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联合国粮食及农业组织 | Food and Agriculture Organization of the United Nations | Organisation des Nations Unies pour l'alimentation et l'agriculture | Продовольственная и сельскохозяйственная организация Объединенных Наций | Organización de las Naciones Unidas para la Alimentación y la Agricultura | منظمة الأغذية والزراعة للأمم المتحدة

COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Item 8.1 of the Provisional Agenda

Twentieth Regular Session

Rome, 24–28 March 2025

REPORT OF THE FIRST SESSION OF THE INTERGOVERNMENTAL TECHNICAL WORKING GROUP MICROORGANISM AND INVERTEBRATE GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Note by the Secretariat

The Commission on Genetic Resources for Food and Agriculture (Commission), at its last session, established the Intergovernmental Technical Working Group on Microorganism and Invertebrate Genetic Resources for Food and Agriculture (Working Group)[1] and adopted the Statutes for the Working Group.[2] The Council, at its 174th Session, endorsed the establishment of the Working Group.[3]

The First Session of the Working Group was held in Rome from 25 to 27 September 2024. As requested by the Commission, the Working Group reviewed the Commission's work on micro-organism and invertebrate genetic resources for food and agriculture (MIGR), including previously identified regional needs and priorities. The Working Group addressed: (i) microorganisms used in food processing and agroindustrial processes; (ii) edible fungi and invertebrates used as dietary components of food/feed; (iii) bioremediation and nutrient cycling MIGR; (iv) microorganisms relevant to ruminant digestion; (v) possible modalities of a global pollinator platform; and (vi) microbial and invertebrate biological control agents and microbial biostimulants. It also addressed the role of genetic resources for mitigation of and adaptation to climate change and options for the identification of new and emerging issues.

The report of the First Session of the Working Group is contained in this document, for consideration by the Commission

[1] CGRFA-19/23/Report, paragraph 128.
[2] CGRFA-20/25/8.1/Inf.1.
[3] CL 174/REP, paragraph 33.

Food and Agriculture Organization of the United Nations

COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

CGRFA/WG-MIGR-1/24/Report

First Session of the Intergovernmental Technical Working Group on Microorganism and Invertebrate Genetic Resources for Food and Agriculture

Rome, 25–27 September 2024

CGRFA/WG-MIGR-1/24/Report

COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

REPORT OF THE FIRST SESSION

OF THE

INTERGOVERNMENTAL TECHNICAL WORKING GROUP ON

MICROORGANISM AND INVERTEBRATE GENETIC RESOURCES

FOR FOOD AND AGRICULTURE

Rome, 25–27 September 2024

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Rome, 2024

The documents of the Intergovernmental Technical Working Group on Microorganism and Invertebrate Genetic Resources for Food and Agriculture are to be found on the internet at:
https://www.fao.org/cgrfa/meetings/detail/first-session-migr/en

They may also be obtained from:

The Secretary
Commission on Genetic Resources for Food and Agriculture
Food and Agriculture Organization of the United Nations
Viale delle Terme di Caracalla
00153 Rome, Italy

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CONTENTS

I. OPENING OF THE SESSION

1. The First Session of the Intergovernmental Technical Working Group on Microorganism and Invertebrate Genetic Resources for Food and Agriculture (Working Group) was held from 25 to 27 September 2024. The Members and alternates of the Working Group, as elected by the Commission on Genetic Resources for Food and Agriculture (Commission) at its Nineteenth Regular Session, are given in *Appendix B.* The list of delegates and observers is available on the website of the Commission.[1]

2. Ms Mariana Marshall Parra (Brazil), Vice-Chairperson of the Commission, opened the session and welcomed delegates and observers.

3. Mr Dan Leskien, Senior Liaison Officer, Commission Secretariat, welcomed delegates and observers. He provided some background on the Commission and the establishment of the Working Group, highlighting that the Commission had, as early as in 2007, established a workstream on microorganism and invertebrate genetic resources for food and agriculture (MIGR) within its Multi-Year Programme of Work (MYPOW). He further noted the broad scope of the Working Group's mandate and expressed his hope that the Commission, under the guidance of the Working Group, would make progress on some issues related to MIGR at its next session and identify specific actions to be taken by Members, the Commission and FAO with a view to strengthening the sustainable use and conservation of MIGR.

4. The Working Group adopted the Agenda, as given in *Appendix A*.

II. ELECTION OF CHAIRPERSON, VICE-CHAIRPERSONS AND *RAPPORTEUR*

5. The Working Group, in consultation with the regions, replaced absent Members of the Working Group with other Members of the Commission present at the meeting. Benin, Ecuador, Jordan, Kenya, Malawi, Malaysia, Sudan, and the United Kingdom of Great Britain and Northern Ireland therefore attended the meeting as Members of the Working Group.

6. The Working Group elected Mr Scott Miller (United States of America) as Chair. The Working Group elected Mr Eddy Léonard Ngonkeu Mangaptche (Cameroon), Ms Johanna Nykyri (Finland), Mr Ramón Ignacio Arteaga Garibay (Mexico), Ms Mona Ali Al-bloushi (Qatar), Mr Won Seog Park (Republic of Korea) and Mr George Hazelman (Samoa) as Vice-Chairs. Mr Hazelman was elected *Rapporteur*.

III. MICROORGANISMS USED IN FOOD PROCESSING AND AGRO-INDUSTRIAL PROCESSES

7. The Working Group considered the document *Microorganisms used in food processing and agro-industrial processes*.[2] It took note of the *Draft study on the sustainable use and conservation of fermentation-associated microorganisms within the agrifood system*.[3]

8. The Working Group noted that Members of the Working Group could provide comments on the draft study in writing to the Secretariat by 15 November 2024.

9. The Working Group stressed the need to strengthen the technical and human capacity needed to characterize and improve the use of the microbial communities behind local fermented food products and other microorganisms with potential for application in food processing or in non-food agro-industrial processes in the context of circular economy, including characterization at within-species level.

[1] https://www.fao.org/cgrfa/meetings/detail/first-session-migr/en
[2] CGRFA/WG-MIGR-1/24/3 Rev.1.
[3] CGRFA/WG-MIGR-1/24/3/Inf.1.

10. It recommended that countries document or improve documentation of, as appropriate, traditional knowledge associated with fermented foods and address shortages in fermentation capacity to meet demand for fermentation-derived foods.

11. The Working Group recommended that countries, through appropriate regulatory instruments and other measures, improve the integration of fermentation processes into agrifood systems. It noted the need to ensure adequate funding for the long-term storage and accessibility of microorganisms and their associated data of potential relevance to food processing and non-food agro-industrial processes in culture collections and highlighted the need to improve the infrastructure for *ex situ* conservation and the coordination of activities in this field at national and international levels.

12. It noted the need to facilitate access to microorganism genetic resources relevant to food processing and non-food agro-industrial processes and to ensure fair and equitable sharing of benefits arising from their use and associated traditional knowledge, including from digital sequence information on MIGR.[4] The Working Group recommended harmonizing terminology related to the use of microorganisms in food processing and non-food agro-industrial processes in the context of circular economy.

13. The Working Group stressed the need to strengthen capacity and improve collaborative research, awareness-raising and scientific communication related to the use of microorganisms in food processing and non-food agro-industrial processes and overcome barriers to the commercialization of beneficial food processing and non-food agro-industrial technologies involving the use of microorganisms. It noted the need to ensure transparency in the use of microorganisms in commercial food products through the development of standards for providing microorganism names on the labels of fermented food products.

14. It further highlighted the need to promote research on the roles of fermented foods as parts of healthy, safe and nutritious diets.

IV. EDIBLE FUNGI AND INVERTEBRATES USED AS DIETARY COMPONENTS OF FOOD/FEED

15. The Working Group considered the document *Edible fungi and invertebrates used as food/feed*[5] and took note of the *Draft study on the sustainable use and conservation of edible fungi and invertebrates used as dietary components of food/feed*.[6]

16. The Working Group noted that Members of the Working Group could provide comments on the draft study in writing to the Secretariat by 15 November 2024.

17. It further noted that the draft study could provide more information on medicinal mushrooms and their benefits for human health and that additional organizations could be included in the section on institutional frameworks. It also noted the importance of highlighting the work of the International Union for Conservation of Nature (IUCN).

18. The Working Group noted the importance of ensuring that the monitoring of wild species of edible fungi and invertebrates is aligned with the IUCN Red List of Threatened Species and the Convention on Biological Diversity (CBD). It noted the importance of monitoring genetic diversity within species within these functional groups. It further noted the importance of identifying and monitoring all kinds of threats affecting these functional groups.

19. It stressed that the priority for conservation should be reducing ecosystem degradation but that there is also a need to develop new techniques for *ex situ* conservation of edible fungi and invertebrate genetic diversity.

[4] The term is taken from decision CBD/COP/DEC/XIII/16. There are different understandings of the concept and scope of the term and a range of views regarding the need to define such concept and scope. In line with decision CBD/COP/DEC/15/9, the term is used for further discussions.
[5] CGRFA/WG-MIGR-1/24/4 Rev.1.
[6] CGRFA/WG-MIGR-1/24/4/Inf.1.

20. It noted the need for the topic of edible fungi and invertebrates to be included in university-level curricula in order to support the development of capacity needed to scale up production.

21. It further noted the key role that national governments have to play in the promotion of edible fungi and invertebrates, including by ensuring that they are addressed in national strategies and frameworks for genetic resources. It also noted the potential role of online knowledge portals for edible fungi and invertebrates in providing access to national policy frameworks, programmes and best practices.

V. BIOREMEDIATION AND NUTRIENT CYCLING SOIL MICROORGANISMS AND INVERTEBRATES

22. The Working Group considered the document *Bioremediation and nutrient cycling soil microorganisms and invertebrates*[7] and welcomed the finalization of Background Study Paper No. 74 on *Sustainable use and conservation of soil microorganisms and invertebrates contributing to bioremediation and nutrient cycling*.[8]

23. The Working Group noted the need to better coordinate and support research on the roles of soil microorganisms and invertebrates in nutrient cycling and bioremediation, on agricultural practices that may affect soil health and soil biodiversity, and on the impacts of such practices on productivity and livelihoods.

24. It recommended that countries take action, as appropriate, and according to their capacities to promote the uptake of agricultural practices identified as beneficial to soil microorganisms and invertebrates that contribute to nutrient cycling and bioremediation and as having potential to contribute to productivity and livelihoods and to the resilience and sustainability of farming systems. It further recommended that the Commission stress the importance of applying agroecological principles, as well as other holistic approaches, in the management of soil biodiversity and of considering the significance for soil biodiversity of integrating farming systems, including livestock.

25. The Working Group noted the importance of improving the coordination of existing *ex situ* and *in situ* conservation initiatives targeting soil microorganisms and invertebrates that contribute to nutrient cycling and bioremediation. It recommended that countries take action, as appropriate, and according to their capacities to improve the conservation of understudied groups of organisms within this functional group. It further noted the need to improve the identification of goals and the setting of priorities in the conservation and sustainable use of soil microorganisms and invertebrates that contribute to nutrient cycling and bioremediation, and recommended the establishment or strengthening, as appropriate, of technical infrastructure and capacity related to the sustainable use and conservation of these organisms.

26. The Working Group highlighted the importance of addressing the sustainable use and conservation of soil invertebrates and microorganisms across all the sectors of food and agriculture, and recommended that the Commission invite countries to support the monitoring of soil microorganisms and invertebrates that contribute to nutrient cycling and bioremediation, and the proper management of data related to their sustainable use and conservation.

27. The Working Group further recommended that countries take action, as appropriate, and according to their capacities to better reflect the crucial role of soil microorganisms and invertebrates that contribute to nutrient cycling and bioremediation in relevant policy, legal and institutional frameworks at national and international levels. It also recommended that relevant stakeholders implement the Voluntary Guidelines for Sustainable Soil Management, endorsed by the FAO Council in 2016.[9]

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[7] CGRFA/WG-MIGR-1/24/5.

[8] Csorba, C., Hackl, E., Reichenauer, T., van der Putten, W. & Sessitsch, A., 2024. *Sustainable use and conservation of soil microorganisms and invertebrates contributing to bioremediation and nutrient cycling*. Background Study Paper, No. 74. FAO Commission on Genetic Resources for Food and Agriculture. Rome, FAO. https://doi.org/10.4060/cd0147en

[9] FAO. 2017. *Voluntary Guidelines for Sustainable Soil Management.* Rome. https://openknowledge.fao.org/handle/20.500.14283/i6874en

VI. MICROORGANISMS RELEVANT TO RUMINANT DIGESTION

28. The Working Group considered the document *Microorganisms relevant to ruminant digestion*[10] and welcomed the finalization of Background Study Paper No. 75 on *Sustainable use and conservation of microorganisms of relevance to ruminant digestion*.[11]

29. The Working Group recommended that existing global institutional frameworks addressing the sustainable use and conservation of microorganisms of relevance to ruminant digestion be strengthened and improved, including with regard to priority setting and the promotion of global collaboration. It stressed that, in addition to *ex situ* conservation, there is a need for agroecological, as well as other holistic approaches to the conservation of rumen microbial diversity, with particular reference to the protection of traditional livestock-keeping systems and locally adapted breeds maintained by small-scale farmers and pastoralists. It also stressed the importance of assessing risks associated with the manipulation of rumen microbiomes.

30. It recommended that relevant policies, legislation and institutional arrangements, including those related to access and benefit-sharing and to intellectual property, where applicable, be reviewed, as appropriate, with a view to ensuring an appropriate enabling framework for research and collaboration on rumen microorganisms and their management. It also recommended putting in place policies that will promote the uptake of innovations emanating from research in this field that can help reduce methane emissions.

31. The Working Group recommended that FAO support countries in the establishment or strengthening of national policy, legal and institutional frameworks related to the management of rumen microorganisms. It noted that resourcing of global research initiatives related to the culture, cataloguing, characterization and management of rumen microorganisms should be improved and that capacity development needs to be strengthened.

32. It further recommended that countries take action, as appropriate, and according to their capacities to encourage the deposition of rumen microbial isolates in culture collections and to facilitate access to these isolates, as well as to improve the capacity of such collections to deal with the increased demand.

33. The Working Group noted the need to promote, in line with the One Health approach, research on the diversity of rumen microbiome and its functions in relation to human, animal and environmental health.

VII. POSSIBLE MODALITIES OF A GLOBAL POLLINATOR PLATFORM

34. The Working Group considered the document *Possible modalities of a global pollinator platform.*[12]

35. The Working Group recommended that FAO invite FAO Members, technical experts and potential partners to an informal initial meeting to consider next steps in the establishment of a global pollinator platform that responds to the priorities and needs identified by the Commission at its Eighteenth Regular Session.[13] It stressed the importance of involving key partners, such as the CBD, in this process and of avoiding duplication of the efforts of others.

36. The Working Group recommended reviewing existing pollinator monitoring protocols, with the goal of establishing standardized monitoring protocols, to the extent this is possible, acknowledging that different countries and regions have different capacities. It also recommended that countries that currently lack the necessary capacity should be assisted in developing and strengthening relevant capacity. The Working Group recommended that FAO continue to develop tools and technical guidance documents, as appropriate.

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[10] CGRFA/WG-MIGR-1/24/6.
[11] Huws, S.A., Oyama, L.B. & Creevey, C.J. 2024. *Sustainable use and conservation of microorganisms of relevance to ruminant digestion*. Background Study Paper, No. 75. FAO Commission on Genetic Resources for Food and Agriculture. Rome. https://doi.org/10.4060/cd0155en
[12] CGRFA/WG-MIGR-1/24/7.
[13] CGRFA-18/21/Report, paragraph 83.

37. It further invited countries to implement the Updated Plan of Action 2018–2030 for the International Initiative on the Conservation and Sustainable Use of Pollinators,[14] establish or strengthen national monitoring programmes for invertebrate pollinators, promote research on drivers of change in pollinator populations and health, and on the impacts of both managed bees and wild invertebrate pollinators on wild plants and crop production, and insert data on managed bees into the Domestic Animal Diversity Information System (DAD-IS).[15]

38. The Working Group noted the existence of synergies between the management of biological control agents (BCAs) and the management of pollinators.

VIII. MICROBIAL AND INVERTEBRATE BIOLOGICAL CONTROL AGENTS AND MICROBIAL BIOSTIMULANTS

39. The Working Group considered the document *Microbial and invertebrate biological control agents and microbial biostimulants: follow-up*.[16]

40. It took note of the outcomes of the Open-ended Workshop on Biological Control Agents and Biostimulants[17] held from 23 to 24 September 2024 in Rome at FAO headquarters by the Commission in collaboration with the CBD, CABI International and the International Organisation for Biological Control and with the support of the European Union through the ACP MEAs 3 programme.[18] It noted that the workshop highlighted numerous benefits of the sustainable use of BCAs and biostimulants, particularly for delivering global food security and climate and biodiversity objectives. The Working Group thanked the organizers of the workshop for their dedicated work and expressed its gratitude to Canada, the Kingdom of the Netherlands, Norway and the European Union for providing financial support.

41. The Working Group recommended that the Commission invite FAO to conduct, in consultation with relevant international and regional organizations and instruments, a review of policy legal and institutional frameworks related to the use of microbial and invertebrate BCAs and microbial biostimulants, addressing, *inter alia*:

- the use of terminology;
- legislation and regulatory policies pertaining to authorization and use of BCAs and biostimulants;
- risk assessment criteria and risk–benefit analysis;
- the role of access and benefit-sharing measures for the utilization of MIGR;
- intellectual property rights; and
- the availability of information systems.

42. The Working Group recommended that the review identify regulatory gaps and restrictions affecting the use of microbial and invertebrate BCAs and microbial biostimulants, and options for the harmonization of regulatory requirements, as appropriate.

43. It recommended that the Commission invite FAO and other relevant organizations to establish, support or strengthen programmes of adaptive research with farmers and other relevant producers on microbial and invertebrate BCAs and microbial biostimulants.

44. The Working Group recommended that the Commission invite its Members and other stakeholders to promote research on the efficiency, reliability and ease of use of microbial and

[14] CBD/COP/DEC/14/6, Annex I.
[15] https://www.fao.org/dad-is/en/
[16] CGRFA/WG-MIGR-1/24/8.
[17] https://www.fao.org/cgrfa/meetings/open-ended-workshop-on-biological-control-agents-and-biostimulants/en
[18] Building capacity related to Multilateral Environmental Agreements in African, Caribbean and Pacific countries (ACP MEAs 3). https://www.fao.org/in-action/building-capacity-environmental-agreements/en/

invertebrate BCAs and microbial biostimulants, and to improve the dissemination of information on these matters.

IX. REVIEW OF THE WORK PLAN FOR THE SUSTAINABLE USE AND CONSERVATION OF MICROORGANISM AND INVERTEBRATE GENETIC RESOURCES FOR FOOD AND AGRICULTURE

45. The Working Group considered the document *Review of the work plan for the sustainable use and conservation of microorganism and invertebrate genetic resources for food and agriculture.*[19]

46. The Working Group welcomed the progress made by the Commission in the implementation of its Work Plan for the Sustainable Use and Conservation of Microorganism and Invertebrate Genetic Resources for Food and Agriculture[20] and welcomed the studies prepared on pollinators,[21] BCAs and biostimulants,[22] soil microorganisms and invertebrates contributing to bioremediation and nutrient cycling[23] and microorganisms relevant to ruminant digestion[24] as a good basis for further work by the Working Group and the Commission on MIGR.

47. The Working Group noted the urgency of progressing the Commission's work on BCAs and biostimulants given the rapid development of these sectors. It recommended that consideration be given to the inclusion of biofertilizers in this work, without, however, duplicating ongoing work of FAO and other international organizations and instruments. The Working Group further recommended that, at its next session, it follow up on activities related to the establishment of the global pollinator platform.

48. The Working Group identified a number of cross-cutting issues relevant to the conservation and sustainable use of all the functional groups of MIGR so far addressed by the Commission, and recommended that consideration be given to them as a matter of urgency, with a view to identifying related gaps and needs, and potential means of addressing them. Such cross-sectoral matters include the issue of the monitoring of MIGR, the availability and accessibility of relevant data, the maintenance and accessibility of collections, capacity development for species identification, and the identification of countries' needs and priorities with regard to MIGR.

49. The Working Group recommended that the Commission invite FAO to conduct a global review of the state of the human resources and physical infrastructure needed for taxonomic and characterization work, in coordination with appropriate partner organizations such as the Global Biodiversity Information Facility (GBIF) and the World Federation for Culture Collections. It further recommended that information on countries' needs and priorities with regard to the conservation and sustainable use of MIGR as well as on best practices and success stories be gathered and disseminated.

50. The Working Group stressed the need to enhance capacity building, and recommended that FAO promote the improvement of collection infrastructure, including both living collections and

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[19] CGRFA/WG-MIGR-1/24/9 Rev.1.

[20] CGRFA-17/19/Report, *Appendix E*.

[21] Aizen, M.A., Basu, P., Bienefeld, K., Biesmeijer, J.C., Garibaldi, L.A., Gemmill-Herren, B, Imperatriz-Fonseca, V.L., Klein, A-L., Potts, S.G., Seymour C.L. & Vanbergen, A.J. 2023. *Sustainable use and conservation of invertebrate pollinators*. Background Study Paper, No. 72. FAO Commission on Genetic Resources for Food and Agriculture. Rome, FAO. https://doi.org/10.4060/cc6499en

[22] Buitenhuis, R., Cock, M.J.W., Colmenarez, Y.C., De Clercq, P., Edgington, S., Gadaleta, P., Gwynn, R., Heimpel, G., Hill, M., Hinz, H.L., Hoddle, M.S., Jäkel, T., Klapwijk, J.N., Leung, K., Mc Kay, F., Messelink, G.J., Silvestri, L., Smith, D., Sosa, A., Wäckers, F.L., Cabrera Walsh, G., Wyckhuys, K.A.G. & Zaviezo, T. 2023. *Sustainable use and conservation of microbial and invertebrate biological control agents and microbial biostimulants.* Background Study Paper No. 71. FAO Commission on Genetic Resources for Food and Agriculture. Rome, FAO. https://doi.org/10.4060/cc3571en

[23] Csorba, C., Hackl, E., Reichenauer, T., van der Putten, W. & Sessitsch, A. 2024. *Sustainable use and conservation of soil microorganisms and invertebrates contributing to bioremediation and nutrient cycling.* Background Study Paper No. 74. FAO Commission on Genetic Resources for Food and Agriculture. Rome, FAO. https://doi.org/10.4060/cd0147en

[24] Huws, S.A., Oyama, L.B. & Creevey, C.J. 2024. *Sustainable use and conservation of microorganisms of relevance to ruminant digestion*. Background Study Paper No. 75. FAO Commission on Genetic Resources for Food and Agriculture. Rome, FAO. https://doi.org/10.4060/cd0155en

preserved collections, at local, national and global levels. It highlighted the need to partner with other organizations, such as GBIF, in increasing the coverage of collections related to agriculture, forestry and fisheries in the Global Registry of Scientific Collections (GRSciColl).

51. It recommended that FAO continue to assist countries to consider, in the development and implementation of access and benefit-sharing legislation or regulatory requirements, the importance of MIGR and their special role for food security, and stressed the need for open exchange of basic sequence information required for specimen identification. It recommended that the Commission support policies to facilitate the exchange of biomaterial for the purpose of research that supports food security and human, animal and plant health.[25]

52. While recognizing the importance of addressing MIGR within the specialized work stream of the Commission's MYPOW, the Working Group also stressed the need to manage the various components of biodiversity in an integrated way and go beyond sector-specific strategies. It noted that reversing the ongoing loss of genetic diversity, ensuring its conservation and improving its sustainable use require holistic and cross-sectoral approaches that include actions at genetic, species and ecosystem levels.

53. The Working Group recommended that the model terms of reference for National Focal Points for plant, aquatic and forest genetic resources and for biodiversity for food and agriculture and National Coordinators for animal genetic resources for food and agriculture[26] be amended to apply to National Focal Points for MIGR.

X. CLIMATE CHANGE AND GENETIC RESOURCES FOR FOOD AND AGRICULTURE

54. The Working Group considered the document *Climate change and genetic resources for food and agriculture* [27] and took note of the information documents *Draft baseline report on genetic resources for food and agriculture and climate change*[28] and *FAO's work on climate change*.[29]

55. The Working Group recommended that the Commission invite Members to make use of the FAO tools and guidance on climate change adaptation and mitigation when developing or updating their National Adaptation Plans (NAPs) and Nationally Determined Contributions (NDCs).

56. Furthermore, it took note of the draft baseline report and urged National Focal Points to the Commission that have not yet done so to complete the questionnaire. It also recommended that the draft baseline report be revised in the light of further submissions by National Focal Points to the Commission, for information of the Commission.

57. The Working Group recommended that the global multistakeholder workshop on climate change and GRFA be convened before the Twenty-first Regular Session of the Commission to exchange information and experiences, share views and priorities, and discuss possible changes to the

[25] As stated in the ABS Elements, "[i]t is important to note that there are certain 'upstream' activities that are related to (or carried out in support of) research on MIGR but are not 'utilization' as such, e.g. the maintenance and management of collections for conservation purposes, including storage, rearing, multiplication, identification and evaluation of MIGR. Similarly, the mere description of genetic resources in phenotype-based research, such as morphological analysis or the diagnostic use of a well-known gene sequence for identification, might normally not qualify as utilization. Therefore, not every study of an MIGR may be considered as utilization." FAO. 2019. *ABS Elements*: *Elements to facilitate domestic implementation of access and benefit-sharing for different subsectors of genetic resources for food and agriculture – with explanatory notes*. Rome. https://openknowledge.fao.org/handle/20.500.14283/ca5088en, paragraph 48.

[26] FAO. 2021. *Model terms of reference of the National Focal Points for plant, aquatic and forest genetic resources and for biodiversity for food and agriculture and the National Coordinators for animal genetic resources for food and agriculture.* Rome. https://openknowledge.fao.org/handle/20.500.14283/cb8105en

[27] CGRFA/WG-MIGR-1/24/10.

[28] CGRFA/WG-MIGR-1/24/10/Inf.1.

[29] CGRFA/WG-MIGR-1/24/10/Inf.2.

Voluntary Guidelines to Support the Integration of Genetic Diversity into National Climate Change Adaptation Planning (Voluntary Guidelines),[30] taking into account the findings of the baseline report.

58. It further recommended that the Voluntary Guidelines be revised in light of the baseline report and the outcome of the workshop, for consideration in regional consultations and subsequently by the Working Groups and the Commission.

XI. OPTIONS FOR THE IDENTIFICATION OF NEW AND EMERGING ISSUES

59. The Working Group considered the document *Options for the identification of new and emerging issues*.[31]

60. The Working Group recommended that the Commission, at its forthcoming session, consider the adoption of a new procedure for the ad hoc identification of new and emerging issues.

XII. CLOSING STATEMENTS

61. Mr Leskien thanked all the delegates for their hard work. He noted that the Working Group had achieved tangible results and had provided clear recommendations and clear guidance for the future work of the Commission on MIGR. He highlighted that the session had demonstrated the importance of the conservation, sustainable use and development MIGR, but also the scale of challenges the world is facing. He thanked the Working Group for the fruitful discussions and the detailed comments, which would be considered at the Commission's Twentieth Regular Session scheduled for 24 to 28 March 2025. Furthermore, he thanked the Governments of Canada, Germany, the Kingdom of the Netherlands, Norway and Switzerland for supporting the work of the Commission and its Working Groups and concluded by expressing his gratitude to the Chairperson and the *Rapporteur* for their guidance during the meeting.

62. The Chair thanked all delegates and the *Rapporteur*, as well as the Secretariat and support staff, for their contributions to the success of the session. He concluded by wishing everyone a safe journey home.

[30] FAO. 2015. *Voluntary Guidelines to Support the Integration of Genetic Diversity into National Climate Change Adaptation Planning*. Rome. www.fao.org/documents/card/en/c/290cd085-98f3-43df-99a9-250cec270867

[31] CGRFA/WG-MIGR-1/24/11 Rev.1.

APPENDIX A

AGENDA OF THE FIRST SESSION OF THE INTERGOVERNMENTAL TECHNICAL WORKING GROUP ON MICROORGANISM AND INVERTEBRATE GENETIC RESOURCES FOR FOOD AND AGRICULTURE

1. Election of Chairperson, Vice-Chairperson(s) and *Rapporteur*
2. Adoption of the agenda and timetable
3. Microorganisms used in food processing and agro-industrial processes
4. Edible fungi and invertebrates used as dietary components of food/feed
5. Bioremediation and nutrient cycling soil microorganisms and invertebrates
6. Microorganisms relevant to ruminant digestion
7. Possible modalities of a global pollinator platform
8. Microbial and invertebrate biological control agents and microbial bio-stimulants
9. Review of the Work Plan for the Sustainable Use and Conservation of Microorganism and Invertebrate Genetic Resources for Food and Agriculture
10. Climate change and genetic resources for food and agriculture
11. Options for the identification of new and emerging issues
12. Any other matters
13. Adoption of the Report

APPENDIX B

MEMBERS AND ALTERNATES OF THE INTERGOVERNMENTAL TECHNICAL WORKING GROUP ON MICROORGANISM AND INVERTEBRATE GENETIC RESOURCES FOR FOOD AND AGRICULTURE, ELECTED BY THE COMMISSION AT ITS NINETEENTH REGULAR SESSION

Composition (no. of countries per region)	*Country*
Africa (5)	Cameroon Côte d'Ivoire Namibia Niger South Sudan *First Alternate*: Malawi *Second Alternate:* Mali
Asia (5)	Bangladesh Japan Philippines Republic of Korea Thailand *First Alternate*: Malaysia *Second Alternate:* Bhutan
Europe (5)	Czechia Finland Netherlands (Kingdom of the) Spain Sweden *First Alternate:* Belgium *Second Alternate:* United Kingdom of Great Britain and Northern Ireland
Latin America and the Caribbean (5)	Argentina Brazil Jamaica Mexico Panama *First Alternate:* Costa Rica *Second Alternate:* Chile
Near East (4)	Egypt Kuwait Saudi Arabia Qatar *First Alternate:* Sudan *Second Alternate*: Oman
North America (2)	United States of America Canada
Southwest Pacific (2)	Samoa Fiji *First Alternate*: Papua New Guinea *Second Alternate*: Vanuatu

APPENDIX B

LIST OF DOCUMENTS

Working and information documents

Election of Chairperson, Vice-Chairperson(s) and *Rapporteur*	**CGRFA/WG-MIGR-1/24/1**
Statutes of the Intergovernmental Technical Working Group on Microorganism and Invertebrate Genetic Resources for Food and Agriculture	CGRFA/WG-MIGR-1/24/1/Inf.1
Provisional Agenda	**CGRFA/WG-MIGR-1/24/2**
Provisional annotated agenda and timetable	**CGRFA/WG-MIGR-1/24/2 Add.1**
List of documents	CGRFA/WG-MIGR-1/24/2/Inf.1
Microorganisms used in food processing and agro-industrial processes	**CGRFA/WG-MIGR-1/24/3 Rev.1**
Draft study on the sustainable use and conservation of fermentation-associated microorganisms within the agrifood system	CGRFA/WG-MIGR-1/24/3/Inf.1
Edible fungi and invertebrates used as food/feed	**CGRFA/WG-MIGR-1/24/4 Rev.1**
Draft study on the sustainable use and conservation of edible fungi and invertebrates used as dietary components of food/feed	CGRFA/WG-MIGR-1/24/4/Inf.1
Bioremediation and nutrient cycling soil microorganisms and invertebrates	**CGRFA/WG-MIGR-1/24/5**
Microorganisms relevant to ruminant digestion	**CGRFA/WG-MIGR-1/24/6**
Possible modalities of a global pollinator platform	**CGRFA/WG-MIGR-1/24/7**
Microbial and invertebrate biological control agents and microbial biostimulants: follow-up	**CGRFA/WG-MIGR-1/24/8**
Review of the Work Plan for the Sustainable Use and Conservation of Microorganism and Invertebrate Genetic Resources for Food and Agriculture	**CGRFA/WG-MIGR-1/24/9 Rev.1**
Climate change and genetic resources for food and agriculture	**CGRFA/WG-MIGR-1/24/10**
Draft Baseline review of genetic resources for food and agriculture and climate change	CGRFA/WG-MIGR-1/24/10/Inf.1
FAO's work on climate change	CGRFA/WG-MIGR-1/24/10/Inf.2
Options for the identification of new and emerging issues	**CGRFA/WG-MIGR-1/24/11 Rev.1**

Other documents

Report of the Nineteenth Regular Session of the Commission on Genetic Resources for Food and Agriculture
Work plan for the Sustainable Use and Conservation of Micro-organism and Invertebrate Genetic Resources for Food and Agriculture
Model terms of reference of the National Focal Points for plant, aquatic and forest genetic resources and for biodiversity for food and agriculture and the National Coordinators for animal genetic resources for food and agriculture

Background Study Papers

Sustainable use and conservation of microorganisms of relevance to ruminant digestion	Background Study Paper No.75
Sustainable use and conservation of soil microorganisms and invertebrates contributing to bioremediation and nutrient cycling	Background Study Paper No.74
Sustainable use and conservation of invertebrate pollinators	Background Study Paper No. 72
Sustainable use and conservation of microbial and invertebrate biological control agents and microbial biostimulants	Background Study Paper No. 71