



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
الغذية والزراعة
للأمم المتحدة

COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Item 7 of the Provisional Agenda

Sixteenth Regular Session

Rome, 30 January - 3 February 2017

STATUS OF THE COMMISSION'S WORK ON THE CONSERVATION AND SUSTAINABLE USE OF MICRO-ORGANISMS AND INVERTEBRATES

TABLE OF CONTENTS

	Paragraphs
I. Introduction	1 - 2
II. Review of work on micro-organisms and invertebrates.....	3 - 5
III. The way forward	6
IV. Guidance sought.....	7

*This document can be accessed using the Quick Response Code on this page;
an FAO initiative to minimize its environmental impact and promote greener communications.
Other documents can be consulted at www.fao.org*



mr417

I. INTRODUCTION

1. The Commission on Genetic Resources for Food and Agriculture (the Commission), at its Eleventh Regular Session, adopted a Multi-Year Programme of Work which includes micro-organism and invertebrate genetic resources as an area of work.

- At its Twelfth Regular Session, the Commission considered two brief scoping studies describing the main functions and services provided by micro-organisms and invertebrates of relevance to food and agriculture.¹ On the basis of these studies, the Commission agreed to request targeted assessments, in particular of the status and trends in the conservation and use of soil micro-organisms, biological control agents and plant pathogens, in particular of important crops. The Commission also requested an assessment of ecosystem services provided by invertebrates relevant to food and agriculture and further analyses and studies of the role of microorganisms for ruminant digestion, agro-industrial processes, and food processing.
- At its Thirteenth Regular Session, the Commission welcomed progress made in the preparation of the targeted assessments and took note of two studies on the role of climate change for invertebrate and micro-organism genetic resources.² The Commission also welcomed the inclusion of micro-organisms and invertebrates in the report on *The State of the World's Biodiversity for Food and Agriculture* (Report). The Commission agreed to consider, in the future, the preparation of global assessments of micro-organisms and invertebrates and the possible establishment of an intergovernmental technical working group on micro-organism and invertebrate genetic resources.³
- At its Fourteenth Regular Session, the Commission took note of a set of comprehensive background study papers on the role of micro-organisms in food processes⁴ and agro-industrial processes⁵ and for ruminant digestion⁶ and on the role of invertebrates in rice production⁷ and root-crop based systems.⁸ The Commission stressed the importance of microbial and invertebrate diversity for sustainable agriculture and for food and nutrition security and requested further assessments, including of the status of, and trends in, the characterization, conservation and use of soil micro-organisms, biological control agents and plant pathogens for additional major food crops, such as wheat, maize and soybean, with a special emphasis on good agricultural practices favouring the delivery of ecosystem services by beneficial micro-organisms and invertebrates.⁹
- At its last session, the Commission reviewed its work on micro-organisms and invertebrates. The Commission was informed that the *Guidelines for the Preparation of the Country Reports for The State of the World's Biodiversity for Food and Agriculture*¹⁰ invited countries to report on the conservation and use of soil micro-organisms, biological control agents and pathogens and to report on good agricultural practices favouring the delivery of ecosystem services by beneficial micro-organisms and invertebrates.¹¹ The Commission reiterated the importance of microbial and invertebrate genetic diversity, including the role of pollinators, for sustainable agriculture, food security and nutrition. It also noted that bacterial, yeast and fungal genetic

¹ CGRFA-12/09/15.1 and CGRFA-12/09/15.2

² Background Study Papers No. 54 & 57.

³ CGRFA-13/11/Report, section VIII.

⁴ Background Study Paper No. 65.

⁵ Background Study Paper No. 64.

⁶ Background Study Paper No. 61.

⁷ Background Study Paper No. 62.

⁸ Background Study Paper No. 63.

⁹ CGRFA-14/13/Report, section X.

¹⁰ See for example questions 52 and 53 in the *Guidelines for the Preparation of the Country Reports for The State of the World's Biodiversity for Food and Agriculture*, available at:

http://www.fao.org/fileadmin/templates/nr/documents/CGRFA/Guidelines_SOWBFA_E.pdf

¹¹ CGRFA-15/15/19, paragraph 6.

resources used in food processing need to be included in the future work of the Commission.¹² The Commission emphasized the need for the Report to address issues related to micro-organisms and invertebrates and appealed to all FAO Members to provide relevant information in the course of the preparation of their country reports.¹³ It also requested FAO to review the planning of its work on the conservation and sustainable use of micro-organisms and invertebrates following the presentation of the Report to the Commission, preferably at its Sixteenth Regular Session.¹⁴

2. This document reviews the status of the Commission's work on micro-organisms and invertebrates of relevance to food and agriculture. It particularly reports on the sources of information on microbial and invertebrate diversity considered in the preparation of the Report and seeks the Commission's advice on how to address the role of micro-organisms and invertebrates in food and agriculture in its future work.

II. REVIEW OF WORK ON MICRO-ORGANISMS AND INVERTEBRATES

Preparation of *The State of the World's Biodiversity for Food and Agriculture*

3. The Commission's work on micro-organism and invertebrate genetic resources, as summarized above, contributed greatly to the preparation of the Report. Conversely, the preparation of the Report helped in generating information that may be relevant to the Commission's future work on micro-organisms and invertebrates. The document *Preparation of The State of the World's Biodiversity for Food and Agriculture*¹⁵ provides detailed information on the status of preparation of the Report since the Commission's Fifteenth Regular Session, including in areas that are of relevance to micro-organisms and invertebrates, and introduces the draft Report.¹⁶

4. Country reports prepared for the preparation of the Report provide important information on micro-organisms and invertebrates. In addition, the informal regional consultations on the state of biodiversity for food and agriculture held in the different regions helped National Focal Points to share knowledge and information and to identify regional needs and priorities in the following areas: (i) assessment and monitoring; (ii) conservation and sustainable use; (iii) policies, institutions and capacity; and (iv) regional and international cooperation.¹⁷ In addressing issues of relevance to micro-organisms and invertebrates, National Focal Points identified as a priority the establishment of national baselines, in particular for soil organisms and pollinators. Other priorities raised during the regional informal consultations included: the assessment of the impact of management practices on biodiversity for food and agriculture and ecosystem services; the promotion of research on the roles of micro-organisms and invertebrates in food and agriculture, including in soil fertility; strengthening of research networks related to the conservation of micro-organisms and invertebrates; strengthening of policies for the conservation of associated biodiversity, including of pollinators, soil organisms and biological control agents.

5. Obviously, the draft Report also draws on other relevant information, including *The assessment on pollinators, pollination and food production* carried out by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), and information provided by experts and by studies prepared at the request of the Commission. The FAO-hosted International Initiative for the Conservation and Sustainable Use of Pollinators and the International Initiative for the Conservation and Sustainable Use of Soil Biodiversity also provided information. The information drawn from these Initiatives particularly related to the characterization, use and conservation of respectively pollinators and soil organisms, and on agricultural practices that support pollination, soil

¹² CGRFA-15/15/Report, paragraph 66.

¹³ CGRFA-15/15/Report, paragraph 67.

¹⁴ CGRFA-15/15/Report, paragraph 69.

¹⁵ CGRFA-16/17/3.

¹⁶ CGRFA-16/17/Inf.10.

¹⁷ Details on the informal regional consultations are available in the documents CGRFA-16/17/3 and CGRFA-16/17/Inf.11.1 to CGRFA-16/17/Inf.11.6.

fertility and soil health. Expanded progress reports on the two Initiatives are provided in the documents, *Progress of the International Initiative for the Conservation and Sustainable Use of Pollinators*¹⁸ and *Progress of the International Initiative for the Conservation and Sustainable Use of Soil Biodiversity*.¹⁹

III. THE WAY FORWARD

6. *The State of the World's Biodiversity for Food and Agriculture* provides information on the status of, and trends in, the characterization, use and conservation of micro-organism and invertebrate species of relevance to food and agriculture and addresses, to the extent possible, their function in the provision of ecosystem services in and around production systems. The Report also highlights knowledge gaps in these areas and identifies priorities in filling these gaps. In response to the final Report, the Commission may wish to define future priorities regarding micro-organisms and invertebrates.

IV. GUIDANCE SOUGHT

7. The Commission may wish to request FAO to prepare for the Commission's next session a draft work plan for future work on the sustainable use and conservation of micro-organisms and invertebrates, taking into account the findings of the Report as well as any other relevant information.

¹⁸ CGRFA-16/17/Inf.22.

¹⁹ CGRFA-16/17/Inf.23.