UNIVERSITÉ LAVAL | Québec | Food and Agriculture Organization of the United Nations | Convention on Biological Diversity

Technical roadmap

Agriculture, Biodiversity and Food Security: from Commitments to Actions

International symposium Agriculture, Biodiversity and Food Security: From Commitments to Actions

Co-organized by Université Laval,
the Ministry of International Relations
and La Francophonie of Quebec,
the Food and Agriculture Organization of the United Nations
and the Secretariat of the Convention on Biological Diversity
in Quebec City, Canada, from 30 April to 2 May 2024.

Preamble

Co-chairs of the international symposium: Mr Ibrahim Coulibaly,[1] Ms Geneviève Parent,[2] Mr François Pythoud[3]

The international symposium "Agriculture, Biodiversity and Food Security: from commitments to actions" co-organized by Université Laval (UL),[4] the Ministry of International Relations and La Francophonie of Quebec (MRIF),[5] the Food and Agriculture Organization of the United Nations (FAO)[6] and the Secretariat of the Convention on Biological Diversity (SCBD)[7] was held in Quebec City, Canada, from 30 April to 2 May 2024.

More than 250 participants from 39 countries, 30 percent of them from the agricultural sector, came together for the symposium. Farmers, scientists, technicians and local elected officials were among the 67 speakers who shared their experience and expertise. The programme of the symposium is provided in Appendix A. Video recordings are accessible via the website of Université Laval.[8]

The recent adoption of the Kunming-Montreal Global Biodiversity Framework (KM GBF)[9] presents an immediate opportunity to accelerate the implementation of solutions that adapt or transform agrifood systems to increase their sustainability and resilience, while also contributing to efforts to adapt to climate change.

Implementing the KM GBF requires the involvement of stakeholders from the various sectors of agriculture (crop and livestock production, aquaculture, fisheries, forestry). This technical road map is intended to facilitate the efforts of these sectors to meet relevant targets. The document aims to promote the implementation of the KM GBF and, more specifically, the integration of the conservation and sustainable use of biodiversity into agriculture. It incorporates contributions gathered from symposium participants and via a public consultation involving a large number of stakeholders that was held prior to the symposium. It sets out in a clear and concise manner the proposed priorities for action in terms of opportunities, constraints and challenges.

1 President of the Pan-African Farmers' Organization Exchange Platform (PAFO).

2 Professor holding the Legal Research Chair in Food Diversity and Security at Université Laval's Faculty of Law.

3 Independent advisor on Food, Biodiversity and Sustainable Development and former ambassador and permanent representative of Switzerland to the United Nations in Rome (FAO, IFAD, WFP).

4 https://www.chaire-diversite-alimentaire.ulaval.ca/en/chaire; https://www.esei.ulaval.ca/en

5 https://www.quebec.ca/gouvernement/ministere/relations-internationales

6 https://www.fao.org/fao-office-climate-change-biodiversity-environment/en

7 https://dev-chm.cbd.int/secretariat

8 https://www.chaire-diversite-alimentaire.ulaval.ca/actualites/les-sessions-du-colloque-international-absa-sont-disponibles-sur-youtube

9 https://www.cbd.int/gbf; https://www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf

Web interface "Agriculture, Biodiversity and Food Security: from commitments to actions"

A key product of the Symposium is a web interface, hosted by the Legal Research Chair in Food Diversity and Security of Université Laval,[10] that compiles all experiences and solutions taken from the contributions made before and during the symposium that illustrate the targets of the KM GBF with relevance to agriculture and proposed priority actions of the technical roadmap.

These include 128 contributions received before the event via the "call for experiences, best practices and scalable solutions for the integration of biodiversity into agriculture" launched on FAO's FSN Forum enriched the technical roadmap. These contributions, from 72 countries and all regions of the world, are available on the web interface, on the FSN Forum website,[11] and in the proceedings of the call for experiences.[12]

Interactions between agriculture and biodiversity

Agriculture depends on biodiversity (in its three dimensions – diversity of ecosystems, diversity of species and diversity within species). However, through its use of terrestrial and aquatic ecosystems, agriculture is also the sector that has the greatest impact on biodiversity. The many interactions involved are not always well understood. While the adoption of certain agricultural practices and techniques has negative effects on biodiversity, sustainably managed agrifood systems are also an important source of solutions to the challenges associated with the Sustainable Development Goals[13] – food security, nutrition, biodiversity, climate, livelihoods and water.

Agricultural stakeholders play key roles in the promotion, conservation and sustainable management of biodiversity. These roles are often poorly understood or neglected in national and international processes, including biodiversity-related processes. Better communication and dissemination of information on the roles of agricultural stakeholders are essential. It is also crucial to ensure that there is effective communication on the constraints and trade-offs faced by farmers, livestock breeders, foresters, fish farmers and fish harvesters in their efforts to produce sustainably and meet society's needs while continuing to make a living from their activities. Sectors such as environment, land-use planning, trade and market, health and education must also be called upon not only to recognize the contributions of agricultural-sector actors to the implementation of the Sustainable Development Goals and the KM GBF but also to formulate policies and take decisions that promote sustainability in agricultural sectors.

10 https://interfaceabsa-ulavalchaireddsa.com/
11 https://www.fao.org/fsnforum/call-submissions/solutions-integration-biodiversity-agriculture
12 https://assets.fsnforum.fao.org/public/resources/2024-04/PROCEEDINGS%20REPORT_CALL%20BIODIVERSITY_EN.pdf
13 https://www.un.org/sustainabledevelopment/

Cross-cutting conditions and considerations

The technical roadmap provides a framework for the agricultural sectors and recognizes the important roles the various actors in these sectors – including individual farmers and groups of farmers (e.g. cooperatives and associations), the private sector, Indigenous Peoples, local communities, women, young people, consumers and researchers – have to play in efforts to meet the targets of the KM GBF. The priority actions proposed are guided by cross-cutting conditions and considerations identified by key stakeholders.

Given the central role that farmers play in the conservation and sustainable use of biodiversity and in food security, their concerns and interests must be at the centre of agricultural sector policies and instruments aimed at preserving biodiversity while providing adequate livelihoods. The vast majority of farmers operate small, often family and subsistence, farms. These exist in a variety of different contexts, and each has its own environmental, socio-economic and cultural characteristics and a particular set of needs.

The actions contained in the roadmap are informed by local, traditional and Indigenous knowledge. They aim to foster the integration of biodiversity into agricultural practices by promoting cooperation, collaboration and good governance.

The challenges faced by the agricultural sector call for a holistic, ecosystem-based approach that encompasses the ties between agricultural production systems, food systems and consumers. Certain issues, such as climate change and invasive species, require approaches that extend beyond farms and national borders. Actions need to integrate spatial and temporal scales at many levels, including farm level, farming community and landscape levels, and international level. Temporal considerations include the need for sustainability and continuity of practices, methodologies, research programmes, policies and funding.

The implementation of the KM GBF by agricultural sectors also contributes to efforts to achieve the Sustainable Development Goals and meet commitments under the United Nations Framework Convention on Climate Change. The technical roadmap takes account of the instruments adopted by various intergovernmental forums to support the implementation of the KM GBF.

The 23 targets of the KM GBF[14] are interdependent and are all linked in one way or another to agricultural sectors. Targets 1, 2, 3, 4, 7, 8, 10, 11, 14, 16 and 18 are particularly explicit with regard to their links to agricultural sectors. Some cross-cutting targets, notably Targets 20, 21, 22 and 23, are also highly relevant.

14 https://www.cbd.int/gbf/targets


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Components of the technical roadmap

A **Efforts to conserve and sustainably use biodiversity and integrate it into the agricultural sector**

1. Updating knowledge on biodiversity for food and agriculture
2. Adoption of sustainable agricultural practices that respect biodiversity

B **Constraints, opportunities and challenges**

3. Constraints, opportunities and challenges

C **Policies and instruments promoting the conservation and sustainable use of biodiversity for food and agriculture**

4. Implementation of global instruments and policy tools for the sustainable management of biodiversity – from international to national level
5. Policies, instruments and programmes within countries: tools and solutions for implementation and mainstreaming – coordinated actions

A Efforts to conserve and sustainably use biodiversity and integrate it into the agricultural sector

1. Updating knowledge on biodiversity for food and agriculture[15]

Information on the status of biodiversity for food and agriculture is regularly updated by countries. The global reports on the state of animal, plant, aquatic and forest genetic resources and biodiversity for food and agriculture produced by the FAO Commission on Genetic Resources for Food and Agriculture[16] are based on national reports. Other fora, such as the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), produce reports on the state of biodiversity and ecosystem services important to agriculture.

The participation of all relevant stakeholders is required in order to increase knowledge of the resources covered in these reports and to strengthen the conservation and sustainable use of biodiversity and its integration into the agricultural sector. Some governance structures, in the form of multidisciplinary committees at national, regional and even local levels, have been put in place to encourage participation of this kind. Research, gender and Indigenous and traditional knowledge are also considered in the production of the reports.

15 This section mainly concerns KM GBF Targets 4, 6, 7, 8, 10, 11, 13 and 14.

16 https://www.fao.org/cgrfa/assessment/en

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Priority actions

- Improve the involvement of stakeholders, including farmers, in the preparation of national reports and ensure greater stakeholder participation in the validation of such reports.
- Promote the inclusion of biodiversity-related variables in national agricultural surveys and censuses.
- Develop indicators that are useful and meaningful for farmers, simple, inexpensive and make it possible to understand, know and recognize farmers' actions and the results they achieve.
- Facilitate participatory systems that involve stakeholders, particularly farmers and scientists, in the collection of data on biodiversity in agricultural systems while preserving participants' anonymity and protecting agricultural communities' data ownership and control of data usage.
- Draw on traditional, Indigenous and local knowledge, and develop innovative practices and technologies adapted to new modes of production (e.g. use of information technology, satellite technology and bio-inputs).
- Carry out monitoring and evaluation throughout the knowledge cycle, from knowledge generation to the development of methodologies and practices, and the reporting that feeds this knowledge, whether on biodiversity, genetic resources or ecosystem services (e.g. assessment of soil conditions or pollinator populations) or on themes such as threats, pests, diseases or invasive species.
- Develop evidence-based information from the data collected and communicate it to foster informed decision-making.
- Develop collaborative systems of training, access and exchange of technologies and information for farmers.

2. Adoption of sustainable agricultural practices that respect biodiversity[17]

Target 10 of the KM GBF lists "biodiversity friendly practices, such as sustainable intensification, agroecological and other innovative approaches contributing to the resilience and long-term efficiency and productivity of these production systems and to food security, conserving and restoring biodiversity and maintaining nature's contributions to people, including ecosystem functions and services". Target 7 aims to reduce the risks associated with pollution, in particular by reducing excess nutrients lost to the environment by half, by reducing the overall risk from pesticides, in particular through integrated pest management measures, and by preventing, reducing and working towards eliminating plastic pollution.

Faced with a production challenge, farmers are encouraged to adopt and adapt sustainable methods that are biodiversity friendly,[18] many of which are based on traditional techniques. Biodiversity offers opportunities for the sustainable transformation of agriculture and food systems. Sustainable production is characterized by a more systemic/ecosystemic approach to natural-resources management and by the mobilization of ecosystem services. It draws on the environmental, institutional and social sciences. It generally contributes to resilience in the face of climate change and to the promotion of soil health, diversity and fertility. In practice, distinctions are rarely made between actions targeting climate adaptation and those targeting biodiversity.

To adopt and adapt sustainable practices, farmers require sufficient financial, human and organizational resources to establish the relevant technical and operational capacities. As essential players in the application of these practices, committed farmers must be supported in their approach. Other stakeholders such as investors, businesses and banks also play important roles in making such practices financially profitable. The use of modern and effective tools for measuring and monitoring the impact of agricultural practices on biodiversity makes it possible to establish prices and values for good agricultural practices, for the protection of nature, water and soils, and for other ecosystem services.

Research must also be leveraged and strengthened to promote sustainable practices and must be conducted in collaboration with farmers at farm and landscape level, while accounting for gender as well as for Indigenous and traditional knowledge.

17 This section mainly concerns KM GBF Targets 1, 2, 3, 4, 7, 8, 10 and 11.

18 Although the "biodiversity friendly practices" mentioned in the wording of Target 10 are not officially defined, Chapter 5 of *The State of the World's Biodiversity for Food and Agriculture* (FAO, 2019) describes more than 20 of these practices and approaches.

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Priority actions

- Recognize that farmers are at the heart of sustainable practices.
- Facilitate farmers' adoption and adaptation of biodiversity-friendly agricultural practices by building on successful experiences (e.g. farmer field schools) and adapting them to current needs and technological innovations.
- Integrate biodiversity conservation, use and sustainable management into extension and technical support programmes.
- Train and strengthen extension services and farmers in new knowledge and technologies while emphasizing the transfer of knowledge between researchers, technicians and farmers and other stakeholders as well as the sharing of experiences between farmers.
- Increase the budget for research, capacity development and transfer of knowledge, technology and innovation on biodiversity-friendly agricultural practices, with a view to promoting continuity of efforts to improve food and nutritional security, productivity and profitability in changing and unpredictable environmental contexts.
- Collect data and develop advocacy, including cost–benefit analyses, to demonstrate the advantages that stakeholders, especially farmers, can derive from adopting biodiversity-friendly practices.
- Assess and monitor the uptake of biodiversity-friendly practices and their impact at farm level in terms of biodiversity and sustainability (including provision of indicators), and thereby contribute to the monitoring of KM GBF Target 10
- Pay particular attention to soil health, fertility and biodiversity in research and in the implementation of agricultural practices that are biodiversity friendly.
- Promote the testing of practices and solutions at local and territorial levels to evaluate their effectiveness and viability before deploying them at larger scales.
- Promote the sharing of data and information with farmers through coordination, cooperation and collaboration networks, platforms and other systems, and encourage dialogue between the different actors involved. In doing so, also encourage the collaborative generation of solutions adapted to specific contexts.
- Improve access to markets, including local markets, and facilitate access to goods, infrastructure, inputs and technologies that promote reconversion and/or transition to sustainable production systems, particularly those that are agroecological in nature, and support this transition.
- Strengthen the use of participatory guarantee systems for sustainable agroecological production systems.
- Strengthen the inclusion of women and young people in agroecological production processes and the management of biodiversity in agroecosystems.
- Sustain achievements in the adoption of biodiversity-friendly practices and the transformation of production systems by promoting economic viability, and use planning, coordination and partnership to drive increases in scale.

B Constraints, opportunities and challenges

3. Constraints, opportunities and challenges[19]

To further integrate biodiversity into the agricultural sectors while also taking climate issues, the biotic and abiotic specificities of the environment and land degradation into account, there is a need also to address threats to biodiversity and the drivers of biodiversity loss. Constraints and opportunities are multiple – economic, financial, land, organizational or conceptual, climatic, even institutional and political (this last factor is covered under component C). The priority actions aim to overcome these constraints.

Priority actions

- Valorize the role of farmers and recognize their expertise and their roles in social cohesion and community development.
- Foster farmers' participation in the development of innovative approaches and technologies that allow integration of biodiversity and ecosystems health while ensuring that food production and nutrition are taken into account.
- Identify and strengthen positive incentives for the conservation and sustainable use of biodiversity, taking into account local contexts and priorities, and promoting the transformation of production systems and associated distribution networks.
- Analyse support systems for agriculture and food systems, including subsidies and labels, in terms of their impact on biodiversity and enable a review of measures that affect the adoption of sustainable agricultural practices that integrate biodiversity and resilience to climate change.
- Ensure a fair income for farmers, taking into account their good practices and the preservation of biodiversity and ecosystem services and enabling them to make a living from their activities.
- Develop short value chains and peri-urban agriculture that allow farmers to obtain fair prices for their products.
- Explore innovative microcredit and financing mechanisms, including crowdfunding, the creation of specific funds or co-financing by philanthropists and the private sector.
- Develop strategies and mechanisms (including agricultural insurance mechanisms) for sharing risks faced by producers when adopting new practices and approaches.
- Develop an ecological economy based on a systemic approach and economic, cultural and social evaluation of ecosystem services.
- Increase consumers' awareness and recognition of biodiversity-friendly farming practices to facilitate informed choices: developing product identification systems (labels, territorial identification, etc.), launching communication campaigns and highlighting the role of consumers as levers in the production chain.

19 This section concerns all the targets discussed during the symposium and in particular KM GBF Targets 16, 18 and 14.

B Policies and instruments promoting the conservation and sustainable use of biodiversity for food and agriculture

4. Implementation of global instruments and policy tools for the sustainable management of biodiversity – from international to national level[20]

The implementation of a number of global instruments negotiated under the auspices of FAO contributes to the achievement of the KM BGF. Some, such as the International Plant Protection Convention and the Rotterdam Convention on Hazardous Chemicals and Pesticides, relate to threats to biodiversity. Others address a variety of biodiversity-related themes. For example, the Commission on Genetic Resources for Food and Agriculture adopts strategies, action plans and voluntary guidelines to facilitate countries' work on biodiversity of relevance to food and agriculture and related issues (e.g. climate change and nutrition) in line with national development objectives.[21] These instruments are shared with other international bodies in order to increase awareness among countries.

Priority actions

- Promote the integration of biodiversity for food and agriculture into sectoral policies relating to the environment (e.g. National Biodiversity Strategies and Action Plans [NBSAPs]), climate (National Adaptation Plans [NAPs]), health and nutrition – and harmonize and increase the coherence of existing political and legal frameworks.
- Facilitate implementation by translating instruments adopted at global, regional or national levels – NBSAPs, action plans, codes of conduct, nationally determined contributions, etc. – into language tailored for specific stakeholders.
- Ensure increased participation of farmers in the design and implementation of comprehensive plans and in the definition of national contributions and their implementation, including by supporting the development of farmer organizations and coalitions capable of advocating for farmers' interests with political decision-makers; highlight the contributions of farmers, including smallholders, as well as those of local communities and Indigenous Peoples, to the integration of biodiversity into agriculture.
- Encourage the review by stakeholders, particularly producers, of the implementation of global plans and instruments.
- Strengthen political and institutional support for the implementation activities of the above-mentioned actors.
- Improve the visibility of programmes and funds resulting from global plans and instruments, and facilitate stakeholders' access to relevant funds, particularly through technical project development assistance.
- Pay particular attention to coordinated actions aimed at advancing the agendas of conventions related to the environment and agricultural sectors in the context of food security.

20 This section concerns KM GBF Targets 1, 2, 10, 14 and 18..

21 Global Plans of Action (fao.org); Codes, standards and guidelines (fao.org).

5. Policies, instruments and programmes within countries: tools and solutions for implementation and mainstreaming – coordinated actions22

Countries adopt and develop their own policies, instruments and programmes to facilitate the adoption of biodiversity-friendly and climate-friendly agricultural practices. Coherent policies and coordinated actions also make it possible to support farmers that are committed to the development of practices that combine economic, social and environmental performance.

Priority actions

- Encourage greater participation of farmers and their associations in the development and implementation of policies and regulations concerning biodiversity-friendly agricultural practices.
- Promote administrative simplification.
- Promote spatial planning that is friendly to biodiversity, land, soil and water.
- Facilitate the implementation of existing policies, and strengthen policy coherence between sectors and between national, regional or global levels; take trade-offs into account and prioritize policies that contribute to the achievement of multiple objectives.
- Align and harmonize laws and regulations targeting different territories within the same country.
- Promote collaboration and cooperation between different actors, in particular between farmers, scientists and decision-makers, in the implementation of policies, instruments and programmes.
- Strengthen governance, communication, education, research and data-collection capacities.
- Promote the emergence and sustainability of spaces, institutions, multisectoral governance structures, dialogue, prioritization and co-construction of solutions between actors and between generations, allowing full promotion of the perspectives and roles of women.
- Use local and national data to support informed decision-making, design of programmes and instruments, research, innovation, communication campaigns, educational programmes and technical and extension services.
- Support participatory and innovative land-tenure models that promote access to and protection of farmers' lands and integrate a balanced approach of land-use planning and development.
- Promote and support collective approaches at landscape and territory levels.
- Adopt "One Health" approaches that integrate human health and the environment.

22 This section essentially concerns Target 14, which integrates the concerns of the other targets.


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Implementation

Considerations for implementing the technical roadmap

This technical roadmap is intended (particularly but not exclusively) for all agricultural-sector stakeholders. Its purpose is to facilitate collaboration and collective action at all levels (territorial, sectoral, local, national and global). Its implementation will require adequate human and financial resources, innovative organizational methods and capacity building. Data, information and knowledge will need to be shared with different audiences. Changes in governance, policies and regulations are also likely to be required. Scientific research as well as Indigenous and traditional knowledge need to be harnessed to create synergies that favour biodiversity. Gender issues must also be taken into account. All processes put in place must be transparent, multidisciplinary, multistakeholder, cross-cutting, inclusive and participatory.

Key aspects of the implementation of the technical roadmap will be, on the one hand, to ensure increased participation of farmers and foster the involvement of women, youth, Indigenous Peoples and local communities in the development of innovative approaches, and, on the other hand, to develop an enabling environment for the implementation of actions.

Implementation must take into account the specificities of sites and contexts – including financial constraints, producers' profiles and regulatory frameworks – and ensure all stakeholders' involvement. It must also promote sustained adoption over the long-term by a succession of farmers and young people. Finally, it must involve monitoring measures that include indicators that are meaningful and useful for both farmers and other stakeholders.

Annex 1

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Speakers and panelists, by session

Opening of the symposium, welcoming speeches

Mr. Jonathan Paquin, Director of the Graduate School of International Studies (ESEI) at Université Laval

Mr. François Gélineau, Vice-Rector, International Affairs and Sustainable Development, Université Laval

Mr. Kaveh Zahedi, Director of the Office of Climate Change, Biodiversity and Environment at the Food and Agriculture Organization (FAO)

Mr. David Cooper, Acting Executive Secretary of the Secretariat of the Convention on Biological Diversity (CBD)

Mr. Alain Sans Cartier, Quebec Deputy Minister of International Relations and La Francophonie, MRIF

Minister André Lamontagne, Minister for Agriculture, Fisheries and Food, MAPAQ

Session
Agriculture, Biodiversity and Food Security: Commitments

Frédéric Castell and Julie Bélanger, Food and Agriculture Organization of the United Nations (FAO)

Monica Kobayashi, Secretariat of the Convention on Biological Diversity

Marcel Beukeboom, Permanent Representative of the Kingdom of the Netherlands to the UN Rome-based agencies and President of the Group of Friends of Biodiversity

Martin Caron, Union des producteurs agricoles du Québec

Ibrahima Coulibaly, PanAfrican Farmers Organization, Senegal (co-president of ABSA Symposium)

Marcos Alvarez, Pest Management Centre, Agriculture and Agri-Food Canada, Canada

Normita G. Ignacio, Southeast Asia Regional Initiatives for Community Empowerment (SEARICE), Philippines

Session
Agriculture, Biodiversity and Food Security: Actions

Round table 1 - The voice of producers

Geneviève Parent, Université Laval (co-president of ABSA Symposium), facilitator

Martin Caron, Union des producteurs agricoles du Québec, Canada, panelist

Ibrahima Coulibaly, PanAfrican Farmers Organization, Senegal (co- president of ABSA Symposium), panelist

Agustina Diaz Valdez, World Farmers Organization, Argentina, panelist

Jean-Martin Fortier, Institut jardinier-maraîcher, Canada, panelist

Boubacar Maiga, Réseau de Communication sur le Pastoralisme, Burkina Faso, panelist

Round Table 2 - National perspectives

François Pythoud, PAD Conseil (co-president of ABSA Symposium), facilitator

Braulio Ferreira De Souza Dias, Ministry of the Environment and Climate Change, Brasil, panelist

Carla Douglas, Ministry of agriculture, fisheries and mining, Jamaica, panelist

Desterio Ondieki Nyamongo, Kenya Agricultural and Livestock Research Organization, Kenya, panelist

Khaled Abulaila, National Agricultural Research Center, Jordan, panelist

Marcos Alvarez, Pest Management Centre, Agriculture and Agri-Food Canada, Canada, panelist

Sikeade Egbuwalo, Federal Ministry of Environment, Nigeria, panelist

Session
Reduced pollution, halving nutrient loss and pesticide risk – GBF target 7

Monica Kobayashi, Secretariat of the Convention on Biological Diversity, co-facilitator

Kader Léonine Modou, Université Laval, co-facilitator

Cargele Masso, CGIAR Environmental Health & Biodiversity Platform, Kenya

Geneviève Ndjiki Wéladji, Agriculture, Action for Sustainable Development Cameroun & Agroecology coalition, Cameroon

Kris Wyckhuys, Chrysalis Consulting, Belgium

Marcos Alvarez, Pest Management Centre, Agriculture and Agri-Food Canada, Canada

Thomas Segretain, farmer, France

Session
The resilience of farms and farming systems to climate – GBF target 8

Awa Mbodj, Food and Agriculture Organization of the United Nations (FAO), co-facilitator

Rachel Lévesque, Ministère des Relations internationales et de la Francophonie of Québec, co-facilitator

Abou Ba, SOCODEVI, Senegal

Julie Lafortune, Université du Québec en Outaouais, Canada

Mélanie Morel, UPA-Développement international, Canada

Miriam Nobre, SOF Sempreviva Organização Feminista, Brasil

Yasmina El Balhoul, National Institute for Agricultural Research, Morocco

Session
Landscapes and mosaics of agricultural production systems – GBF targets 1-2-3

Vincent Gitz, CIFOR-ICRAF, co-facilitator

Marlen León-Guzmán,Université Laval, co-facilitator

Emem Umoh, Women in Nature Conservation Organization, Nigeria

Felipe Villela, The Landbanking Group, Brasil

Abdelhakim Issaoui, natinonal focal point, SIPAM/GIAHS, Tunisia

Michael Jeker, Agriculteur, Réserve mondiale de la Biosphère du lac Saint-Pierre, Canada

Philippe Gamen, Fédération des Parcs Naturels Régionaux de France, France

Thierry Caquet, Institut national de recherche pour l'agriculture, l'alimentation et l'environnement (INRAE), France

Session
Sustainable use of ecosystem services – GBF target 11

Frédéric Castell, Food and Agriculture Organization of the United Nations (FAO), co-facilitator

Marlen León-Guzmán, Université Laval, co-facilitator

Franck Stefani, Agriculture and Agri-Food Canada, Canada

Kris Wyckhuys, Chrysalis Consulting, Belgium

Michael Jeker, Ferme Cristallina, Canada

Sylvie Kassongo, farmer CPF, Burkina Faso

Vanessa Audet-Giroux, Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec, Canada

Session
Conserving and sustainably using genetic resources for food and agriculture – GBF target 4

Marcos Alvarez, Pest Management Centre, Agriculture and Agri-Food Canada, co-facilitator

Cargele Masso, CGIAR Environmental Health & Biodiversity Platform, Kenya, co-facilitator

Hassane Mahamadou Sanoussi, Mooriben, Niger

Hugo Martorell, SeedChange, Canada

Mario Duchesne, Association de mise en valeur de la race bovine canadienne, Canada

Sognigbe N'Danikou, World Vegetable Center, Tanzania

Vincent Dion and Andicha Picard, Nation huronne-wendat, Canada

Yasmina El Balhoul, National Institute for Agricultural Research, Morocco

Session
Sustainable management of agricultural and aquaculture areas through biodiversity- friendly practices – GBF target 10

Lionelle Ngo-Samnick, Institut de la Francophonie pour le développement durable, co-facilitator

François Pythoud, PAD Conseil (co-president of ABSA Symposium), co-facilitator

Abou Ba, SOCODEVI, Sénégal

Alain Olivier, Université Laval, Canada

Christian Taillon, Ferme Taillon, Canada

Felipe Villela, The Landbanking Group, Brasil

Lucas Garibaldi, Universidad Nacional de Río Negro – CONICET, Argentina

Nadine Azzu, consultant, Italia

Session
National policy and instruments – GBF target 14

Jean-Frédéric Morin, Université Laval, co-facilitator

Hugo Munoz Urena, Université Laval, co-facilitator

Braulio Ferreira De Souza Dias, Ministry of the Environment and Climate Change, Brasil

Francois Chrétien, Agriculture and Agri-Food Canada, Canada

Geneviève Masse, Ministère de l'Agriculture, des Pêcheries et de l'Alimentation of Québec, Canada

Lloyd C. Day, Inter-American Institute for Cooperation on Agriculture, Costa Rica

Sikeade Egbuwalo, Federal Ministry of Environment, Nigeria

Tamisha Lee, Jamaica Network of Women Rural Producers, World Farmers' Organisation, Jamaica

Session
The role of consumers, agrifood value chains and non-market value – GBF target 16

Alexandre Meybeck, Food and Agriculture Organization of the United Nations (FAO) , co-facilitator

Kader Léonine Modou, Université Laval, co-facilitator

Alain Girard, Institut de tourisme et d'hôtellerie du Québec, Canada

Khadim Tine, RENACHAV, Senegal

Mario Duchesne, Association de mise en valeur de la race bovine canadienne, Canada

Miriam Nobre, SOF Sempreviva Organização Feminista, Brasil

Sambatra Kezia Rakotomanga, Young Professionals for Agricultural Development, Madagascar

Sylvie Kassongo, farmer CPF, Burkina Faso

Session
Positive incentives for the conservation and sustainable use of biodiversity and economic performance – GBF target 18

Jérôme Dupras, Université du Québec en Outaouais, co-facilitator

Lionelle Ngo-Samnick, Institut de la Francophonie pour le développement durable, co-facilitator

Brigitte Laliberté, Strategic advisor, agro-biodiversity sectors and cocoa value chain, Italia

Chantal Line Carpentier, United Nations Conference on Trade and Development, Switzerland

Michael David-Smith, Fiducie Pinacle, Canada

Sophia Murphy, Institute for Agriculture and Trade Policy, USA

Session
Implementation of the Global Framework through a Whole-of-society approach – Cross-cutting issues

Jean Lemire, Ministère des Relations internationales et de la Francophonie of Québec, co-facilitator

Hugo Munoz Urena, Université Laval, co-facilitator

Christian Grancher, Communauté Urbaine Le Havre Seine Métropole, France

Elisenda Guillaumes Cullell, Generalitat de Catalunya, Spain

Marie-Josée Asselin, City of Québec, Canada

Normita G. Ignacio, Southeast Asia Regional Initiatives for Community Empowerment (SEARICE), Philippines

Philippe Gamen, Fédération des Parcs Naturels Régionaux de France, France

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Session
Reactions and implementation of the technical roadmap (panel)

Braulio Ferreira De Souza Dias, Director for Biodiversity Conservation and Sustainable Use, Ministry of the Environment and Climate Change of Brasil

Eliane Ubalijoro, Chief Executive Officer, Center for International Forestry Research and World Agroforestry, CIFOR-ICRAF and Director General, ICRAF

Ismahane Elouafi, Executive Managing Director, CGIAR

Janice Bailey, Scientific Director, Fonds de recherche du Québec – Nature et technologies

Kent Nnadozie, Secretary, FAO International Treaty on Plant Genetic Resources for Food and Agriculture

Lloyd C. Day, Deputy Director General, Inter-American Institute for Cooperation on Agriculture

Marcel Groleau, Farmer and President, Agricord

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