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COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

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Eighteenth Regular Session

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REVIEW OF IMPLEMENTATION OF THE GLOBAL PLAN OF ACTION FOR ANIMAL GENETIC RESOURCES

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I. INTRODUCTION

1. The Commission on Genetic Resources for Food and Agriculture (Commission), at its Seventeenth Regular Session, called upon countries to continue implementing the Global Plan of Action for Animal Genetic Resources (Global Plan of Action), in order to contribute to global food security and sustainable rural development and, in particular, to the achievement of Sustainable Development Goals (SDG) 2 and 15; it requested FAO to strengthen partnerships with stakeholders and donors to continue technical and policy support for country implementation of the Global Plan of Action.[1]

2. This document provides a brief report on the status of implementation of the Global Plan of Action. It also summarizes FAO activities since the Commission's Seventeenth Regular Session, grouping them according to their relevance to the four strategic priority areas of the Global Plan of Action. In addition, the document summarizes FAO's collaboration with other stakeholders and reports on the status of funding for implementation of the Global Plan of Action. More detailed information is provided in the document *Detailed FAO progress report on the implementation of the Global Plan of Action for Animal Genetic Resources*.[2]

II. STATUS OF IMPLEMENTATION OF THE GLOBAL PLAN OF ACTION FOR ANIMAL GENETIC RESOURCES

3. The Commission, at its Twelfth Regular Session, agreed to assess the status of implementation of the Global Plan of Action through process and resource indicators.[3] With respect to the process indicators, countries, regions and international organizations report on activities initiated to implement the Global Plan of Action. The Commission's Multi-Year Programme of Work (2019–2027)[4] calls for a "Review of implementation of the Global Plan of Action for Animal Genetic Resources" to be presented at its Eighteenth Regular Session.

4. Reviews of implementation of the Global Plan of Action have been undertaken in the past, resulting in the *Synthesis Progress Report on the implementation of the Global Plan of Action for Animal Genetic Resources – 2012*[5] and *2014*[6] (Synthesis Report). At its Seventeenth Regular Session, the Commission endorsed the procedure of following the reporting format that was used for the preparation of the previous Synthesis Reports to undertake a new review of progress in the implementation of the Global Plan of Action and invited countries to submit country progress reports in a timely manner.[7]

5. This section provides a brief summary of the country progress reports, as well as reports received from regions and international organizations. More detail is provided in the document *Synthesis Progress Report on the implementation of the Global Plan of Action for Animal Genetic Resources – 2020*.[8] The section also provides some recent evidence of the policy impact of the Global Plan of Action at country levels.

6. For the resource indicators, countries use DAD-IS to report information regarding the status of their national breed populations. Details are provided in the document *Status and trends of animal genetic resources – 2020*.[9]

[1] CGRFA-17/19/Report, paragraph 86.
[2] CGRFA/WG-AnGR-11/21/Inf.2.
[3] CGRFA-12/09/Report, paragraph 38, 39.
[4] CGRFA-17/19/*Appendix F*, Annex 1.
[5] CGRFA-14/13/Inf.15.
[6] CGRFA-15/15/Inf.19.
[7] CGRFA-17/19/Report, paragraph 85.
[8] CGRFA-18/21/10.2/Inf.5.
[9] CGRFA-18/21/10.2/Inf.6.

A. Progress reporting by countries, regions and international organizations

7. In response to the Commission's request,[10] FAO, through a Circular State Letter (CSL C/AGA-5 of 4 March 2019) invited countries to submit progress reports on the implementation of the Global Plan of Action by 31 July 2019. Relevant intergovernmental and international non-governmental organizations were also invited to participate in the reporting process. By the end of 2019, FAO had received 104 country progress reports,[11] 4 regional progress reports[12] and 14 reports from international organizations,[13] demonstrating a high level of interest in the implementation and reporting process.

8. Most of the countries providing progress reports have continued to strengthen their activities in the various strategic priority areas of the Global Plan of Action. The overall level of implementation varied substantially among both countries and regions, however. Implementation was generally reported to be at a high level in Europe and the Caucasus and in North America; at a medium level in Africa, Asia, and Latin America and the Caribbean; and at a low level in the Near and Middle East and Southwest Pacific regions. Interpretation of general regional differences is somewhat difficult, however, because reports were not received from all countries in all regions. Countries that did not report may have lower levels of implementation than those that did. Variability was observed within regions, and certain individual countries from all developing regions had high indicator scores for some of the strategic priorities of the Global Plan of Action. Likewise, some countries in regions with high economic development have low indicator scores for some strategic priorities. Within regions, the level of implementation for specific countries or subregions appeared to be somewhat associated with the relative level of economic development and of the livestock sector. For example, implementation tended to be higher in southern Africa than in the rest of the continent. In South America, the greatest implementation was reported in Brazil.

9. The questionnaire, and the associated system of indicators, included sections for each of the four strategic priority areas of the Global Plan of Action (to monitor implementation of Part II of the Global Plan of Action – *The Strategic Priorities for Action*), as well as a specific section for Collaboration and another for Funding (to address Part III of the Global Plan of Action – *Implementation and financing of the Global Plan of Action for Animal Genetic Resources*). For the world as a whole, Strategic Priority Areas 1 (Characterization, inventory and monitoring of trends and associated risks) and 4 (Policies, institutions and capacity-building) showed a greater level of implementation, especially compared to Strategic Priority Area 3 (Conservation). One plausible explanation for this result is that the actions of Strategic Priority Areas 1 and 4 are among the first to be undertaken chronologically for management of animal genetic resources. Also, only a subset of breeds per country may require active conservation, whereas the other three strategic priority areas pertain to all breeds. In all regions, the indicators for the state of collaboration and especially for the state of funding showed lower levels of implementation than those for the strategic priority areas.

10. The regional progress reports indicate varying degrees of progress since the first round of reporting. In addition, a few regions lack a formal Regional Focal Point. The European Regional Focal Point (ERFP), the longest established Regional Focal Point, continues to report substantial multi-country collaboration across all strategic priority areas. The Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA), which serves as the Subregional Focal Point for East Africa, also reported activities in all four strategic priority areas. The Regional Focal Point for Latin America and the Caribbean, and the Asian animal genetic resources network, each reported activities targeting specific strategic priority areas.

11. International organizations continue to make significant contributions to the implementation of the Global Plan of Action. In general, these actors stress the involvement of local stakeholders to

[10] CGRFA-17/19/Report, paragraph 85.
[11] http://www.fao.org/animal-genetics/global-policy/reporting-system/countries/en/
[12] http://www.fao.org/animal-genetics/global-policy/reporting-system/regions/en/
[13] http://www.fao.org/animal-genetics/global-policy/reporting-system/international-organizations/en

ensure ownership and to maximize impact. The activities of these organizations span the four strategic areas, although different organizations reported emphasis on different strategic priority areas.

12. The results reported by countries on progress in implementing the Global Plan of Action are encouraging, but the task of improving the management of the world's animal genetic resources for food and agriculture remains far from complete. The process indicators, when interpreted quantitatively, suggest that implementation is around 50 percent complete and progress may be less in non-reporting countries. The reasons for this shortfall continue to include a lack of financial resources and institutional and human capacity.

B. Policy impact

13. The country progress reporting process confirms that many governments are considering the Global Plan of Action in their development of policy for management of animal genetic resources. Considering the information from all three rounds of reporting, 66 countries have developed National Strategies and Action Plans for the management of animal genetic resources. In 2019, 40 countries reported advancement in this process with respect to 2014, including 12 countries that have begun the process of preparing their first National Strategy and Action Plan. In the European Union, both the *Farm to Fork Strategy*[14] and the *Biodiversity strategy for 2030*[15] recognize the need to reverse the loss of genetic diversity, including of traditional breeds.

III. FAO SUPPORT TO THE IMPLEMENTATION OF THE GLOBAL PLAN OF ACTION FOR ANIMAL GENETIC RESOURCES

14. FAO continued to assist countries in the implementation of all strategic priority areas of the Global Plan of Action by providing institutional and technical support, facilitating research and building capacity. The COVID-19 pandemic restricted travel, so normative activities took precedence during most of the 2020 calendar year. This section provides some examples of FAO's activities in the four strategic priority areas and some cross-cutting areas.

A. Strategic Priority Area 1. Characterization, inventory and monitoring of trends and risks

15. The Commission, at its Seventeenth Regular Session, requested FAO to allocate regular programme resources to the continued maintenance and development of DAD-IS.[16] The Commission further requested FAO to provide technical support to countries on the estimation of breed population sizes and on the use of DAD-IS,[17] and to include in DAD-IS data fields for monitoring the diversity of managed honey bees of relevance for food and agriculture.[18]

16. In response to the Commission's requests, and with the FAO Regular Programme budget, the Global Focal Point has continued to maintain and further develop and update DAD-IS.[19] The activities included: (i) development and refinement of procedures for exchange of data in collaboration with managers of national and regional systems; (ii) language translation of the web interface; (iii) creation of data fields for monitoring the diversity of managed honey bees of relevance for food and agriculture; (iv) the full consolidation of DAD-IS and the European Farm Animal Biodiversity Information System network (EFABIS-net) into a single information system; (v) creation of tools allowing the export of the SDG Indicators 2.5.1b and 2.5.2; and (vi) change of the list of countries or areas according to the UN Standard Country or Area Codes for Statistical Use commonly referred to

[14] https://ec.europa.eu/food/horizontal-topics/farm-fork-strategy_en
[15] https://ec.europa.eu/environment/strategy/biodiversity-strategy-2030_en
[16] CGRFA-17/19/Report, paragraph 91.
[17] CGRFA-17/19/Report, paragraph 91.
[18] CGRFA-17/19/Report, paragraph 92.
[19] http://www.fao.org/dad-is

as the M49 standard.[20] Details of these activities are provided in the document *Status of the development of the Domestic Animal Diversity Information System.*[21]

17. In 2009, the Commission requested FAO to make status and trends reports on animal genetic resources available to the Commission at each of its regular sessions.[22] In response, FAO has prepared for each subsequent session a report providing this information. The document, *Status and trends of animal genetic resources – 2020*,[23] has been made available for consideration by the Commission. The status report is based on information in DAD-IS provided by National Coordinators for the Management of Animal Genetic Resources (NC-AnGR). Currently, 178 countries have nominated a NC-AnGR.

18. At its Seventeenth Regular Session, the Commission requested the Secretariat to develop an in-house analytical study on the factors influencing the reporting of unknown risk status for breeds.[24] In response to this request, FAO has prepared the document *Detailed analysis of the factors influencing the reporting of information in the Domestic Animal Diversity Information System*[25] for consideration by the Commission.

19. The study revealed geographic region to be the factor with the strongest association with the proportion of breeds with unknown status for risk of extinction. Further, it confirmed that the main reasons for data gaps identified and presented to the last session of the Commission[26] remain valid. Lack of breed population data at country level and problems with access to existing breed population data were the most frequently reported reasons. These were followed by a lack of awareness by NC-AnGR of their duty to report breed population data in DAD-IS, and lack of knowledge by NC-AnGR on how to enter data into DAD-IS.

20. To help address the specific problem of the lack of breed population size data, FAO developed a methodology to collect and/or estimate breed population data. The methodology employs a stratified sampling approach, which allows NC-AnGR and other stakeholders to estimate population sizes in a cost-effective manner. FAO implemented several pilot projects to assist countries in accessing existing data, estimating population sizes and entering data into DAD-IS. In Latin America and the Caribbean, the approach has been successfully implemented. Three countries[27] involved in these projects have used the methodology to update their data and the approach is currently being extended to a fourth country[28] in the region and to five countries in Northern Africa.[29] The field activities associated with these projects have been temporarily delayed by the COVID-19 pandemic.

21. To address the knowledge gap in the use of DAD-IS, FAO developed a collection of training materials. FAO prepared a new DAD-IS user manual (available in English[30] and Spanish[31]). In addition, an e-learning module was developed to demonstrate the process of data entry. The module has been made available in English,[32] French[33] and Spanish.[34] FAO created the *Quick Guide for*

[20] https://unstats.un.org/unsd/methodology/m49/
[21] CGRFA-18/21/10.2/Inf.3.
[22] CGRFA-12/09/Report, paragraph 39.
[23] CGRFA/WG-AnGR-11/21/Inf.6.
[24] CGRFA-17/19/Report, paragraph 90.
[25] CGRFA-18/21/10.2/Inf.4.
[26] CGRFA-17/19/11.2/Inf.3 Rev.1, paragraph 11.
[27] Colombia, Ecuador, Panama.
[28] Argentina.
[29] Algeria, Libya, Mauritania, Morocco, Tunisia.
[30] http://www.fao.org/3/cb0697en/cb0697en.pdf
[31] http://www.fao.org/3/cb0697es/cb0697es.pdf
[32] https://360.articulate.com/review/content/95908ec3-199a-4e93-8811-1340d673f97a/review
[33] https://360.articulate.com/review/content/ceeaeb8d-1628-4dcb-828d-0729f7ba7acc/review
[34] https://360.articulate.com/review/content/35e42cdd-e11c-4bce-aa87-627b1350dd79/review

National Coordinators on Data Entry (available in English[35] , Spanish[36] and French[37]), two videos, one on *How to use DAD-IS*[38] and a second on *Trends in Risk Status.*[39] FAO continued to provide direct training, most recently during the Global National Coordinators' Workshop held on 2 July 2021, and upon request to answer all individual questions related to DAD-IS.

22. The Intergovernmental Technical Working Group on Animal Genetic Resources for Food and Agriculture (Working Group), at its Eleventh Session, made a range of recommendations to the Commission on the further development of DAD-IS, including:

- the development of a tool allowing automated translation of DAD-IS content;
- the exploration of potential integration into DAD-IS of data fields related to ecosystem services; production environment descriptors; information on breeders, producers and breeding organizations; and genetic and genomic data and indicators;
- the sharing with Members of the methodology developed for collecting and estimating breed population data in a cost-efficient way; and
- the need for Members to regularly update their national breed data, including honey bees.[40]

23. Beyond its activities related to DAD-IS, FAO continued to work through its Technical Cooperation Projects (TCP) and with various partners to support countries in the characterization, inventory and monitoring of animal genetic resources, in the standardization of methods to undertake these tasks, and in the dissemination of results and related information. The Joint FAO/International Atomic Energy Agency (IAEA) Centre of Nuclear Techniques in Food and Agriculture (CJN) provided capacity-building through expert meetings, training courses and individual fellowships undertaken at either CJN's laboratory in Austria or in the laboratories of collaborating countries.

24. The Commission, at its Seventeenth Session, requested FAO to continue developing and updating guidelines to facilitate the application of new scientific discoveries related to the identification, characterization and conservation of animal genetic resources.[41] The document *Recent developments in biotechnologies relevant to the characterization, sustainable use and conservation of genetic resources for food and agriculture*[42] provides an overview of recent relevant scientific discoveries. For example, advances in genomics have greatly increased the precision achievable in breed characterization studies.

25. In response to the Commission's request, and upon consultation of the Working Group[43], FAO developed a *Draft practical guide on genomic characterization of animal genetic resources*[44] to address developments since publication of the *FAO guidelines on molecular genomic characterization of animal genetic resources*.[45] The practical guide addresses: (i) the rationale for genomic characterization of animal genetic resources; (ii) the basics of carrying out molecular genetic studies; (iii) genomic tools and methods; (iv) assessment of genomic variation within-populations; and (v) general recommendations.

[35] http://www.fao.org/3/cb0698en/cb0698en.pdf
[36] http://www.fao.org/3/cb0698es/cb0698es.pdf
[37] http://www.fao.org/3/cb0698fr/cb0698fr.pdf
[38] https://360.articulate.com/review/content/d2e39269-91fe-44c9-baf0-071fc58a5e88/review
[39] https://360.articulate.com/review/content/05c40813-5cfc-4ac6-bf3d-3cb901f2f010/review
[40] CGRFA-18/21/10.1, paragraphs 18–24.
[41] CGRFA-17/19/Report, paragraph 84.
[42] CGRFA-18/21/6/Inf.1.
[43] CGRFA-18/21/10.1, paragraphs 13-17; CGRFA/WG-AnGR-11/21/Inf.5.
[44] CGRFA-18/21/10.2/Inf.2.
[45] http://www.fao.org/cgrfa/policies/global-instruments/codes-standards-and-guidelines/en/

B. Strategic Priority Area 2. Sustainable use and development

26. In response to the need for technical assistance to ensure the better use and development of animal genetic resources, FAO continued to provide assistance in these fields, both directly and through cooperation with other organizations.

27. At its Seventeenth Regular Session, the Commission endorsed the *Guidelines on developing sustainable value chains for small-scale livestock producers*[46] and requested FAO to publish and distribute them widely. The guidelines have been published in both electronic[47] and hard-copy formats. Distribution of hard copies has been delayed by the COVID-19 pandemic. The Government of China is supporting the translation of the guidelines into Chinese.

28. Forty-one countries received support through TCP and other projects administered by FAO and CJN. The projects address various issues of priority to each country, including livestock development, value-chain enhancement, genetic improvement, application of reproductive technologies and animal identification and traceability. FAO support to countries that is associated with application of biotechnologies is described in the document *Biotechnologies for the sustainable use and conservation of genetic resources for food and agriculture*.[48]

29. FAO continued its work in support of pastoralists and other small-scale livestock keepers. Specifically, with the extra-budgetary support received from the Governments of Germany and Spain, and the International Fund for Agricultural Development (IFAD), FAO continued its operation of the Pastoralist Knowledge Hub.[49]

30. The Working Group, at its Eleventh Session, recommended that the Commission invite Members to consider developing national and regional strategies to use livestock in a sustainable way, including genetic resource aspects and the transformation of food systems towards more sustainability and resilience to meet future challenges, according to Strategic Priority Area 2 of the Global Plan of Action and their local, national and regional contexts.

C. Strategic Priority Area 3. Conservation

31. From 2016 to 2020, FAO was a member of a consortium consisting of collaborators from Europe and several African and South American countries that was implementing the project "IMAGE – Innovative Management of Animal Genetic Resources",[50] supported by the European Union. The project aimed to improve the management and *ex situ* conservation programmes for animal genetic resources and increase the utilization of germplasm stored in gene banks. In particular, FAO was responsible for overseeing the organization of training workshops for the North African[51] and Latin American[52] partners and for benchmarking best practices for quality assurance of gene banks.

32. Technologies for conservation of animal genetic resources, especially for cryoconservation, have advanced substantially in recent years.[53] More and more frequently, countries are using their gene banks for managing the genetic diversity of *in situ* populations, not merely as a tool to prevent breed extinction. To facilitate adoption of recent advances in animal gene banking and to complement and update the 2012 *FAO guidelines - Cryoconservation of Animal Genetic Resources*[54], FAO, upon

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[46] CGRFA-17/19/11.2/Inf.5.
[47] FAO. 2019. *Developing sustainable value chains for small-scale livestock producers*. Edited by G. Leroy & M. Fernando. FAO Animal Production and Health Guidelines No. 21. Rome. (also available at http://www.fao.org/3/ca5717en/CA5717EN.pdf).
[48] CGRFA-18/21/6.
[49] http://www.fao.org/pastoralist-knowledge-hub/en; see also FAO. 2021. *Pastoralism – Making variability work.* FAO Animal Production and Health Paper No. 185. Rome.
[50] http://imageh2020.eu
[51] Egypt (27 trainees) and Morocco (20 trainees).
[52] Argentina (22 trainees) and Colombia (40 trainees).
[53] CGRFA-18/21/6/Inf.1.
[54] http://www.fao.org/cgrfa/policies/global-instruments/codes-standards-and-guidelines/en/

consultation of the Working Group[55], prepared a *Draft practical guide on innovations in cryoconservation of animal genetic resources*.[56] The draft practical guide addresses: (i) gene banking strategies; (ii) quality management of gene banks; (iii) choice of genetic material to be stored; (iv) economics of gene-banking; (v) the genetics of gene bank development and utilization; (vi) methods for cryopreservation and utilization of material; (vii) sanitary issues; (viii) information systems; (ix) legal issues; and (x) capacity building and outreach.

33. FAO supported Viet Nam in the cryoconservation of five local pig breeds to help ensure their protection against loss due to African swine fever – due either to the disease itself or the disease control programmes. In addition to cryopreserving somatic cells, Viet Nam reported breed characteristics of these five breeds in DAD-IS and uploaded cryoconservation and population size data for reporting on SDG Indicators 2.5.1b and 2.5.2.

D. Strategic Priority Area 4. Policies, institutions and capacity-building

34. FAO provided support to various countries and regional bodies in the development of policies related to the management of animal genetic resources, including National Strategies and Action Plans, and national laws and legislation.

35. FAO and its partners contributed to the development and/or implementation of two global projects and 49 regional or national projects involving 61 countries. FAO has served on the advisory board or stakeholder panel for several international collaborative research projects. FAO organized, with partners, 12 national and regional capacity-building events with an average of 3 countries and 22 trainees participating.

36. FAO continued to collaborate with NC-AnGR and regional stakeholders to maintain and strengthen Regional and Subregional Focal Points or networks in Asia, the Near East and Africa. FAO continued its collaboration with the Regional Focal Points for Europe and for Latin America and the Caribbean. FAO organized or contributed to six meetings for NC-AnGR in the reporting period.

37. FAO served as guest editor for the special issue *Sustainable Management of Animal Genetic Resources*[57] in the open-access scientific journal *Sustainability*. As of July 2021, the issue included 10 articles. FAO also serves on the editorial board of *Genetic Resources*,[58] a new open-access scientific journal launched by the European Union-sponsored GenResBridge[59] project that replaces the discontinued *Animal Genetic Resources*[60] journal.

38. FAO continues to maintain the Domestic Animal Diversity Network (DAD-Net) and regional subgroups as an informal forum for the discussion of issues relevant to the management of animal genetic resources. Numbers of subscribers and messages continue to increase steadily. As of July 2020, nearly3 400 people from 156 countries were subscribed to the network. FAO has expanded its use of social media for raising awareness of animal genetic resources for food and agriculture, particularly through the Twitter application.

39. At its 42nd Session, the FAO Conference endorsed the establishment of the Sub-Committee on Livestock (Sub-Committee) by the Committee on Agriculture (COAG) at its 27th Session. The Sub-Committee will serve as an intergovernmental forum with a mandate to discuss and build consensus on livestock issues and priorities and advise COAG on technical and policy programmes and activities needed to optimize the sector's contribution to the realization of the 2030 Agenda for Sustainable Development.[61] Future interaction between the Sub-Committee and the Commission on matters of mutual interest is foreseen.

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[55] CGRFA-18/21/10.1, paragraphs 13–17; CGRFA/WG-AnGR-11/21/Inf.4.
[56] CGRFA-18/21/10.2/Inf.1.
[57] https://www.mdpi.com/journal/sustainability/special_issues/Animal_Genetic_Resources_sus
[58] http://www.genresbridge.eu/resources/genetic-resources-journal/
[59] http://www.genresbridge.eu
[60] http://www.fao.org/animal-genetics/resources/journal/en/
[61] C/2021/21, paragraph 19.

E. Collaboration

40. The Commission, at its Seventeenth Regular Session,[62] requested FAO to strengthen partnerships with stakeholders and donors to continue technical and policy support for country implementation of the Global Plan of Action.

41. FAO continued and strengthened its interactions with scientific and non-governmental organizations, Regional Focal Points and regional networks for the management of animal genetic resources. As described throughout this document, FAO maintains its recognized technical competence in the management of animal genetic resources through contributing to research and development projects, organizing and leading sessions at international scientific conferences and publishing scientific papers.

F. Funding

42. The Commission, at its Twelfth Regular Session, adopted the *Funding Strategy for the implementation of the Global Plan of Action for Animal Genetic Resources*[63] (Funding Strategy) and requested FAO to implement it.[64]

43. The Funding Strategy covers all known and potential sources of financial resources that support the implementation of the Global Plan of Action. The Funding Strategy established an FAO Trust Account for voluntary contributions to support national and regional projects for implementation of the Global Plan of Action.

Status of the FAO Trust Account

44. The Commission, at its Seventeenth Regular Session, invited donors to contribute to the implementation of the Global Plan of Action, including to a second call for proposals under the FAO Trust Account, and requested FAO to disseminate the results of the FAO Trust Account projects in relevant fora.[65] In response to this request, FAO referred to the FAO Trust Account projects in various conferences and workshops held during the reporting period, for which the audiences included representatives of potential donor organizations. To date, activities for the first call have been closed and no funds are available for a second call for proposals under the FAO Trust Account.

Status of other resources under the Funding Strategy

45. Work on animal genetic resources for food and agriculture, including the implementation of the Global Plan of Action, contributed to four outcomes of the FAO's *Medium Term Plan 2018–21*[66] primarily relating to Strategic Objective 2 – *Make agriculture, forestry and fisheries more productive and sustainable*. For 2018–19, the portion of FAO's Regular Programme resources allocated for work on animal genetic resources was around USD 1.6 million.

46. Efforts concentrated on core activities, namely the intergovernmental process and DAD-IS, but also included inputs to cross-cutting initiatives, particularly those involving biodiversity on a cross-sectoral level. The Global Focal Point benefited from the contributions of an officer for animal genetic resources seconded by the Government of France, who was present throughout the 2018–19 biennium and the first half of 2020. In July 2020, a new Professional Officer (P-3) joined the Animal Production and Genetics Unit of the Animal Production and Health Division.

47. During the 2018–19 biennium, the value of FAO Technical Cooperation Projects contributing to this work amounted to approximately USD 1.3 million, and from the IAEA Technical Cooperation Programme through CJN approximately USD 2.0 million. CJN also contributed approximately USD 0.25 million through its Coordinated Research Project programme.

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[62] CGRFA-17/19/Report, paragraph 86.
[63] CGRFA-12/09/Report, *Appendix C*.
[64] CGRFA-12/09/Report, paragraph 43.
[65] CGRFA-17/19/Report, paragraph 87.
[66] C 2019/3.

Voluntary contributions to FAO

48. FAO received funds to support the implementation of the Global Plan of Action, including support for pastoralism, at global level, from France and Germany (total of approximately USD 0.5 million) and for regional and country projects from Austria, Azerbaijan, Bahrain, European Union, Mauritania, Nepal and Switzerland (total of approximately USD 3.3 million). For some of these countries, the support involved national funds the countries had received from donors, specifically IFAD, the World Food Programme and the Global Environment Facility. The funds under these programme cooperation agreements helped FAO provide catalytic funds for special activities at all levels.

Resources not under FAO control

49. The Funding Strategy lists four different types of relevant resources, including resources that are not under FAO control. FAO has a facilitating role in enhancing countries' access to information on funding. It carries out this role by continuing to provide information on scholarships, funding sources and grants, especially through DAD-Net.

IV. GUIDANCE SOUGHT

50. The Commission may wish to:

i. call upon countries to continue implementing the Global Plan of Action and to consider developing national and regional strategies to use livestock in a sustainable way, including genetic resource aspects and the transformation of food systems towards more sustainability and resilience to meet future challenges;
ii. call upon countries to place particular emphasis on conservation of animal genetic resources through either *in vivo* or *in vitro* methods as appropriate, and to request FAO to provide complementary technical and policy support;
iii. request FAO and countries to continue raising awareness on the importance of animal genetic resources and the roles of livestock keepers and of livestock species and breeds and their production systems in the provision of ecosystem services;
iv. request FAO, in partnership with stakeholders and donors, to continue supporting countries in in the implementation of the Global Plan of Action and in the development and implementation of national and regional strategies and studies; and
v. invite donors to contribute to the implementation of the Global Plan of Action, including by contributing to the Funding Strategy.

51. With specific regard to the practical guides for the implementation of the Global Plan of Action, the Commission may further wish to:

i. take note of the *Draft practical guide on innovations in cryoconservation of animal genetic resources* and the *Draft practical guide on genomic characterization of animal genetic resources,* request FAO to finalize and disseminate them and encourage countries to make full use of them; and
ii. request FAO to continue developing and updating practical guides and other technical documents to support implementation of the Global Plan of Action, and to organize workshops to raise awareness and support regional and subregional networks.

52. With specific regard to the monitoring of animal genetic diversity, the Commission may further wish to:

i. request FAO to continue to provide Regular Programme and technical support to further maintain and develop DAD-IS and to continue to increase user-friendliness, especially with regard to tools for regular data updating; and to include in DAD-IS tools for visualizing data on the diversity of managed honey bees;
ii. request FAO to investigate the potential integration into DAD-IS of data fields related to: ecosystem services; production environment descriptors; information on breeders, producers and breeding organizations; and genetic and genomic data and indicators;

iii. request FAO to develop a tool allowing automated translation of DAD-IS content provided by NC-AnGR from and into English, French and Spanish and to investigate the feasibility of translation across all UN languages;

iv. request FAO to undertake, subject to availability of financial resources, a feasibility study on the availability of, access to, and optimal use of genomic and/or breed demographic data to estimate parameters that may be suitable to complement breed population size data as indicators for monitoring the genetic diversity within livestock breeds;

v. request FAO to continue assisting countries in accessing existing breed population size data, to provide technical support to countries on estimation of breed population sizes, to share with countries the methodology developed for collecting and estimating breed population data in a cost-efficient way, and investigate further the rationale behind the population size thresholds for assigning status for risk of extinction;

vi. stress the need for countries to regularly update their national data in DAD-IS or EFABIS-net, including data on the diversity of managed honey bees and information on the conservation of animal genetic resources both *in situ* and *ex situ*, and to continue to work with FAO to improve interoperability of national and regional databases with DAD-IS to ensure that decisions on the implementation of the Global Plan of Action and achievement of SDG Target 2.5 are informed by the most up-to-date data and information available; and

vii. raise awareness of the United Nations Statistical Commission on the necessity to broaden the scope of SDG indicator 2.5.1b to include all breeds, to account for the entire spectrum of animal genetic resources of interest for food and agriculture.