great importance for global food security, and because of the specific features of domestic animal biodiversity as an integral part of agricultural ecosystems.

8. Livestock genetic diversity and options for its utilization are usually discussed in terms of breeds. "Breeds" are rather cultural concepts than physical entities, and the concept differs from country to country. This is a fact that makes characterization at the genetic level very difficult. For sustainable management, diversity needs to be considered and understood at the species level, between breeds, and within breeds themselves.

9. Key features of animal genetic resources include:

- The diversity of animal genetic resources is essential to satisfy basic human needs for food and livelihood security. They contribute to human needs by providing meat, milk and dairy produce, eggs, fibre, clothes, resources for temporary and permanent shelter, manure for fertiliser and fuel, draught power, hunting assistance and marketable assets. Genetic diversity defines not only animal breeds' production and functional traits, but also their ability to adapt to local conditions, including food and water availability, climate, pests and diseases. Diverse animal genetic resources – particularly in the developing world – are a key to economic development. Approximately 70 percent of the world's rural poor depend on livestock as an important component of their livelihoods. The diversity of these resources, and the consequent adaptability of species and breeds to extreme conditions of drought, humidity, cold and heat, make possible human livelihoods in some of the most inhospitable areas on Earth, from the Arctic and mountain regions to extreme hot and dry areas, where crop production cannot be exclusively depended upon.
- More than 7,000 domestic animal breed populations have been developed by farmers and pastoralists in diverse environments in the 12,000 years since the first livestock species were domesticated. These breeds now represent unique combinations of genes. Thus all animal genetic resources for food and agriculture are the result of human intervention: they have been consciously selected and improved by pastoralists and farmers since the origins of agriculture, and have co-evolved with economies, cultures, knowledge systems and societies. Unlike most wild biodiversity, domestic animal resources require continuous active human management, sensitive to their unique nature.

- In terms of their enormous potential contribution to reducing hunger and poverty, and to sustainable development, animal genetic resources for food and agriculture are under-conserved and under-utilized.
- Countries are highly interdependent, with respect to animal genetic resources. Animal genes, genotypes and populations have spread all over the planet since ancient times, through the diffusion of agriculture and the prominent role of livestock in human migrations. Animals – horse and camels particularly – were the main tools for raiders and conquerors in many regions, spreading cultures and religions. Animal genetic resources have continued without interruption to be developed and improved by pastoralists and farmers, both inside and outside the historic centres of domestication. Moreover, animal genetic resources have been systematically exchanged for the last 500 years, deepening this interdependence. In global terms, most food and agricultural production systems worldwide depend on livestock originally domesticated elsewhere, and breeds developed in other countries and regions. These unique features of domestic animals need to be taken into account in ensuring the fair and equitable sharing of benefits deriving from them, and in tailoring the development of future policy and regulatory measures.
- Most animal genetic resources are currently maintained *in situ*, by farmers, pastoralist and their communities, as integral components of their agricultural ecosystems, economies and cultures. Domestic animals often play key roles in myths, cultures, religions, traditions and social practices. In addition to the animals themselves, foods of animal origin have strong socio-economic and cultural functions in many societies, in addition to playing important roles in nutrition and diets.
- Livestock resources continue to have this important social, cultural and structural role in indigenous and local communities today: the cultural importance of animals is frequently a key factor in *in situ* conservation.
- Domestic animal breeds provide key agro-ecosystem functions, such as nutrient cycling, seed dispersal and habitat maintenance. Animal genetic resources and animal management systems are an integral part of ecosystems and productive landscapes throughout the world. By moving their herd seasonally, pastoralists connect different ecosystems. Land-based production systems that have both plant and animal components need co-management of the various components of biological diversity, including soils, crops, rangelands and pastures, fodder crops and wildlife.
- The extent and rate of animal genetic resource loss is still difficult to estimate, despite the clearer picture of animal genetic resources that has emerged in the country-driven preparation of *The State of the World's Animal Genetic Resources*. The lack of information hinders decision-making with regard to what to conserve and develop, and how to best use limited funds available for conservation. The base lines from which to measure change are still unclear, and methodologies for characterization, inventory and monitoring have not been standardized. Nonetheless, there are indications that numerous breeds have become extinct, and many more will be lost if countries do not rapidly implement conservation measures. While some nations recognize the need to conserve their national animal genetic resources, the global response has so far been sporadic and inadequate. In particular, many local breeds, particularly those held by poor farmers in harsh environments in developing countries, have not yet been sufficiently characterized. These animal populations probably contain many valuable adaptive traits, and with their extinction before they are well understood, considerable value may be lost for ever.
- Traditional production systems required multi-purpose animals, which, although less productive than high output breeds, may contain valuable functional traits. Modern agriculture has developed specialized breeds, optimizing specific production traits. Modern animal breeders have achieved striking productivity increases in high-external input production systems. Livestock currently contribute about 30 percent of agricultural gross domestic production in developing countries, with a projected increase to 39 percent in 2030. Only 14 of the more than 30 domesticated mammalian and bird species

provide 90 percent of human food supply from animals. The five main livestock species: cattle, sheep, goats, pigs and chickens, provide the majority of food production, and among these, a small number of international transboundary breeds[2] account for an ever increasing share of total production. This process leads to a narrowing genetic base, as breeds and indeed species are discarded in response to market forces. In commercial breeds, high selection pressure leads to a narrowing genetic base.

- Policy-makers in many countries, and internationally, are seldom aware of the diverse and significant contributions of animal genetic resources to food and agriculture. The sustainable use and conservation of animal genetic resources has been, and generally continues to be, a low priority in developing agricultural, environmental, trade, and human and animal health policies. The effect has been a failure to invest adequately in essential institutional development and capacity-building.
- Managing animal genetic resources is a complex task because it is necessary to deal both with questions specific to the resources (such as breeding, or the extinction of breeds) and with cross-sectorial matters affecting animal genetic resources, such as animal health measures, economic development and trade standards, and environmental management. Moreover, responsibilities are shared across sectors ands institutions, nationally and internationally.

10. Strategic planned conservation, use and development of animal genetic resources is essential, but countries face complex challenges in considering how best to formulate relevant national and international policies. Enhancing capacity at all levels is a key element of the *Global Plan of Action for Animal Genetic Resources*. The *Global Plan of Action for Animal Genetic Resources* aims to promote a pragmatic, systematic and efficient overall approach, which harmoniously addresses the development of institutions, human resources, cooperative frameworks, and resource mobilization.

11. Activities related to *in situ* conservation, to *ex situ* conservation, and to the utilization of animal genetic resources for food and agriculture, have to date been largely pursued without adequate linkages and coordination: the *Global Plan of Action for Animal Genetic Resources* aims at improving this situation. A certain loss of local breeds is inevitable, given ongoing changes in livestock production systems in developed and developing countries, and the limited availability of resources for conservation. However, to allow this to be a totally random and unsupervised process means accepting an unevaluated but potentially important risk of the loss of resources of major long-term value. Countries, and the international community, should be conscious of the losses that are likely to happen, and should debate and agree on which losses they are prepared to accept, and what investment is needed to maintain and conserve crucial animal genetic diversity. The international research community should provide scientific guidance for strategic decisions, under conditions of imperfect information.

12. The financial and human resource base for this work is poor, and there are many gaps and inefficiencies. In addition, the capacities and activities of countries and regions to address animal genetic resources are at very different stages of development. The *Global Plan of Action for Animal Genetic Resources* will provide a an agreed basis by the international community, to support and increase the overall effectiveness of national, regional and global efforts for the sustainable use, development and conservation of animal genetic resources, and to mobilize resources, including financial resources, sustainably.

[2] FAO has linked breed populations that may belong to a common genepool and may therefore be considered the same breed. These breeds have been termed “transboundary breeds”. Regional transboundary breeds are reported in several countries of one region, and international transboundary breeds are reported in more than one region.

Aims and strategies of the *Global Plan of Action for Animal Genetic Resources*

13. The *Global Plan of Action for Animal Genetic Resources* is intended as a rolling plan, with an initial time horizon of ten years, with provisions for the sustainable use, development and conservation of animal genetic resources, at national, regional and global levels.

14. The main aims of the *Global Plan of Action for Animal Genetic Resources* are:

- to promote the sustainable use and development of animal genetic resources, for food security, sustainable agriculture, and human well-being in all countries;
- to ensure the conservation of the important animal genetic resource diversity, for present and future generations, and to halt the random loss of these crucial resources;
- to promote a fair and equitable sharing of the benefits arising from the use of animal genetic resources for food and agriculture, and recognize the role of traditional knowledge, innovations and practices relevant to the conservation of animal genetic resources and their sustainable use, and, where appropriate, put in place effective policies and legislative measures;
- to meet the needs of pastoralists and farmers, individually and collectively, within the framework of national law, to have non-discriminatory access to the genetic material, information, technologies, financial resources, research results, marketing systems, and natural resources, so that they may continue to manage and improve animal genetic resources, and benefit from economic development;
- to promote agro-ecosystems approaches for the sustainable use, development and conservation of animal genetic resources;
- to assist countries and institutions responsible for the management of animal genetic resources to establish, implement and regularly review national priorities for the sustainable use, development and conservation of animal genetic resources;
- to strengthen national programmes and enhance institutional capacity – in particular, in developing countries and countries with economies in transition – and develop relevant regional and international programmes; such programmes should include education, research and training to address the characterization, inventory, monitoring, conservation, development and sustainable use of animal genetic resources.

15. The *Global Plan of Action for Animal Genetic Resources* is based on the assumption that countries are fundamentally interdependent with respect to animal genetic resources for food and agriculture, and that substantial international cooperation is necessary. In this context, the *Global Plan of Action for Animal Genetic Resources* has been developed on the basis of the following parameters and conditions:

- A diversity of animal genetic resources will ensure the ability of the livestock sector to meet changing market demands and environmental circumstances, including climate change and emerging diseases. Small-scale farmers and pastoralists require animal breeds that meet local needs and provide employment within rural communities, which are resilient to a variety of biotic and abiotic factors, including extreme climatic conditions, feed availability, parasites and other disease factors. Furthermore, livestock provide a direct food source in times of crop failure.
- Because of interdependence, the conservation of a diverse range of animal genetic resources in countries throughout the world reduces risks on a global basis and strengthens global food security.
- The base-line characterization and inventory of animal genetic resources, and routine monitoring of populations, are fundamental to breed improvement strategies and programmes and for conservation programmes, and for contingency planning to protect valuable resources at risk.

- Animal identification and performance recording are essential for the continued improvement of animal genetic resources. Public and private breeders and breeding organizations, and market demand, play a crucial role in this endeavour. In many countries, very little has yet been done in this regard, except for international transboundary breeds.
- The conservation and use of animal genetic resources requires a mixed approach, and both *in situ* and *ex situ* efforts. There is an increasing recognition that, because of the rapid current erosion of animal genetic resources, efficient and cost-effective *ex situ* conservation strategies need to be put in place in the near future, to complement *in situ* conservation. A holistic planning approach to conservation and utilization strategies must seek strategic priorities at the farm, community, breeding organization, national, regional and international levels, to achieve maximum effect, and be sustainable.
- Pastoralists and farmers, individually and collectively, and indigenous and local communities, play a crucial role in *in situ* conservation and development of animal genetic resources. It is important to better understand and support their role in a context of rapid economic and social change, so that they can play an effective function in *in situ* management, and share equitably in the benefits arising from the utilization of these resources. A number of actors and stakeholders can assist livestock keepers and their communities in playing this role: researchers, extension agencies, the private sector, non-governmental organizations and local cooperatives.
- A wide variety of animal breeds supply important ecosystems services in specific landscapes, in particular grazed ecosystems, which is often a strong motivation for their maintenance *in situ*. Such productive links between breeds and landscapes need to be maintained and better managed, through appropriate land use policies and strategies. Wild relatives of domestic animal species, and feral breeds, also require protection.
- The effective management of animal genetic resources, at all levels, depends on the inclusion and willing participation of all relevant stakeholders. Appropriate participatory processes, that ensure that the interests of various stakeholders are respected and balanced, are required.

Structure and organization of the *Global Plan of Action for Animal Genetic Resources*

16. The *Global Plan of Action for Animal Genetic Resources* consists of the following four *Strategic Priority Areas*:

STRATEGIC PRIORITY AREA 1: CHARACTERIZATION, INVENTORY AND MONITORING OF TRENDS AND RISKS.

The actions provide a consistent, efficient and effective approach to the classification of animal genetic resources, and to assess trends in and risks to animal genetic resources.

STRATEGIC PRIORITY AREA 2: SUSTAINABLE USE AND DEVELOPMENT.

The actions are to ensure sustainability in animal production systems, with a focus on food security and rural development.

STRATEGIC PRIORITY AREA 3: CONSERVATION.

The actions focus on steps needed to preserve the genetic diversity and integrity, for the benefit of current and future generations.

STRATEGIC PRIORITY AREA 4: POLICIES, INSTITUTIONS, AND CAPACITY BUILDING.

The actions directly address the key questions of practical implementation, through coherent and synergistic development of the necessary institutions and capacities.

17. The relative priority or importance of each Strategic Priority Area and associated actions may differ significantly for countries and regions. It will depend on the resources themselves (species and breeds), the production systems and environments involved, current management capacities, and programmes underway for the management of animal genetic resources.

18. There is a uniform presentation in each *Strategic Priority Area*:

- The *Introduction* outlines the needs, on the basis of Country Reports and other information generated in the preparatory process.
- The *Long-term goal* states the final outcome to be reached by implementing the proposed actions. In implementing the *Global Plan of Action for Animal Genetic Resources*, measurable and time-bound goals may be developed, to help the international community to judge progress and successes.

19. Each Strategic Priority Area contains a set of Strategic Priorities. For each Strategic Priority:

- The *Rationale* draws upon the findings of the preparatory process, and summarizes the reasons why this is a priority.
- The individual *Actions* propose logical steps to achieve the desired outcomes or improvements in current conditions.

20. Some of the *Actions* will clearly need to involve specific institutions or constituencies. These are not always mentioned by name in the text. The lack of reference to such key partners does not imply their exclusion.***]***

II. THE STRATEGIC PRIORITIES FOR ACTION

STRATEGIC PRIORITY AREA 1: CHARACTERIZATION, INVENTORY AND MONITORING OF TRENDS AND RISKS

Introduction

21. ***[***The state of animal genetic resource characterization, inventory and monitoring of trends and risks activities varies significantly among countries. Some countries do not have data and information systems for animal genetic resources, and others have systems that require significant improvement. This complicates global monitoring of the trends and risks of the resources.

22. Understanding the diversity, distribution, basic characteristics, comparative performance and the current status of each country's animal genetic resources is essential for their efficient and sustainable use, development and conservation. Complete national inventories, supported by periodic monitoring trends and risks are a basic requirement for the effective management of animal genetic resources. Without such information, some breed populations and unique characteristics they contain may decline significantly, or be lost, before their value is recognized and measures taken to protect them.

23. A good understanding of breed characteristics is necessary to guide decision-making in livestock development and breeding programmes. Information from inventories, monitoring trends and risks and characterization enables farmers to determine which breed to use under prevailing production conditions. Comparative analysis of the performance of indigenous and exotic breeds – for both production and functional traits – is needed to inform strategic planning. In the absence of such analysis, local breed development may be ignored in favour of the introduction of exotic germplasm, or indiscriminate cross-breeding that will result in the erosion of local breeds.

24. A major difficulty in completing the world inventory of farm animal breeds results from the fact that most populations are not pure breeds with identifiable and stable characteristics, but are the result of multiple crosses of diverse origins. Further research is needed to assess the optimum approaches to dealing with these mixed non-descript populations in inventories.

25. There is a clear need for inter-operative data and information systems, standards and protocols, to facilitate the sharing of data and information on the status of breeds among countries and regions. This is required to globally rationalize the status of breeds, and assist in setting conservation priorities beyond the national level. In many regions, gaps in data and information on the status of breeds, or obstacles to the effective sharing of data and information within and between countries, frustrate joint development of transboundary breeds.

Long term goal

Improved understanding of the status, trends and risks, and characteristics of all aspects and components of animal genetic resources, to facilitate and enable decision-making for their sustainable use, development and conservation.***]***

Strategic Priority 1: Inventory and characterize animal genetic resources, monitor trends and risks associated with them, and establish country-based early-warning and response systems

(Previously SP 1 / SP 4 / SP 6 merged and modified)

Rationale: Genetic erosion is a problem of national and international concern, and a number of animal breeds are at risk of extinction. The State of the World's Animal Genetic Resources provides the first global overview of the diversity, status and trends of animal genetic resources, and capacity to manage these resources at national, regional and global levels. National data and information systems for animal genetic resources are often underdeveloped.

Inventory, monitoring of trends and risks and characterisation should be strengthened and maintained to assist in determining conservation priorities and strategic breeding programmes. In certain cases — such as in armed conflicts, epidemics, droughts and other environmental emergencies — threats to animal genetic resources may be sudden and require a short response time. Country-based risk monitoring will greatly assist in setting up early warning systems and response mechanisms, at national, regional and global levels.

Action:

1. Conduct or complete inventories on the location, population status, trends and characteristics of animal genetic resources.

(Previously SP 1 Action 2 modified)

2. Expand characterisation and monitoring of trends in and risks to animal genetic resources.

(Previously SP 1 Action 3 modified)

3. Encourage the establishment of institutional responsibilities and infrastructure for monitoring of trends in animal genetic resources (for example population size and genetic diversity), including identification, registration and pedigree systems.

(Previously SP 4 Action 3 modified)

4. Promote participatory approaches to characterization, inventory and monitoring of trends and risks that foster collaboration among all stakeholders, including livestock keepers and researchers.

(Previously SP 3 Action 3 modified)

5. Undertake international cooperative monitoring of trends and risks, inventory and characterization activities among countries sharing transboundary breeds and similar production systems.

(Previously SP 4 Action 2 modified)

6. Strengthen global and regional information systems and networks for inventory, monitoring and characterisation. *Inter alia*, DAD-IS and the Global Databank for Animal Genetic Resources for Food and Agriculture should be strengthened to obtain, evaluate and condense information from the national databases and monitoring systems, and distribute this information, highlighting threats and needs.

(Previously SP 4 Action 1 modified)

7. Establish or strengthen existing breed endangerment early warning and response systems, through the further development of national, regional and global risk monitoring mechanisms, and the inclusion of early warning criteria in existing databases.

(Previously SP 3 Action 1/ SP 6 Action 2/SP 6 Action 3 consolidated)

Strategic Priority 2 **Develop international technical standards and protocols for characterisation, inventory, and monitoring of trends and risks**

(Previously SP 3)

Rationale: Cross-national inter-comparability of data is essential to be able to monitor trends in and risks to animal genetic resources at regional and global levels, in particular transboundary populations, and to set and revise conservation priorities, as well as identify key genetic resources for strategic breeding of such populations. This requires the development and use of standardized methods and protocols for characterisation, inventory, and monitoring of trends and risks. This will facilitate coordinated national reporting in relevant international forums. There is also a need to collaborate in characterization research, to enhance coordination of existing research, and to improve the distribution of the results of characterization studies. The development of international standards for characterization, inventory and monitoring of animal genetic resources should take into account existing relevant processes.

Action:

1. Develop agreement on a common set of criteria and indicators for animal genetic diversity, including means for assessing endangerment status, and methods to assess environmental, socio-economic and cultural factors related to animal genetic resources management.

(Previously SP 3 Action 1 modified)

2. Develop technical standards and protocols for phenotypic and molecular characterisation, including methods for the assessment of quantitative and qualitative production traits, nutrient utilization, functional traits and economic valuation. This makes possible the assessment of comparative breed performance in different production environments.

(Previously SP 3 Action 2)

3. Develop protocols for participatory monitoring of trends and risks, and characterization of local breeds managed by indigenous and local communities and livestock keepers.

(Previously SP 3 Action 3)

4. Strengthen research and development of methods for characterisation, and breed evaluation, valuation and comparison. Develop inter-operability protocols for information systems.

(Previously SP 3 Action 4)

STRATEGIC PRIORITY AREA 2: SUSTAINABLE USE AND DEVELOPMENT

Introduction

26. *[*The challenge to achieve food security for all is greater now than it has ever been. More efficient use of available resources, along with advanced technologies and improved management offer great scope for raising production and improving the producer's income, while avoiding the depletion of natural resources (including genetic resources) and reducing wastes and environmental pollution.

27. In most developed countries, and some developing countries, there has been extremely rapid progress in the development of breeding and production techniques for major food-supplying livestock species and breeds, over the past 50 years. Intense selection, and husbandry improvement, have resulted in increased meat, milk or egg output in production systems where ample quantities of high-quality feeds and other inputs are provided to specialized breeds, and where production stressors (such as unfavourable climate and disease) are mitigated by capital investment. The rapid progress made — with an average of two percent production increase annually — is proof of the potential of animal genetic resources to further contribute to food security and rural development. However, current development efforts focus primarily on short-term production, without a strategic assessment of the long-term and collateral consequences. The wider environmental impact of intensive production systems, and the within- and between-breed reduction of genetic diversity, are often ignored.

28. In many cases, developing countries, facing immediate needs to feed their populations, have focused investments and policies on high external input production systems using exotic breeds, rather than on establishing long-term genetic improvement schemes for local breeds. The use of exotic breeds is justified under proper management conditions in high external input production systems, especially near urban areas, where there is growing demand for animal products, and where input supply and services can be sustained. However, in rural contexts, farmers often face difficulties in securing the additional feed and other inputs that exotic breeds require. Moreover, imported breeds have often not reproduced or survived as well as local breeds. Increased attention must therefore be given to the sustainable use and development of local breeds in low and medium external input production systems. The option of maintaining or developing production systems in marginal environments, based on multiple-use animal genetic resources, needs to be addressed in depth.

29. Investment in developing local breeds of livestock will benefit small-scale, resource-poor pastoralists and farmers, and will often contribute to the development of the poorest regions of a country. However, a major obstacle to the further development of indigenous breeds is the lack of national strategies, programmes, and institutional infrastructure, to facilitate genetic and husbandry improvement programmes in low external input systems. Farmers' associations and breed societies do not exist in many developing countries, and pastoralists' and farmers' knowledge of modern breeding methods is often poor. National institutions and research facilities are needed to make animal husbandry and animal health care services, facilities and techniques available to all livestock keepers.

Long term goal

Enhanced sustainable use and development of animal genetic resources in all relevant production systems, as a key contribution to achieving food security and alleviating poverty.***]***

Strategic Priority 3 **Establish and strengthen national sustainable use policies**

(Previously SP 7)

Rationale: Most countries lack comprehensive policies to support the maintenance and development of animal genetic resources held within their territories. Sustainable use policies should balance food security goals and economic development with long-term sustainability and adaptation objectives. In addition, environmental and socio-economic changes, including demographic changes, climate change and desertification, require adaptive medium- and long-term policies and strategies for the management of animal genetic resources. These policies should also consider the contributions of livestock keepers, professional breeders and other actors to animal genetic diversity, respect the interests, rights and obligations of stakeholders, and take into account exchange, access, and the fair and equitable sharing of the benefits from animal genetic resources.

Sustainable use policies should also include consideration of broad genetic variability between and within breeds which is essential for the present and future livestock production. One perspective is to maintain a broad diversity of breeds within economic production systems. The sustainable animal production should be responsive to differing domestic and export market demands while matching genotypes to production systems. Most countries are aiming to satisfy domestic consumption, while others are also seeking to derive export income from animal production. These objectives should be considered when sustainable genetic improvement programmes are developed and evaluated. Flexible breeding strategies, including selection and crossbreeding should be utilised to promote the sustainable development and profitability of livestock sectors. The breeding strategies need to be adaptable to respond to production opportunities and technology.

Action:

1. Review existing national policies on sustainable use to assess their impacts on animal genetic resource management.

(Previously SP 7 Action 1)

2. Develop, as necessary, national policies that incorporate the contribution of animal genetic resources to sustainable use, which may include setting strategic objectives for breeding and sustainable use; conducting economic and cultural valuation of

animal genetic resources; and developing approaches to support wide access to, and the fair and equitable sharing of benefits arising from the use of animal genetic resources.

(Previously SP 7 Action 2 modified)

Strategic Priority 4 **Establish national species and breed development strategies and programmes**

(Previously SP 8)

Rationale: The development and implementation of breeding strategies and programmes to meet foreseeable economic needs and markets are required for all breeds. Breeding organisations and recording schemes are highly beneficial in achieving breeding objectives and are crucial for breed development strategies, but are often lacking. Breeding goals should be regularly assessed and take into account the impact of selection on genetic diversity.

Action:

1. Develop long-term planning and strategic breeding programmes and consider a number of elements, including: efforts to improve under-utilised breeds, especially within low to medium external input production systems; assessments of the impact of exotic animal breeds and the development of measures for producers to realize positive impacts and prevent negative impacts; training and technical support for the breeding activities of pastoralist and farming communities; and the integration of improved husbandry practices in animal genetic resources development programmes.

(Previously SP 8 Action 2 modified)

2. Assess breed development programmes and revise, as appropriate, with the aim of meeting foreseeable economic needs and market demands.

(Previously SP 8 Action 3 modified)

3. Establish or strengthen breeding organisations and recording systems.

(Previously SP 8 Action 4 modified)

4. Incorporate consideration of the impact of selection on genetic diversity into breeding programmes and develop approaches to maintain the desired variability.

(Previously SP 8 Action 5 modified)

5. Establish or strengthen recording schemes to monitor changes in non-production traits (e.g. health, welfare) and adjust breeding goals accordingly.

(Previously SP 8 Action 6 modified)

6. Encourage the development of back-up collections of frozen semen and embryos from current breeding schemes to ensure genetic variability.

(Previously SP 8 Action 7 modified)

7. Provide information to farmers and livestock keepers to assist in facilitating access to animal genetic resources from various sources.

(New action)

Strategic Priority 5 **Promote agro-ecosystems approaches to the management of animal genetic resources**

(Previously SP 9)

Rationale: Agro-ecosystems depend on human management practices, knowledge systems, cultural norms, values and beliefs, as well as social relationships and livelihood strategies. In some production systems the management of animal genetic resources, particularly by indigenous and local communities, takes place in close relationship with the management of crops, pasture and other biological resources, and land and water management in productive landscapes. Management decisions and policies on the sustainable use of animal genetic resources should be based on an understanding of human environments and livelihoods, and efforts to achieve food security and environmental objectives. Rapid intensification of production is driven by a number of factors. Inadequate planning of intensive animal production can lead to negative ecological impacts, such as soil and vegetation degradation, water and marine pollution, and the unsustainable use and conversion of rangelands.

Action:

1. Assess environmental and socio-economic trends that may require a medium and long-term revision in animal genetic resources management.

(Previously SP 8 Action 1)

2. Integrate agro-ecosystem approaches in national agricultural and environmental policies and programmes of relevance to animal genetic resources, where appropriate, particularly those directed towards pastoralist and rural small-holder communities, and fragile environments.

(Previously SP 9 Action 1)

3. Establish networks to enhance interaction among the main stakeholders, scientific disciplines and sectors involved.

(Previously SP 9 Action 2)

Strategic Priority 6 **Support indigenous and local production systems and associated knowledge systems, of importance to the maintenance and sustainable use of animal genetic resources**

(Previously SP 10)

Rationale: Over millennia, animal species and breeds have been domesticated, developed and maintained for human use. These resources have co-evolved with the social, economic and cultural knowledge and management practices. The historic contribution of indigenous and local communities to animal genetic diversity, and the knowledge systems that manage these resources, need to be recognised, and their continuity supported. Today, the adaptive animal genetic resources management strategies of these communities continue to have economic, social and cultural significance, and to be highly relevant to food security in many rural subsistence societies, particularly, though not exclusively, in drylands and mountainous regions. Measures to support such systems should take their specific ecological and socio-economic and cultural features into consideration.

Action:

1. Assess the value and importance of indigenous and local production systems, and identify trends and drivers of change that may affect the genetic base, and the resilience and sustainability of the production systems.

(Previously SP 10 Action 1)

2. Support indigenous and local livestock systems of importance to animal genetic resources, including through the removal of factors contributing to genetic erosion. Support may include the provision of veterinary and extension services, delivery of micro-credit for women in rural areas, appropriate access to natural resources and to the market, resolving land tenure issues, the recognition of cultural practices and values, and adding value to their specialist products.

(Previously SP 10 Action 2 modified)

3. Promote and enable relevant exchange and dialogue between indigenous and rural communities and scientists and government officials, in order to integrate traditional knowledge with scientific approaches.

(Previously SP 10 Action 3)

STRATEGIC PRIORITY AREA 3: CONSERVATION

Introduction

30. *[*The erosion of animal genetic resources is a long-term threat to ensuring food security and rural development. According to *The State of the World's Animal Genetic Resources*, 20 percent of all breeds with reported population data are at risk of extinction, however, the population status of many breeds is still unknown, and the problem may thus be underestimated. Most developing countries and some developed countries do not currently have animal genetic resources conservation strategies or policies in place. Without strategically planned interventions, using both *in situ* and *ex situ* conservation, erosion will continue and may accelerate.

31. The main underlying factors that result in the loss of animal genetic resources are:

- In developed countries: the focus is on a few high-output breeds.
- In developing countries: the transformation of traditional systems into external input-oriented systems, often by using exotic animal genetic resources that displace local breeds. The indiscriminate cross-breeding with exotic breeds is also rapidly compromising the genetic integrity of local populations.

32. Loss of local breeds will cause cultural erosion and diminish the ability of communities to maintain their cultures and livelihoods. Structural changes in the livestock sector may result in a situation where the previous keepers of a breed are no longer in a position to maintain it: in such circumstances, other ways need to be identified to preserve the breed, as part of the global heritage of animal genetic resources.

33. Loss of animal genetic resources reduces opportunities to develop rural economies in all countries. It may also have negative social and cultural impacts, given the long history of domestication and the resulting incorporation of domestic animals into community culture. Replacement of indigenous breeds could result in the loss of products and services preferred by local people, and the conservation of local breeds must therefore be considered within the broader context of sustaining rural communities and their existing economic foundations. Moreover, such

losses now may limit future development options, based on animal products and services from specific breeds, that otherwise could have added considerable economic value, as consumer demands become more varied.

34. The loss of local breeds may have negative environmental impacts in some production environments, especially in drylands and mountainous areas. Many Country Reports indicated the importance of local breeds in contributing to landscape management, vegetation control, and rangeland ecosystem sustainability, preventing the erosion of associated biodiversity.

35. Many breeds at risk are in developing countries, which have limited capacity and resources for designing and implementing conservation programmes. These breeds often possess unique genetic traits that enable their survival in a diverse range of production environments with intense stresses, such as disease and drought.

36. Appropriate conservation measures should ensure that farmers and researchers have access to a diverse gene pool for further breeding. This genetic diversity provides an essential resource to cope with the impacts of climate change, pest and disease outbreaks, and new and growing consumer demands. Strategic and considered investment in the conservation of animal genetic resources is of critical importance and international collaboration is essential to halt the serious decline of these resources.

37. The capacity for *ex situ* conservation varies significantly among countries, but *ex situ* conservation efforts generally for animal genetic resources, lag far behind similar efforts for plant genetic resources. The storage of genetic material for breeding purposes is common for commercial breeds. However, for local animal breeds in developing countries, the collection and storage of animal genetic material has not been adequate. In such cases, it is important to support planned and targeted collecting of animal genetic resources, and to expand *ex situ* conservation activities.

38. Emergency situations for farm animals are caused by a variety of factors such as disease, natural disaster, armed conflict and economic crises. There is significant variation in the preparedness of countries to respond to emergency situations. A lack of financial resources is the main constraint to establishing effective and consistent monitoring and emergency response mechanisms, and in assisting farmers after disaster situations to restore agricultural systems.

Long term goal

Secure the diversity and integrity of the genetic base of animal genetic resources by better implementing and harmonising measures to conserve these resources, both *ex situ* and *in situ*, including in the context of emergencies and disasters.***]***

Strategic Priority 7	**Establish national conservation policies**
(Previously SP 13)	***Rationale:*** Countries have a responsibility to conserve their animal genetic resources, however, most countries lack comprehensive policies. Such policies should serve to ensure the maintenance of animal genetic resources with direct values for human use, including production, ecological, social and cultural values, as well as option values for future use and adaptation. Production and functional traits, and national capacity, should be taken into consideration in setting conservation priorities. The erosion of animal genetic resources has complex drivers and cannot be halted by one simple solution. A combination of *in situ* and *ex situ* conservation measures is necessary. [It is national responsibility to determine and assign breed endangerment status, however that should not be used to justify trade-distorting incentives. {FOC}]

Action:

1. Set and regularly review conservation priorities and goals.

(Previously SP 13 Action 1)

2. Assess factors leading to the erosion of animal genetic resources and formulate appropriate policy responses. Establish or strengthen information systems on animal breeding approaches as well as on different gene banks, as they affect animal genetic diversity, in order to enable breeders and countries to make appropriate choices in their improvement programmes.

(Previously SP 13 Action 2 modified)

3. Establish institutional structures and policies, as appropriate, including specific measures to conserve breeds at risk of extinction, and to prevent breeds from becoming at risk. A combination of *in situ* and *ex situ* measures is necessary.

(Previously SP 13 Action 3)

4. Provide and catalyze [non-trade-distorting] incentives for producers and consumers to support conservation of animal genetic resources [at risk {FOC}].

(Previously SP 13 Action 4)

Strategic Priority 8

(Previously SP 14)

Establish or strengthen in situ conservation programmes

Rationale: *In situ* conservation measures allow for the maintenance and adaptive management of animal genetic resources in productive landscapes. *In situ* measures facilitate continued co-evolution in diverse environments, and avoid stagnation of the genetic stock. *In situ* conservation measures are best based on agro-ecosystem approaches and, ideally, should be established through economically profitable and socially beneficial sustainable use. However, in some instances this can only be achieved after initial investments in creating markets and in product development. [In cases where this is not possible, direct support, including non-trade distorting direct payment for the *in situ* conservation of animal genetic resources as well as agro-environmental services may be necessary.]

Action:

1. Set and regularly review *in situ* conservation priorities and goals.

(Previously SP 14 Action 1)

2. Encourage the development and implementation of national and regional *in situ* conservation programmes for breeds and populations that are at risk. This may include [non-trade-distorting] [support, either directly for breeders of threatened breeds, or] measures to support agricultural production systems that manage areas of importance to breeds at risk, the encouragement of breed organizations, community-based conservation organisations, non-governmental organizations and other actors to participate in conservation efforts.

(Previously SP 14 Action 2)

3. Promote policies and means to achieve the sustainable use of a diversity of local breeds, without the need for support from public funds or extra funding, through *in situ* conservation.

(Previously SP 7 Action 3 modified)

Strategic Priority 9 **Establish or strengthen ex situ conservation programmes**

(Previously SP 15)

Rationale: *Ex situ* conservation measures provide back-up insurance against losses of animal genetic resources in the field, either through erosion or as a result of emergencies. *Ex situ* measures are complementary to *in situ* measures, and should be linked, where appropriate. *Ex situ* collections can also play an active role in strategic breeding programmes.

Action:

1. Set and regularly review *ex situ* conservation priorities and goals.

(Previously SP 15 Action 1)

2. Establish or strengthen national and regional facilities for *ex situ* conservation, in particular cryogenic storage. Support the efforts of countries within a region that have opted to establish a regional facility.

(Previously SP 15 Action 1 bis modified)

3. Establish modalities to facilitate use of genetic material stored in *ex situ* gene banks [, while respecting [intellectual] property rights].

(Previously SP 15 Action 2)

4. Develop and implement measures to secure *ex situ* collections from loss of genetic diversity resulting from disease outbreaks and other threats, in particular by establishing back-up samples.

(Previously SP 15 Action 3/SP 15 Action 3 ter Modified)

5. Identify and fill gaps in *ex situ* collections.

(Previously SP 15 Action 3 bis)

6. Develop procedures for replenishment of genetic material taken from gene banks, by systematically developing links with live populations, or establishing in vivo populations of breeds at risk at off-farm locations, such as zoos and parks.

(Previously SP 15 Action 4)

Strategic Priority 10 **Develop and implement regional and global long term conservation strategies**

(Previously SP 18)

Rationale: There are considerable numbers of regional and international transboundary breeds. Collaboration for *in situ* conservation is desirable for regional transboundary breeds and for transhumant livestock populations held by pastoralist communities that cross national boundaries. To ensure the highest efficiency and cost-saving in implementing *ex situ* conservation measures, regional and global strategies and facilities may be preferred over the duplication of national efforts, providing that modalities are developed for sharing facilities among countries and that the

conservation policy remain part of national sovereignty. In the medium and long-term, and taking into account likely environmental and socio-economic change, as well as disasters and emergencies, it is likely that international interdependence with regard to animal genetic resources will increase. This provides further cause to the international community to collaborate on conservation measures, for local, regional and international transboundary breeds, under fair and equitable arrangements for storage, access and use of animal genetic resources. Regional and global cooperation should be based on national efforts, but should not replace them.

Action:

1. Assist countries to develop and implement conservation plans for breeds and populations, particularly transboundary breeds and populations, combining *in situ* and *ex situ* measures.

(Previously SP 18 Action 1)

2. Establish integrated support arrangements to protect breeds and populations at risk from emergency or other disaster scenarios, and to enable restocking after emergencies, in line with the national policy.

(Previously SP 18 Action 2)

3. Establish regional and global networks of gene banks for animal genetic resources and harmonize approaches to conservation in gene banks and to facilitating exchange.

(Previously SP 18 Action 3/ Previously SP 18 Action 5 combined)

4. Facilitate the establishment of core collections of animal genetic diversity, at the appropriate regional or species level.

(Previously SP 18 Action 4 modified)

Strategic Priority 11

(Previously SP 19)

Develop approaches and technical standards for conservation

Rationale: *In situ* and *ex situ* conservation methods for animal genetic resources are still under development. Particularly in the area of *ex situ* conservation, there is a considerable need for standardised methods and technologies.

Action:

1. Undertake research to develop *in situ* and *ex situ* methods and technologies, including for conservation breeding. Elaborate standardized methods and guidelines for their use, where necessary.

(Previously SP 19 Action 1 modified)

2. Disseminate knowledge, technologies and best practices.

(Previously SP 19 Action 2)

3. Promote the use of genetic indicators to complement phenotypic characterization as a basis to make decisions on conserving animal genetic resources.

(Previously SP 19 Action 3 modified)

4. Review the impact of zoosanitary standards on the conservation of animal genetic resources and in particular their accessibility.

(Previously SP 19 Action 4 modified)

STRATEGIC PRIORITY AREA 4: POLICIES, INSTITUTIONS AND CAPACITY BUILDING

Introduction

39. *[*In many cases, national policies and regulatory frameworks for animal genetic resources are still partial and ineffective. Policy and legislative development is required to address the dynamics that are shaping the sector, and deal with increasingly complex emerging issues, such as an increasing focus on consumer affairs, food safety and food standards, response to diseases (animal diseases proper and animal diseases that can pass to humans), the humane treatment of animals, increasingly sophisticated biotechnology, as well as the assessment and mitigation of the environmental impacts of livestock operations. A further area that requires development is the framework for the exchange of animal genetic resources among countries, including the trade and animal health regulations that affect such exchange. Policy development should take into account the increasing role of intellectual property rights in the sector, and the need to secure fair and equitable benefit-sharing, the rights of indigenous and local communities, particularly pastoralists, and the role of their knowledge systems.

40. In developing countries an increasing demand for animal production is driving rapid structural change in the livestock sector. Without proper management, including spatial and physical planning aspects as cities expand into previously agricultural lands, there will be major risks for human health and the sustainability of production. Social and economic policies need to aim at ensuring equity for rural populations in the process of change, so that they are enabled to build up, in a sustainable way, their productive capacity to supply goods and services of increasing quantity and quality to expanding national economies, and meet growing consumer demands. In a time of rapid change and growing privatization, national planning will also need to ensure the long-term supply of public goods, such as public health, biodiversity maintenance, and clean air and secure water supplies. There will inevitably be trade-offs between different national policy goals. The management of animal genetic resources will need to be balanced with the other goals, and short- and long-term policies are required for the sector, in the larger cross-sectorial planning framework.

41. In developing countries, in particular a lack of trained personnel – both in terms of numbers and in terms of skills to address animal genetic resources management in a time of rapid social and economic change – is a major impediment to developing and implementing animal genetic resources policies, strategies, programmes and projects. Education and training in order to build sustainable capacity in all priority areas is required.

42. Research at national and international levels in all aspects of animal genetic resources management needs to be strengthened. The role of the National Agricultural Research Systems (NARS) and their support by the CGIAR system is crucial in this context.

43. Facing these major challenges, will require the development of a strong and diverse skills base. In many developing countries, in particular, a lack of human capacity and financial resources is a major obstacle to developing the necessary institutions, and planning and implementing a strategic approach to using, developing and conserving animal genetic resources. For this reason, and in order to achieve sustainable use, development and conservation of their animal genetic resources, many countries will need to devote particular attention to establishing and building up the relevant institutions, to adopting and implementing appropriate policies and effective regulatory frameworks, and to building the human capacity they need.

44. National Focal Points for animal genetic resources – established in the context of the Global Strategy – are a key institutional element through which to build and maintain networks for the management of animal genetic resources. Most countries have established a National

Focal Point for animal genetic resources. Serious human and financial resources constrains have made their establishment difficult, and threatened their continuity. Cooperation between countries is needed to set up Regional Focal Points and develop regional networks.

45. Networks are important in linking stakeholders, and in supporting institutional development and capacity-building. In some countries, where they are well developed, they draw upon the support of active non-governmental organizations, such as breeders' associations, which design, plan and implement animal genetic resources programmes and action plans.

46. In addition to developing national planning capacity, popular awareness of the importance of animal genetic resources needs to be developed, in order to promote investments in developing national animal genetic resources. In many instances to date, livestock development has focused on the deployment of exotic breeds, rather than the development and conservation of local breeds. Consumers will need to understand and support efforts to conserve and use the local breeds, rather than over-reliance on transboundary breeds. In many developed countries, the share of high-value products, linking back to specific breeds, is contributing to the maintenance of animal diversity. Cultural identity in developing countries, often expressed in food preferences, can be the basis for a growing awareness of the value of diverse breeds, and underwrite long-term economic development, including for small farmers and currently marginal communities.

47. Awareness-building at the international level will also be a key factor in mobilizing popular support and international collaboration for the implementation of the *Global Plan of Action for Animal Genetic Resources*.

Long term goal

Established cross-cutting policies and legal frameworks, and strong institutional and human capacities to achieve the successful medium- and long-term planning for livestock sector development, and the implementation of national programmes for the long-term sustainable use, development and conservation of animal genetic resources.*]*

Strategic Priority 12 **Establish or strengthen national institutions, including national focal points, for planning and implementing animal genetic resources measures, for livestock sector development**

(Previously SP 21)

Rationale: Increasingly complex issues are emerging within the livestock sector that require balancing of the interests of a variety of stakeholders, and the active promotion of the generation of public goods that may otherwise cease to be produced in a time of rapid and unregulated change. Consumer affairs, human health matters and the management of new biotechnologies, as well as physical and spatial planning of animal production in the context of urban expansion and protected areas, need to be integrated into national planning in a holistic manner.

Action:

1. Analyse national institutional capacity in support of holistic planning of the livestock sector.

(Previously SP 21 Action 1 modified)

2. Establish or strengthen fully functional National Focal Points for animal genetic resources.

(Previously SP 21 Action 4)

3. Develop strong national co-ordination between the national focal point and stakeholders involved in animal genetic resources,

such as the breeding industry, government agencies, civil society organisations, and networks and advisory committees.

(Previously SP 21 Action 5 modified)

4. Develop intervention tools, as appropriate, for national planners to shape the future development of the livestock sector in accordance with national priorities, including in relation to the deployment of animal genetic resources, and the effects of animal production systems on the environment.

(Previously SP 21 Action 2)

5. Promote coordination and synergy between the different authorities dealing with various aspects of planning, within and across ministries, as well as with other actors, including research and education, civil society and private stakeholders, and ensure participation of key stakeholders in the process.

(Previously SP 21 Action 3)

Strategic Priority 13 **Establish or strengthen national educational and research facilities**

(Previously SP 22)

Rationale: Research and education needs strengthening in all areas of management of animal genetic resources. Establishing, strengthening and maintaining research and education institutions is key to building national capacities to plan and implement priority activities for the characterization, inventory and monitoring of risks and trends; sustainable use and development; and conservation of animal genetic resources.

Action:

1. Identify the short, medium and long-term needs for research and education, and promote the formation of the relevant cadres of experts, nationally, or through international training.

(Previously SP 22 Action 1 modified)

2. Review national research and education capacities, in relevant fields, and establish targets for training to build the national skill base.

(Previously SP 22 Action 2 modified)

3. Establish or strengthen, in partnership with other countries, as appropriate, relevant research, training and extension institutions, including national and regional agricultural research systems, to support efforts to use, characterize, inventory and monitor trends and risks, sustainably use and develop, and conserve animal genetic resources.

(Previously SP 22 Action 3 modified)

Strategic Priority 14 **Strengthen national human capacity for characterization, inventory, and monitoring of trends and risks, for sustainable use and development, and for conservation.**

(Previously SP 2 / SP 11 / SP 16 merged and modified)

Rationale: Many countries have inadequate human capacity to:

- undertake systematic characterisation, inventory, and monitoring activities of trends and risks to underpin policy decisions;
- strategically plan, develop and implement policies and programmes for sustainable use and development; and
- strategically plan, develop and implement policies and programmes for the *in situ* and *ex situ* conservation of animal genetic resources.

Training, as well as exchange of information and experience within and between countries and regions would be beneficial.

Action:

1. Establish or strengthen training and technology transfer programmes, and information systems for the inventory, characterisation and monitoring of trends and risks; sustainable use and development; and conservation, particularly in developing countries and countries with economies in transition.

(Previously SP 2 /SP 11 /SP 16 Action 1 modified)

2. Establish or strengthen collaborative networks of researchers, breeders and conservation organizations, and other public, civil and private actors, within and between countries, for information and knowledge exchange for sustainable use, breeding and conservation.

(Previously SP 2 /SP 11/ SP 16 Action 2 modified)

3. Establish or strengthen community based organizations, networks and initiatives for sustainable use, breeding and conservation.

(Previously SP 11 Action 3 modified)

Strategic Priority 15

(Previously SP 26)

Establish or strengthen international information sharing, research and education

Rationale: Established international research and education institutions, including in the CGIAR system, provide major public goods through research and capacity-building, as well as through information systems, of relevance to animal genetic resources. FAO, through its technical programmes, also contributes actively to this work.

Action:

1. Establish or strengthen international research and education, in particular to assist developing countries and countries with economies in transition to better use and develop animal genetic resources.

(Previously SP 26 Action 1)

2. Continue to develop the FAO Domestic Animal Diversity Information System (DAD-IS), as a global communication tool and clearing-house mechanism for animal genetic resources.

(Previously SP 26 Action 2)

3. Develop means for reporting on the status and trends of national animal genetic resources that may also assist governments in

relevant reporting in other international forums, to reduce the overall reporting burden.

(Previously SP 26 Action 3 modified)

4. Encourage the development of national databases to strengthen information sharing among countries.

(Previously SP 26 Action 4 modified)

Strategic Priority 16 **Strengthen international cooperation to build capacities in developing countries and countries with economies in transition, for:**

- **characterisation, inventory, and monitoring of trends and risks;**
- **sustainable use and development; and**
- **conservation of animal genetic resources.**

(Previous SP 5 / SP 12 / SP 17 merged and modified)

Rationale: There are significant differences within and between regions in national human, institutional, technological and research capacities for inventory, characterization and monitoring of trends and risks; sustainable use and development; and conservation - both *in situ* and *ex situ* - of animal genetic resources. Developing countries and countries with economies in transition will greatly benefit from information exchange and collaboration with countries with comparative advantages in these areas. International action is particularly required for endangered breeds and for transboundary breeds, which may have a narrow genetic base.

Action:

1. Strengthen technical cooperation and establish facilities for technology transfer and exchange of experience, and enhance educational and other training opportunities, between countries.

(Previously SP 5 Action 1 & 2/ SP 12 Action 2/ SP 17 Action 1 modified)

2. Establish or strengthen international collaboration in the characterization, use and development, and conservation of transboundary breeds.

(Previously SP 12 Action 1 & 2 modified)

Strategic Priority 17 **Establish Regional Focal Points and strengthen international networks**

(Previously SP 27)

Rationale: The management of transboundary breeds and populations, as well as specific regional socio-economic, cultural and environmental characteristics, provide a rationale for co-ordination and collaboration at the regional level. Investment in joint activities (such as gene banking) may often be more efficient and cost-effective than the multiplication of overlapping national activities.

Action:

1. Support the establishment of country-driven Regional Focal Points for animal genetic resources, where appropriate.

(Previously SP 27 Action 1)

2. Establish or strengthen and maintain regional networks for the use, development and conservation of animal genetic resources.

(Previously SP 27 Action 2)

3. Link regional activities on animal genetic resources to regional organisations.

(Previously SP 27 Action 3)

4. Maintain and strengthen the Global Focal Point to promote international networking and collaboration.

(Previously SP 27 Action 4)

Strategic Priority 18 **Raise national awareness of the roles and values of animal genetic resources**

(Previously SP 23)

Rationale: Within the livestock sector and in other sectors affecting the livestock sector, including environmental and broader agricultural and development policies and practices, there is a considerable need to raise awareness of the important roles and values of animal genetic resources. This includes their specific characteristics, the products and services derived from local breeds and the factors impacting their maintenance and use. Such national awareness building should draw attention to the specific features of the livestock sector, and should seek to mobilize support for public and private initiatives for the sustainable use, development and conservation of animal genetic resources.

Action:

1. Provide targeted, effective information through media, public events and other means to raise awareness about the important roles and values of animal genetic resources. This should address their specific characteristics and the subsequent special policy needs for their sustainable use, development and conservation, including the contribution and needs of livestock keeping communities. Target audiences include policy makers, all major stakeholders within the livestock sector and related sectors, and the general public.

(Previously SP 23 Action 1 modified)

Strategic Priority 19 **Raise regional and international awareness of the roles and values of animal genetic resources**

(Previously SP 28)

Rationale: There is a need to raise awareness – including within environmental and broader agricultural and development institutions and forums, and among other stakeholders, such as donors and civil society – of the important roles and values of animal genetic resources, their specific characteristics and the consequent needs for sustainable use, development and conservation.

Action:

1. Support regional and international campaigns to raise awareness of the status of animal genetic resources for food and agriculture, and seek to develop wide support at government and institutional levels, as well as among the general public.

(Previously SP 28 Action 1)

Strategic Priority 20 **Review and develop national policies and legal frameworks for animal genetic resources**

(SP 20 Remains as SP 20)

Rationale: A range of policies and legal instruments have direct or indirect effects on the use, development and conservation of animal genetic resources. These often pursue different objectives, such as economic development, environmental protection, animal health, food safety, consumer protection, intellectual property rights, genetic resource conservation, and access to and equitable sharing of benefits arising from the use of animal genetic resources. Enhanced coherence between these instruments and policies is needed, without compromising their objectives, or the key objective of food security, and taking into account the distinctive features of animal genetic resources that need distinctive solutions. Trade and health regulations, intellectual property considerations, and means for access and benefit-sharing, all need to be taken into account.

Action:

1. Periodically review existing national policies and regulatory frameworks, with a view to identifying any possible effects they may have for the use, development and conservation of animal genetic resources, especially with regard to the contribution and needs of local communities keeping livestock.

(Previously SP 20 Action 1 modified)

2. Consider measures to address any effects identified in reviews of policy and legal frameworks. Measures may include policy or legislative changes, or adjustments at the level of implementation, taking into account the need to balance the goals and objectives of the relevant legal instruments and policies, and the interests of different stakeholders.

(Previously SP 20 Action 2 modified)

3. Encourage consistency of national law and policies concerning animal genetic resources with relevant international agreements, as appropriate.

(Previously SP 20 Action 3 modified)

Strategic Priority 21 **Review and develop international policies and regulatory frameworks**

(Previously SP 24)

Rationale: International policies and regulatory agreements may directly or indirectly affect the use of animal genetic resources for food and agriculture. The dominant policies and frameworks that affect the development of the animal genetic resources sector are often general, and deal with such matters as economic development, trade standards, environmental protection, food safety, access and benefit-sharing and intellectual property. Sector-specific international agreements include animal health standards and food standards for animal products. It is important to ensure coherence of national policies and frameworks with international instruments to which countries are parties, which impact upon their ability to exchange, use and conserve animal genetic resources, and trade in animal products.

Action:

1. Review existing international agreements that impact upon the use, development and conservation of animal genetic resources, with a view to ensuring that the international policies and regulatory frameworks take into account the special importance of animal genetic resources for food and agriculture for food security, the distinctive features of these resources needing distinctive solutions, the importance of science and innovation, and the needs to balance the goals and objectives of the various agreements, as well as the interests of regions, countries and stakeholders.

(Previously SP 24 Action 1 modified)

2. Review the implications and impacts of international agreements and developments relevant to access to animal genetic resources and sharing the benefits of their use, [including intellectual property rights,] upon animal genetic resources stakeholders, especially livestock keepers.

(New - combines aspects of previous SP 24 Actions 2 & 3)

Strategic Priority 22 **Coordinate the Commission's efforts on Animal Genetic Resources Policy with other International Forums**

(Previously SP 25)

Rationale: The Commission on Genetic Resources for Food and Agriculture is FAO's standing inter-governmental forum where countries discuss policies and sectorial and cross-sectorial matters related to the conservation and sustainable use of genetic resources for food and agriculture. Other international organisations and forums regularly discuss issues and develop policy and regulatory measures that directly or indirectly affect the management of animal genetic resources and the roles and interests of the various stakeholders in the livestock sector. Such forums include the CBD, WIPO, WTO, OIE, and Codex Alimentarius. There is a need to enhance synergy and harmony between such processes.

Action:

1. Develop cooperation with and strengthen the involvement and contributions of international organizations and forums in supporting the work of the Commission on Genetic Resources for Food and Agriculture on animal genetic resources.

(Previously SP 25 Action 1 modified)

[Strategic Priority 23 **Strengthen efforts to mobilize resources, [including financing], for the conservation, sustainable use and development of animal genetic resources**

(Previously SP 29)

Rationale: Global efforts to mobilize resources for the conservation, sustainable use and development of animal genetic resources, both nationally and internationally, fall far short of the needs [, and of the level of resources devoted to general biodiversity conservation, or to plant genetic resources for food and agriculture]. The success of the [*Global Plan of Action for Animal Genetic Resources*] will depend on the [increased] mobilization of resources, in line with needs identified [, in balance with other priorities].

Action:

1. Enhance efforts to assist stakeholders [and government] in the design of programmes and policies for the conservation, sustainable use and development of animal genetic resources, [able to secure adequate] [with the aim of securing adequate] funding, particularly for developing countries and countries with economies in transition.

(Previously SP 29 Action 1)

2. [Ensure sustained commitments to the relevant international institutions.]

(Previously SP 29 Action 2)

3. Develop a Follow-up Mechanism or Follow-up Mechanisms for the implementation of the [*Global Plan of Action for Animal Genetic Resources*] [, within the existing structure provided by the Global Focal Point].

(Previously SP 29 Action 3 modified)

4. [Mobilize resources and obtain financial commitments to support] [Help put in place to support] *ex situ* backup systems to protect against the risk of emergency or disaster scenarios.

(Previously SP 17 Action 2)

5. Strengthen financial cooperation and establish facilities for technology transfer and exchange of experience, and enhance educational and other training opportunities, between countries.

(Previously SP 5 / SP 12 / SP 17 Action 1 modified)

6. [Ensure coordination at national and regional levels among donors on animal genetic resources.]***]***

(Previously SP 25 Action 2)

Appendix 2

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NB: Tunisia is a member of the Friends of the Chair's group, but unfortunately the representative was unable to attend the meeting

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