



Internal Co-ordination Group for Biotechnology

BIOTECHNOLOGY UPDATE

March 2024 - ICGB Newsletter No. 44



ICGB Newsletter No. 44, March 2024

This newsletter provides up-to-date information on activities related to biotechnology or the life sciences more generally at the Organisation for Economic Co-operation and Development (OECD). It is mainly intended for OECD staff and delegates to OECD meetings who are already familiar with certain aspects of the Organisation's work. We hope that it is also informative for the wider biotech community.

The contents of this 'Biotechnology Update' newsletter have been provided by those members of the OECD Secretariat who are responsible for the various activities. The Secretariat can be contacted via the e-mail address: ehscont@oecd.org. Alternatively, individuals can be contacted via e-mail using the form firstname.lastname@oecd.org (See Who's Who list at the end of the newsletter).

Visit the [OECD Biotechnology Update website](#) to access the latest news and previous editions.

ABOUT OECD'S INTERNAL CO-ORDINATION GROUP FOR BIOTECHNOLOGY (ICGB)

The Organisation for Economic Co-operation and Development (OECD) and its member countries have been addressing issues related to biotechnology since 1982.

From that time, biotechnology has had an increasing impact on the programmes of different sectors at OECD such as: agriculture and trade; environment; science, technology and innovation. In 1993, the Internal Co-ordination Group for Biotechnology (ICGB) was established to facilitate co-ordination among these sectors.

Jane Richardson, Head of OECD's Biosafety, Novel Foods/Feeds Safety and Pesticides Programmes is the Executive Secretary of the ICGB, and the editor of the ICGB Newsletter with the contribution of Satoshi Nakano.

Contacts : Jane Richardson, Satoshi Nakano (ENV/EHS)

GREEN GROWTH AND SUSTAINABLE DEVELOPMENT



The 2023 OECD Green Growth and Sustainable Development (GGSD) Forum on “[Navigating the twin transitions: Going green and digital](#)” was held on 21-22 November 2023 at the OECD Conference Centre.



Under this overarching theme, the Forum addressed the joint impact of the twin transitions on competitiveness of sectors and regions, labour conditions, and how to ensure that no-one is left behind. The Forum also focused on how digital technologies can improve the design, monitoring and enforcement of environmental policies, and how SMEs can emerge more resilient, innovative and competitive from these societal transformations. Finally, the Forum discussed the role of digital technologies in ensuring smart and sustainable cities, and the possible implications for international cooperation on green growth of the changes in the international landscape since the adoption of the UN 2030 SDG Agenda and the Paris Agreement.

The recordings of the sessions are available on the Forum website.

Contacts: Ben Henderson, Enrico Botta (ENV)

Website: <https://www.oecd.org/greengrowth/ggsd-forum.htm>

FOOD SYSTEMS

Background

The term “food systems” refers to all the elements and activities that relate to the production, processing, distribution, preparation and consumption of food, and the effects of these activities. The emphasis on “food systems” highlights the importance of potential synergies and trade-offs across different policy domains which have often been treated in silos - e.g. public health and nutrition, the environment, poverty and rural development. Food systems matter not only for food security and nutrition, and for the livelihoods of those involved in them, but also for environmental sustainability. The United Nations organised a UN Food Systems Summit in September 2021, and OECD published a major report on *Making Better Policies for Food Systems* (2021).

Following the publication of *Making Better Policies for Food Systems*, OECD work on food systems tackled the question of **evidence gaps** on food systems. A first paper, [Overcoming Evidence Gaps on Food Systems](#), set out the challenges. Four papers then explore evidence gaps on [food insecurity and food assistance](#), [gender and food systems](#), and [environmental impacts along food supply chains and how to improve them](#).

Ongoing work on food systems

In 2023-24, OECD work on food systems will take stock of policies to reduce food loss and waste, and will assess practical approaches to strengthen resilience in food systems. Furthermore, OECD work will explore the possibilities and challenges involved in **measuring and communicating environmental impacts of food**.

As part of this work, in April 2023, the OECD Global Forum on Agriculture explored the topic of **carbon footprints for food systems**. A recording of the scene-setting presentation, outlining the various initiatives to measure and communicate carbon footprints of food products; can be found [here](#). A background paper, “Fast and Furious: The Rise of Environmental Impact Reporting in Food Systems”, has been published in the *European Review of Agricultural Economics*, see [here](#).

The OECD [Food Chain Analysis Network](#) will study this topic in detail. A first meeting was held in June 2023 and took stock of different initiatives to measure and communicate environmental impacts (including, but not limited to, carbon footprints). In the coming months, virtual workshops are held with the experts to explore these issues in more depth.

Recent publications

- Deconinck, K., Jansen, M., and C. Barisone (2023), “Fast and furious: the rise of environmental impact reporting in food systems,” *European Review of Agricultural Economics*, Volume 50, Issue 4, September 2023, Pages 1310-1337, <https://doi.org/10.1093/erae/jbad018>
- Deconinck, K. and M. Hobeika (2022), "Improving environmental outcomes along food supply chains: A review of initiatives and their effectiveness", OECD Food, Agriculture and Fisheries Papers, No. 186, OECD Publishing, Paris, <https://doi.org/10.1787/d549eb43-en>.
- Deconinck, K. and L. Toyama (2022), "Environmental impacts along food supply chains: Methods, findings, and evidence Gaps", OECD Food, Agriculture and Fisheries Papers, No. 185, OECD Publishing, Paris, <https://doi.org/10.1787/48232173-en>.
- Giner, C., M. Hobeika and C. Fischetti (2022), "Gender and food systems: Overcoming evidence gaps", OECD Food, Agriculture and Fisheries Papers, No. 184, OECD Publishing, Paris, <https://doi.org/10.1787/355ba4ee-en>.

- Giner, C. and O. Placzek (2022), "Food insecurity and food assistance programmes across OECD countries: Overcoming evidence gaps", OECD Food, Agriculture and Fisheries Papers, No. 183, OECD Publishing, Paris, <https://doi.org/10.1787/42b4a7fa-en>.
- OECD (2021), *Making Better Policies for Food Systems*, OECD Publishing, Paris <https://doi.org/10.1787/ddfba4de-en>.

Contact: Koen Deconinck (TAD/ATM)

OECD AGRICULTURE MINISTERIAL MEETING

On 3-4 November 2022, Ministers and Heads of delegations from 50 countries (represented by 30 Ministers and Vice Ministers of Agriculture) and 5 international organisations met in Paris for the OECD's Meeting of Agriculture Ministers, the first such meeting since April 2016.

The Ministerial, under the theme “**Building sustainable agriculture and food systems in a changing environment: Shared challenges, transformative solutions**” was chaired by Minister Marie-Claude Bibeau of Canada and Minister Damien O'Connor of New Zealand and drew over 280 participants who engaged over a day and a half in intensive discussions on the policies and research needed to build productive, sustainable and resilient agriculture and food systems. The inclusion of partner countries (Argentina, Brazil, Bulgaria, Cambodia, Croatia, Kazakhstan, Peru, Romania, Senegal, South Africa and Ukraine), along with the participation of the international organisations the Committee on World Food Security, FAO, World Bank, WTO and Business at OECD (BIAC) enriched the debate and brought useful perspectives to the meeting.

We were honoured to be joined by the Minister of Agrarian Policy and Food, Mykola Solskyi to hear his virtual intervention on the impact on food systems and agriculture of Russia's invasion. We were also pleased that Israel announced that it will join the OECD's Co-operative Research Programme: Sustainable Agricultural and Food Systems (CRP).



The 2022 Ministerial event concluded with the **Declaration on Transformative Solutions for Sustainable Agriculture and Food Systems** being adopted by the 38 OECD Member countries, the European Union, as well as Bulgaria, Croatia, Peru and Romania. The Declaration articulates a shared vision for governments on the actions needed to transform agriculture and food systems with a view to i) ensuring food security and nutrition, ii) strengthening sustainability and iii) ensuring inclusive livelihoods. The Declaration underlines the key role of developing transformative and innovative policies towards more sustainable and resilient agriculture and food systems. To this end, it calls on countries to develop and implement coherent whole-of-government policy packages, promote inclusive processes, increase investment in research and development and infrastructure, enhance research collaboration and knowledge sharing, strengthen international cooperation, strengthen the contribution of trade to agriculture and food systems transformation and develop measures for local, national and global food systems.

More information: [Agriculture Ministerial - OECD Meeting of Agriculture Ministers 2022](#)

Contact: Lee Ann Jackson (TAD/ATM)

GLOBAL FORUM ON BIOTECHNOLOGY

The Global Forum on Biotechnology is one of 15 Global Fora created by OECD Committees. Global Fora are not official OECD bodies¹, but are best described as broad communities or networks of stakeholders in specific areas of responsibility of one or more Committees. The capacity of OECD Committees to accommodate non-Member Partners as Participants or Associates being limited, the Global Fora provide platforms for peer learning and policy dialogue on issues which require interaction with Partners world-wide. They can also promote multidisciplinary and horizontal approaches beyond the scope of any single Committee and foster partnerships with other intergovernmental organisations.

OECD Global Fora bring together government officials, policy analysts, business leaders, academic experts, researchers and various other stakeholders. Many Global Forum meetings are major events, attracting large numbers of participants from different regional and cultural backgrounds. They contribute to create active networks of policy makers in Member and Partner economies, to build consensus on what are the most effective policies and to identify “next-generation” issues. The principal functions of Global Fora are to:

- Help the Committees identify relevant issues, including newly emerging ones;
- Promote a convergence of views on the Committees’ outputs among a broad range of Members and Partners;
- Ensure that these outputs are known and used among these stakeholders;
- Share best practices in the implementation of the results.

The Global Forum on Biotechnology supports the activities and networks in the field of biotechnology developed by 1) the Committee for Scientific and Technological Policy, and 2) the Chemicals and Biotechnology Committee. For instance, the Global Forum on Biotechnology provides the adequate framework to support the participation of several delegates from non-Member countries in the plenary meetings and associated activities of the Working Party on the Harmonisation of Regulatory Oversight in Biotechnology, as well as the Working Party for the Safety of Novel Foods and Feeds.

Website: General information on the Global Fora: <http://www.oecd.org/global-relations/globalforums/>

Contact: Jane Richardson (ENV/EHS)



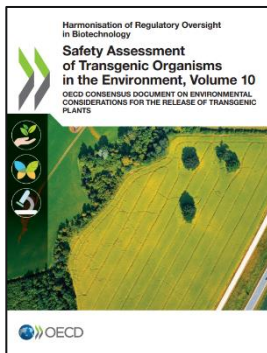
¹ Except the Global Forum on Transparency and Exchange of Information for Tax Purposes which is governed by different rules than the OECD's other Global Fora.

HARMONISATION OF REGULATORY OVERSIGHT IN BIOTECHNOLOGY

The OECD's *Working Party on the Harmonisation of Regulatory Oversight in Biotechnology* (WP-HROB) deals with the environmental safety of transgenic organisms (plants, animals, micro-organisms). The work aims to ensure that the types of elements used in biosafety assessment, as well as the methods to collect such information, are as similar as possible amongst countries. This improves mutual understanding and harmonised practice, which in turn, increases the efficiency of the biosafety assessment process, limits duplication of effort, while reducing barriers to trade.

The WP-HROB participants are mainly officials from OECD countries responsible for the environmental risk/safety assessment of products derived from modern biotechnology. Observer delegations and invited experts collaborate actively, given the use of biotech products and breeding activities worldwide. They include candidate countries and other partner countries interested (in recent years: Argentina, Brazil, Croatia, India, Kenya, Paraguay, Philippines, South Africa, Thailand, Uruguay, Viet Nam); Business at OECD (BIAC); other inter-governmental and expert organisations such as FAO; UNEP; the Convention on Biological Diversity Secretariat; the African Biosafety Network of Expertise (AUDA NEPAD-ABNE), the Agriculture and Food Systems Institute (AFSI), the Public Research and Regulation Initiative (PRRI). The 37th meeting of the WP-HROB was held in April 2023, with a large participation from 39 delegations.

The publication of OECD Consensus/Guidance Documents remains a major output of the programme. They constitute a set of practical tools for regulators and biosafety assessors dealing with new transgenic varieties, with respect to environmental safety. The 60 Consensus Documents issued to date address the biology of crops, trees, animals and micro-organisms, as well as selected traits that have been introduced in plants. Other key issues in the context of environmental risk assessment are also covered.



The consensus document on **Environmental Considerations for risk/safety assessment for the release of transgenic plants** was published in July 2023, concluding many years of discussions led by Canada and WP-HROB Bureau. The document deals with the core of the biosafety work: it contains general information on environmental risk/safety assessment, its key concepts and structure when planning, and also examples gained from actual risk/safety assessment in seven annexes. It was also included in the [Safety Assessment of Transgenic Organisms in the Environment, Volume 10](#) published in July 2023 as well. All these documents are available through the OECD BioTrack website (www.oecd.org/science/biotrack).

Works under development are as follows:

- Consensus documents:
 - Revised wheat biology document (publication expected in the first half of 2024)
 - Revised maize biology document
 - Biology of mosquitoes *Anopheles gambiae* (publication expected in 2024), *Anopheles albimanus* and *Anopheles stephensi* (new projects) where engineered strains are being used to fight against malaria disease vectored by the insect
 - Biology and use of phototrophic micro-algae for production purposes

In common with WP-SNFF:

- Update of the 1986 OECD Council Recommendation on the safety of recombinant DNA organisms
- Enhanced information exchange on New Breeding Techniques (approved in October 2022, first Survey conducted in January 2023)

- Moving towards “safe(r)-innovation-approach” in the context of modern biotechnology, project approved in April 2023 following a two-year pilot project having focused on 2 case studies.

Upcoming events

- 38th Meeting of the Working Party on the Harmonisation of Regulatory Oversight in Biotechnology, 20-22 March 2024
- 39th Meeting of the Working Party on the Harmonisation of Regulatory Oversight in Biotechnology, 24-26 March 2025

Recent publications:

- [Development in Delegations on Biosafety Issues, June 2022 - April 2023](#) (2023)
- [Safety Assessment of Transgenic Organisms in the Environment, Volume 9](#) - OECD Cons. Doc. on the Biology of Crops: Apple, Safflower, Rice (2022)
- [Safety Assessment of Transgenic Organisms in the Environment, Volume 10](#) - OECD Cons. Doc. on Environmental Considerations for the Release of Transgenic Plants

Website: BioTrack Online www.oecd.org/science/biotrack

Contacts: Satoshi Nakano, Jane Richardson, Ryoko Machida-Hirano (ENV/EHS)

SAFETY OF NOVEL FOODS AND FEEDS

The OECD *Working Party for the Safety of Novel Foods and Feeds* (WP-SNFF) addresses aspects of the safety assessment of foods and feeds derived from genetically engineered crops. The work aims to ensure that the types of elements used in risk/safety assessment, as well as the methods to collect such information, are as similar as possible amongst countries. The approach is to compare transgenic crops and derived products with similar conventional ones that are already known and considered safe in their use, based on recognised experience. Harmonised methods and practice, as well as share of data are facilitated through the WP-SNFF activities. The 30th meeting of the WP-SNFF was held in April 2023, with a large participation from 32 delegations.

Consensus documents

The main output is the set of consensus documents on compositional considerations for new varieties of specific crops. These documents compile a common base of scientific information on the major components of the plants and their derived products: key nutrients; toxicants; antinutrients; and other plant metabolites where relevant. Other publications deal with general aspects to facilitate harmonisation in safety assessment. These documents constitute practical tools for regulators and risk assessors dealing with new transgenic varieties, with respect to human food and animal feed safety. To date, 28 Consensus Documents have been published on major crops and mushrooms, the animal feedstuffs, as well as the molecular characterisation of plants derived from modern biotechnology developed in common with the WP-HROB. They are available through the OECD BioTrack website (www.oecd.org/biotrack).



A new document on *Considerations for collaborative work on the safety assessment of foods and feeds derived from rDNA plants* has been published in September 2023. Two composition documents, on maize (revision) and faba bean (*Vicia faba*), are under development. Joint projects conducted with the WP-HROB are the update of the 1986 OECD Council Recommendation on the safety of recombinant DNA organisms, the enhanced information exchange on New Breeding Techniques, and the project on moving towards “safe(r)-innovation-approach” in the context of modern biotechnology.

Outreach and Engagement of Non Member Economies

Officials from OECD countries and delegates from the European Food Safety Authority (EFSA), Business at OECD (BIAC), observer organisations such as FAO, UNEP, the African Biosafety Network of Expertise (AUDA NEPAD-ABNE) and the Agriculture and Food Systems Institute (AFSI), Health and Environmental Sciences Institute (HESI) participate actively in the novel food and feed safety programme. In addition, the WP-SNFF has increasingly involved the experience, scientific knowledge and interests of non-member economies, which allows it to address a wider range of food and feed products of global interest. Brazil, South Africa and Thailand, for example, were actively involved in the drafting of consensus documents on compositional considerations for cowpea, cassava, papaya as well as other tropical crops. The WP-SNFF benefits also from the expertise from Argentina, Croatia, India, Kenya, Paraguay, Philippines, Uruguay and Viet Nam.

Upcoming events:

- 31st Meeting of the Working Party for the Safety of Novel Foods & Feeds, 18-20 March 2024
- 32nd Meeting of the Working Party for the Safety of Novel Foods & Feeds, 26-28 March 2025

Recent publications:

[Considerations for Collaborative Work on the Safety Assessments of Foods and Feeds Derived from rDNA Plants \(2023\)](#)

Website: BioTrack Online www.oecd.org/biotrack

Contacts: Ryoko Machida-Hirano, Jane Richardson, Satoshi Nakano (ENV/EHS)

BIOTRACK ONLINE



The BioTrack Online information system is a mechanism by which the *Working Party on the Harmonisation of Regulatory Oversight in Biotechnology* and the *Working Party for the Safety of Novel Foods and Feeds* make publicly available the outputs of their work, especially their Consensus/Guidance Documents described in sections above.

BioTrack Online offers also a public access to the “Product Database”. This database allows regulatory officials to easily share basic information on transgenic products derived from the use of modern biotechnology (mainly crop plants) and approved for commercial application in terms of food, feed or environmental safety. The database is updated, on a voluntary basis, by authorities of countries participating in the OECD biosafety activities. Products are listed with unique identifiers, and the information includes common/scientific names of the host organism and introduced genes, the events and traits, the regulatory elements and relevant links regarding approvals for release and use in countries.

Information on new or updated entries provided by Argentina, Australia, Canada, South Africa European Union and Paraguay were added to the Product Database in 2023. Currently, the database includes 393 products of transgenic crops, trees and flowers, from a total of 26 plant species (plum and pineapple as new species), these products being approved in one or several of 17 countries and the European Union. BioTrack Online also contains the regulatory contacts of OECD member countries and other stakeholders involved in biosafety and novel food/feed safety.

The co-operation continues between the OECD’s Product Database, the CBD Biosafety Clearing-House and the FAO GM Food Platform, for interoperability between these web-based systems and facilitating the exchange of information on safety assessment of transgenic organisms and foods. This activity responds to a request from the Codex ad hoc Task Force on Food Derived from Biotechnology, and a Memorandum of Cooperation signed between OECD and the Secretariat of the Convention on Biological Diversity.

Website: BioTrack Online www.oecd.org/biotrack
Product Database <https://biotrackproductdatabase.oecd.org/>

Contacts: Satoshi Nakano, Jane Richardson (ENV/EHS)

BIODIVERSITY ECONOMICS AND POLICY



Biodiversity work at the OECD focuses on the economics and policies needed to promote the effective conservation and sustainable use of biodiversity. It includes areas such as biodiversity valuation, the use of economic instruments and other policy measures, biodiversity mainstreaming and finance. This programme also supports the Convention on Biological Diversity (CBD). The work is conducted under the oversight of the OECD Working Party on Biodiversity, Water and Ecosystems (WPBWE), a subsidiary body of the Environment Policy Committee (EPOC).

Biodiversity, including forests, wetlands and marine ecosystems, is fundamental to human well-being and the economy. Biodiversity provides critical ecosystem services such as food provisioning, water purification, nutrient cycling, and climate regulation, all of which are essential to support human well-being and economic growth. Despite the significant economic, social and cultural benefits provided by biodiversity and ecosystem services, global biodiversity is declining.

On-going OECD work on biodiversity is on Biodiversity and Green Budgeting Tagging; Scaling up Positive Incentives for Biodiversity; Tracking Economic Instruments and Finance for Biodiversity; and Quantifying Environmentally Harmful Subsidies/Support.

A forthcoming report on “Mainstreaming Biodiversity into Renewable Power Infrastructure” synthesises evidence on biodiversity impacts from renewable power infrastructure. It identifies opportunities for mainstreaming biodiversity into power sector planning and policy to deliver better outcomes for nature and the climate.

“A supervisory framework for assessing nature-related financial risks: Identifying and navigating biodiversity risks” was released in September 2023 under WPFIEG. The framework provides technical guidance to central banks and financial supervisors on how to prioritise, conceptualise, and assess biodiversity- and nature-related financial risks with respect to their financial system.

The OECD released a working paper on “[Identifying and assessing subsidies and other incentives harmful to biodiversity: A comparative review of existing national level assessments and insights for good practice](#)” in November 2022. The paper reviews the existing national level studies undertaken to identify and assess incentives harmful to biodiversity or the environment more broadly, and concludes with good practice insights for any other countries wishing to undertake similar studies (as called for under the Convention on Biological Diversity).

A report [Biodiversity, Natural Capital and the Economy: A Policy Guide for Finance, Economic and Environment Ministries](#), prepared at the request of the UK G7 Presidency, was released in 2021. The report provides the latest findings and policy guidance for G7 and other countries in four key areas: measuring and mainstreaming biodiversity; aligning budgetary and fiscal policy with biodiversity; embedding biodiversity in the financial sector; and improving biodiversity outcomes linked to international trade.

The analysis in [*Tracking Economic Instruments and Finance for Biodiversity - 2021*](#), updated in September 2021, highlights trends in the use of biodiversity-relevant economic instruments - such as taxes, fees and charges, tradable permits, and environmentally-motivated subsidies - and the finance they mobilise, based on available data in the OECD Policy Instruments for the Environment (PINE) database. These data have been used to monitor progress towards CBD Aichi Target 3 and Sustainable Development Goal (SDG) Target 15.a.1 on biodiversity finance. They are also relevant for Target 18 in the draft post-2020 Global Biodiversity Framework in the context of positive incentives.

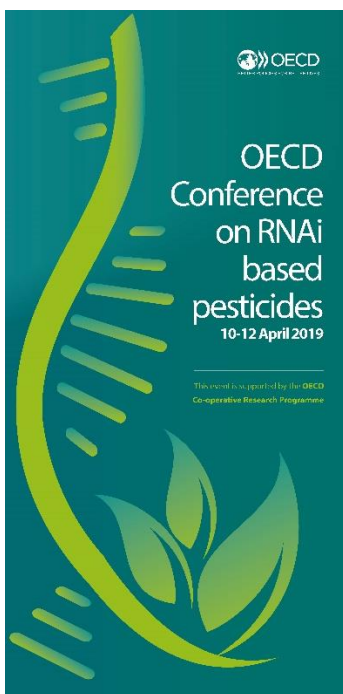
Recent publications and working papers:

- OECD (forthcoming), *Mainstreaming Biodiversity into Renewable Power Infrastructure*.
- OECD (2023), "A supervisory framework for assessing nature-related financial risks: Identifying and navigating biodiversity risks", OECD Business and Finance Policy Papers, No. 33, OECD Publishing, Paris, <https://doi.org/10.1787/a8e4991f-en>
- OECD (2023), "Assessing biodiversity-related financial risks: Navigating the landscape of existing approaches", *OECD Environment Policy Papers*, No. 36, OECD Publishing, Paris, <https://doi.org/10.1787/d52137a5-en>.
- OECD (2022), *Identifying and assessing subsidies and other incentives harmful to biodiversity at national level: A comparative review of existing national level assessments and insights for good practice*.
- OECD (2021), *Biodiversity, natural capital and the economy: A policy guide for finance, economic and environment ministers*.
- OECD (2021), *Tracking economic instruments and finance for biodiversity - 2021*
- OECD (2021), *Enhancing the effectiveness of sub-national biodiversity policy: Practices in France and Scotland, United Kingdom*

Website: www.oecd.org/environment/resources/biodiversity/

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REGULATION OF EXTERNALLY APPLIED dsRNA-BASED PRODUCTS FOR PEST MANAGEMENT



The *OECD Conference on Regulation of Externally Applied dsRNA-based Products for the Management of Pests* was held at the OECD Headquarters in April 2019. The event benefitted from financial support from the OECD Cooperative Research Programme: Biological Resource Management for Sustainable Agricultural Systems (CRP).

The *Expert Group on RNAi-based pesticides (EGRNAi)* - a sub-body of the OECD *Working Party on Pesticides* - organised the conference and coordinated the preparation of the conference with the Federal Office of Consumer Protection and Food Safety (BVL) in Germany, the European Food Safety Authority, Health Canada and the US Environmental Protection Agency.

The full proceedings of the conference have been published online at the [Frontiers Research Topic RNAi Based Pesticides](#). This special issue contains papers prepared after the conference by the speakers, and the [conference report](#) (2020) that summarises input from presenters and participants during the panel discussions at each session. Key elements from these discussions have already been incorporated into the OECD Working Document on [Considerations for the Environmental Risk Assessment of the Application of Sprayed or Externally Applied ds-RNA-Based Pesticides](#), Series on Pesticides No.104 (2020). It will facilitate regulators in evaluating externally applied dsRNA-based products for potential environmental risks.

The second OECD [Working Document on Considerations for the Human Health Risk Assessment of Externally Applied ds-RNA-Based Pesticides](#), Series on Pesticides No.110, published in June 2023, includes the lessons learned from the application of this technology in the field of pharmaceuticals and considers a range of issues directly relevant to human exposure arising from the application of externally-applied dsRNA-based pesticides, and discusses possible effects of dsRNA exposure in mammals.

Publications and working papers:

- RNAi Pesticides (several authors) (2019-2021), full proceedings of the 2019 OECD conference on RNAi based pesticides.
- OECD (2020), *Considerations for the Environmental Risk Assessment of the Application of Sprayed or Externally Applied ds-RNA-Based Pesticides*.
- Mendelsohn et al. (2020), *Summary of Discussions From the 2019 OECD Conference on RNAi Based Pesticides*.
- OECD (2023), *Working Document on Considerations for the Human Health Risk Assessment of Externally Applied ds-RNA-Based Pesticides*.

Website: <http://www.oecd.org/chemicalsafety/pesticides-biocides/conference-on-rnai-based-pesticides.htm>

Contacts: Magda Sachana, Jane Richardson (ENV/EHS)

CONFERENCE ON INNOVATING MICROBIAL PESTICIDE TESTING

The *Expert Group on Biopesticides (EGBP)* - a sub-body of the OECD *Working Party on Pesticides* - organised an *OECD Conference on Innovating Microbial Pesticide Testing* that took place at the OECD Headquarters on 13-16 September 2022. This conference benefitted from a grant from the OECD Co-operative Research Programme (CRP): Sustainable and Food Agricultural Systems. The OECD Secretariat and the EGBP Chair from the US Environmental Protection Agency coordinated preparations, including the development of two background documents prepared by experts from OECD member countries outlining the challenges and future opportunities for testing and for assessing the safety of microbial pesticides with respect to both human health and non-target organisms.



Microbial pesticides are microorganisms (e.g., bacteria, fungi, viruses) that are used to control a wide range of agricultural pests, including plant disease-causing microorganisms, fungi, insects, and weeds. These pesticides are important components of a sustainable agriculture strategy because they generally have a lower risk profile and are more selective for targeted pests compared to conventional chemical pesticides. However, microbial pesticide hazard testing is challenging, as current test guidelines were developed for chemical pesticides and do not take into account microbial pesticides' unique properties. Using the current test guidelines for microbial pesticides can produce study results that are inconsistent, difficult to interpret.

The goal of the conference was to develop, agree upon, and develop a workplan to improve current test guidelines for microbial pesticides. This includes:

- improving test guidelines to evaluate potential effects of microbial pesticides on nontarget organism (e.g., birds, fish, bees), and
- establishing a framework using NAMs and/or other novel approaches in lieu of mammalian test guidelines to evaluate the effects of microbial pesticides on human health.
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The Conference [programme](#), abstracts, speakers' biographies and other conference materials are available on the conference website. The full proceedings of the conference with papers prepared subsequently by each of the speakers, were published in June 2023 and are available [here](#).

Publications:

OECD (2023) Innovating Microbial Pesticide Testing: Conference Proceedings.

Website: <https://oe.cd/innovating-microbial-pesticide-testing>

Other relevant EGBP activities: The EGBP has published an *OECD Guidance Document on Baculoviruses as Plant Protection Products Series on Pesticides No. 111 ENV/CBC/MONO(2023)21*. This will complement the *Consensus Document on Information Used in the Assessment of Environmental Applications Involving Baculoviruses* [ENV/JM/MONO(2002)1] published by the Working Party on the Harmonisation of Regulatory Oversight in Biotechnology in 2002. Only a few additional, publically available safety studies have been carried out during the last 20 years, but the new Guidance Document will extend the 2002 Consensus Document by referring to new knowledge on the biology of baculoviruses, as well as the describing experiences using baculovirus as a plant protection agent. The document is expected to be published later in 2023.

Publications:

OECD (2023) Guidance Document on Baculoviruses as Plant Protection Products Series on Pesticides

Website: <https://www.oecd.org/chemicalsafety/pesticides-biocides/biological-pesticides.htm>.

Contacts: Magda Sachana, Jane Richardson (ENV/EHS)

GLOBAL FORUM ON TECHNOLOGY FOCUS GROUP ON SYNTHETIC BIOLOGY: KICK OFF ON 2 AND 13 NOVEMBER 2023

The first GFTech synthetic biology focus group convened in hybrid format for the first time on 2 November 2023 at the OECD in Paris, to launch a series of expert engagements over the following 10-12 months. The group currently has 50 participants from 29 different countries, including participants from Africa, Asia, North America, Latin America, Europe and Oceania in addition to a number of non-profit organisations operating at an international level. 30 experts came together for the launch event, including academia (both natural and social science), along with government experts, innovation associations, a number of firms and organisations interfacing with civil society. To capture all timezones around the globe, a second launch event was held online on 13th November with 20 participants.



The purpose of the focus group is to support dialogue with a broader community, in particular the exploration of pathways towards the possible development of OECD standards for responsible innovation in this area, and feed into the work programme of the CSTP and its Working Party on Biotechnology, Nanotechnology and Converging Technologies (BNCT). The focus group will next convene on 11th December to discuss and rank priority areas for deeper dive discussions.

Contact: Douglas Robinson (STI/STP)

JOINT OECD-IGEM CONFERENCE ON RESPONSIBLE RESEARCH AND INNOVATION IN SYNTHETIC BIOLOGY



As part of the BNCT's activity "Synthetic Biology: accelerating innovation through anticipating and mitigating risks" within the horizontal project on existential risk, coordinated by the Strategic Foresight Unit of the Office of the Secretary General, the BNCT co-organised a 2 day workshop on [iGEM Responsibility](#).

Based on expert panels and working sessions, the conference covered topics such as:

- Dual-Use of synthetic biology,
- Responsible field trials of gene drives,
- Building resilient and responsible value chains and bioeconomies,
- Exploring the challenges and opportunities ahead with the convergence of artificial intelligence and synthetic biology, and
- Identifying in roads to novel policy approaches to the governance of emerging technologies.

This event was an official satellite event of the iGEM jamboree, an annual student competition to genetically engineer living machines using synthetic biology, artificial intelligence and other technologies ([iGEM Grand Jamboree](#)).

Contact: Douglas Robinson (STI/STP)

POLICIES FOR ENGINEERING BIOLOGY IN AN INTERNATIONAL CONTEXT

Whilst there is no agreed to definition, Engineering Biology can be considered as an approach that designs, fabricates, scales and embeds biological components and systems into useful applications. Engineering biology is a field that promises solutions to many current and future global challenges, including treating or eradicating infectious and genetic diseases, preventing food shortages, enabling sustainable manufacturing, and mitigating the impacts of climate change, among many others. Potential applications include alternative protein sources such as plant-based and other synthetic meats (a solution for food security), gene editing of insects (to eradicate Malaria), scaled production of microorganisms (for carbon dioxide removal) and rapid vaccine development (such as RNA vaccines).



The OECD Working Party on Biotechnology, Nanotechnology and Converging Technologies (BNCT) hosted a scoping workshop on Engineering Biology 10 May 2023 in Paris. This workshop acted as a first stocktaking of engineering biology as a policy field as well as a “forward look” to better anticipate policy needs in the future. To this end, the workshop took a broad perspective on engineering biology to identify key developments, policies and governance challenges and to explore opportunities for international cooperation and coordination.

Workshop sessions included the following topics:

- Transformative changes to come - looking forward to impactful engineering biology
- National engineering biology strategies
- Investment approaches to, and the status of, synthetic biology and biomanufacturing
- Anticipatory governance and responsible research and innovation in engineering biology
- Training and international mobility
- Global communities and cooperation

A workshop report is envisaged drawing out reflections on, and open questions about, the above topics.

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OECD GLOBAL FORUM ON TECHNOLOGY - INAUGURAL EVENT WITH PLENARY PANEL ON SYNTHETIC BIOLOGY

On 6 June 2023, the inaugural event of the [OECD Global Forum on Technology](#) took place at OECD headquarters in Paris. Organised in the margins of the Meeting of the OECD Council at the Ministerial Level, the event brought together over 300 senior policy makers, leading technology experts, and a wide variety of stakeholders from more than 50 countries to discuss the shaping of our future at the tech frontier.

A set of three breakout sessions probed the implications of emerging technology through the lenses of three policy themes: human rights, climate change, and technological divides. In the afternoon, the Forum took a “deep dive” into two specific technologies: synthetic biology (next generation biotechnology) and immersive technologies (such as extended and virtual reality).

The panel in the Synthetic Biology plenary session was composed of Drew Endy (Stanford scientist and BioBricks President), Matthew Chang (scientists at National University of Singapore), Benson Mburu (National Commission for Science, Technology, and Innovation in Kenya), Kenneth Oye (MIT Professor of Political Science), and Claudia Vickers (Professor at Queensland University of Technology).

Drew Endy presented the synthetic biology field in a nutshell in his keynote, explaining that advances are exponential and carry high promises at the medical, agricultural, and industrial levels. Though there are many challenges today. To address these, speakers underlined that appropriate governance mechanisms need to accompany these technology advances. Moreover, they elaborated that synthetic biology should encapsulate values of inclusivity, solidarity, sustainability, and humility. Without these, the scientific community could face issues of dual-use and of exclusion of the Global South. To ensure access and equity, the panellists agreed that stakeholders should prioritize applications that are easily scalable. Concretely, they discussed five potential impact areas of synthetic biology applications in reaching zero emission goals, these include emissions reduction and reutilisation, bio-based materials, carbon sequestration and waste recycling. such as carbon sequestration and zero-emission technologies.

In concluding, the panel highlighted that despite the potential for transformative applications, synthetic biology technologies face barriers such as their translating from universities to application. This could be overcome by scale-up investment and highlights the important role of public and private funders. In terms of necessary policy interventions, the panellists discussed that the role of guardrails and self-governance mechanisms as well as the important role of coordinated frameworks and international conventions for which OECD could be well placed to drive future efforts.

All replays and event materials are accessible online at oe.cd/gftech including a short technology brief on synthetic biology can be found [here](#).

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BIOTECHNOLOGY STATISTICS

The *OECD Key Biotech Indicators (KBI)* and the *OECD Key Nanotech Indicators (KNI)* were updated in November 2023.

The KBI are available at: oe.cd/kbi and the KNI data are available at: oe.cd/kni.

Contact: Brigitte van Beuzekom (STI/STP)

BIOENERGY AND BIOFUELS AT TRADE AND AGRICULTURE DIRECTORATE

The subject of bioenergy touches various areas, in particular, scientific developments, environmental effects, energy balances and agricultural market economics. The Trade and Agriculture Directorate (TAD) work on bioenergy focuses on a comprehensive compilation of data and information, the categorisation of the variety of support policies and the quantitative analysis of bioenergy markets and policy measures.

An economic assessment of biofuel support policies, published in 2008, concluded that government support of biofuel production in OECD countries was costly, with a limited impact on reducing greenhouse gases and improving energy security, however with a significant impact on world crop prices. The study highlighted that other forms of bioenergy, such as bioheat, biopower and biogas, could represent economically more viable and environmentally more efficient ways to reduce GHG. Another publication presented the technology and costs associated with the bioheat, biopower production as well as second generation biofuels.

An OECD study published in 2010 focused on the development and the environmental performance of those alternative forms of energy. They are mostly generated with non-agricultural feedstocks and, to a lesser extent, agricultural residues and wastes. Main technologies to convert biomass to heat and/or electrical power include the direct combustion, the gasification and the anaerobic digestion producing biogas. Combined heat and power generation plants allow improving the energy efficiency with the use of the remaining heat after power generation for space heating or in industrial applications.



The OECD-FAO Agricultural Outlook annual report covers biofuel market and related policy developments. The 2023 Agricultural Outlook (projecting on the 2023-2032 period) is available at <http://www.agri-outlook.org/>, see 'Biofuels' chapter (OECD/FAO, 2023).

TAD has created a detailed database of policies in the fertiliser and biofuel sectors of OECD countries and several Emerging Economies available at <http://www.oecd.org/tad/agricultural-policies/support-policies-fertilisers-biofuels.htm>. An analysis of these policies and their implications for agricultural markets and incomes has been published within the Food, Agriculture and Fisheries Paper series ([von Lampe et al., 2014](#)). A previous Trade and Environment Working Paper has focused on domestic incentive measures for renewable energy with possible trade implications ([Bahar, Egeland and Steenblick, 2013](#)).

TAD participates in the Agricultural Market Information System (AMIS) project (www.amis-outlook.org). One of TAD's contributions to AMIS is to report each month on newly implemented biofuel policies in the AMIS countries in the Market Monitor Report.

Recent Publication:

- OECD/FAO (2023), OECD-FAO Agricultural Outlook 2023-2032 - "Biofuels" chapter, full document available at: <http://www.agri-outlook.org/>.

Website: OECD-FAO Agricultural Outlook: <https://www.agri-outlook.org/commodities/>
AMIS Market Monitor Report: <http://www.amis-outlook.org/amis-monitoring/monthly-report/en/>

Contacts: Annelies Deuss (TAD/ATM), Martin Von Lampe (TAD/PTA)

BIOENERGY AT THE INTERNATIONAL ENERGY AGENCY (IEA)

The activities of the International Energy Agency (IEA) cover bioenergy across the electricity, heat and transport sectors. The following summarize notable activities in 2023.

[IEA shares recommendations for the Global Biofuel Alliance at G20 Energy Transitions Ministerial Meeting](#)

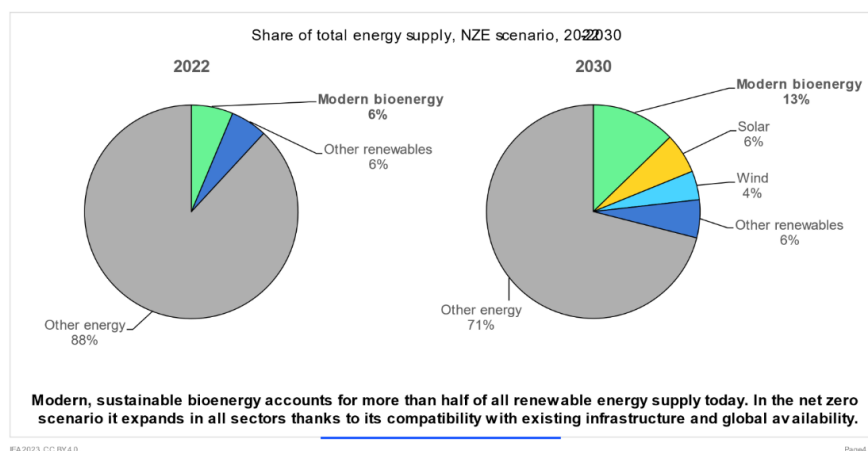
- As part of its G20 presidency, India has proposed a Global Biofuel Alliance (GBA) to bring countries together to expand and create new markets for sustainable biofuels.
- The sharing of best practices, the technical support and the capacity building that the GBA would bring are welcome additions to international efforts to expand sustainable biofuel production and use, a key step to decarbonising transportation and heat services with secure and affordable energy supplies.
- This report aims to inform and focus the Alliance's work by sharing biofuel policy insights from Brazil, India and the United States.
- We find that these countries have expanded biofuel production and use by designing long-term strategies, implementing the right investment signals, supporting innovation, ensuring supplies are secure and affordable, addressing sustainability concerns early and collaborating with the international community.
- Further, there are three priority areas that would facilitate sustainable biofuel deployment in support of the global energy transition: Identifying and helping develop markets with high potential for sustainable biofuels production, accelerating technology deployment and seeking consensus on performance-based sustainability assessments and frameworks.

[IEA launches update to its landmark Net Zero Roadmap - Bioenergy remains a key pillar](#)

- [While traditional use of biomass](#) is phased out in the NZE Scenario, modern bioenergy use more than doubles to 2050, due to its ability to be used as a direct drop-in substitute for fossil fuels. Advanced feedstock supply grows considerably, supported by investments and commercialization
- [Biofuels climb to 11% of transport fuel demand by 2030 in the net zero scenario.](#)
- [Biofuels provide 8% of shipping and 10% of aviation fuel by 2030](#)
- [Bioenergy with carbon capture and storage account for 20% of captured carbon by 2030](#)

Modern bioenergy is the giant of renewable energy

iea



[*IEA launches the Latin America Energy Outlook*](#)

- [How Latin America and the Caribbean uses its vast resources will shape the region's energy future and the role it plays in the global energy system.](#)
- View the country profiles for [Brazil](#), [Argentina](#) and [many others](#).
- Bioenergy and low-emissions hydrogen, as potential substitutes for fossil fuels in hard-to-abate sectors of the economy, are essential building blocks of a low-emissions energy system (see [section 2.5.2 for more!](#)).
-

The [Biofuture Initiative and Campaign](#) supported CEM discussions:

- [Virtual workshop on sustainable biofuels from low-production lands](#): Converting “low-producing lands” into sources of biomass feedstocks for marine fuels offers several advantages. “Low-producing lands” are lands whose productivity has been reduced by poor farming practices, pollution, or under-use. Growing biomass feedstocks on these lands would permit an increase in biofuel production without creating competition for food, fuel, and biodiversity; while, increasing opportunities for GHG emissions reductions (including Carbon Farming).
- [Two high-level panel discussions](#) were held to support the launch of the Global Biofuels Alliance and enable a more technical exchange in support of the CEO - Minister Biofuture Roundtable by affirming and increasing public and private sector commitment to the innovation, investment, and policy needed to fulfill the potential for bio-based fuels, chemicals, and materials to enable the Net Zero future. The panels will address the synergistic role of biomass with CCU and hydrogen for diverse applications, including fuels for aviation and shipping and the wide range of bio-based chemicals.

The IEA has updated both its [CCUS projects database](#) and [Clean energy demonstration project database](#).

- [CCUS project database](#): The IEA established this dataset as part of its efforts to track advances in carbon capture, utilisation, and storage (CCUS). It covers all CO₂ capture, transport, storage, and utilisation projects worldwide that have been commissioned since the 1970s, and have an announced capacity of more than 100 000 t per year (or 1 000 t per year for direct air capture facilities). It includes projects with a clear emissions reduction scope, and excludes CO₂ capture for utilisation pathways which bring low climate benefits (e.g. food and beverages), or which are part of the conventional industrial process (e.g. internal use for urea production), as well as use of naturally occurring CO₂ for enhanced oil recovery.
- [Clean energy demonstration project database](#): The IEA Demonstration Projects Database seeks to map major demonstration projects of clean energy technologies, globally. For each project, it provides information on location, sector and technology grouping, status, capacity, timing and funding, when available.

Recent publications:

- IEA (2023), Biofuel Policy in Brazil, India and the United States - Insights for the Global Biofuel Alliance. <https://www.iea.org/reports/biofuel-policy-in-brazil-india-and-the-united-states>
- IEA (2023) Latin America Energy Outlook 2023 <https://www.iea.org/reports/latin-america-energy-outlook-2023>
- IEA (2023) Net Zero Roadmap: A Global Pathway to Keep the 1.5 °C Goal in Reach <https://www.iea.org/reports/net-zero-roadmap-a-global-pathway-to-keep-the-15-0c-goal-in-reach>
- IEA (2023) The World Energy Outlook <https://www.iea.org/reports/world-energy-outlook-2023>
- IEA (2023) Clean energy demonstration project database: <https://www.iea.org/data-and-statistics/data-tools/clean-energy-demonstration-projects-database>

Contact: Jeremy Moorhouse (IEA/EMS/RED)

POLICIES FOR AGRICULTURAL INNOVATION

The Ministerial Declaration on Transformative Solutions for Sustainable Agriculture and Food Systems

The Declaration underlines the key role of developing transformative and innovative policies towards more sustainable and resilient agriculture and food systems. To this end, it calls OECD countries to strengthen the assessment of investments in agricultural innovation systems that offer cost-effective levers to progress towards productive, sustainable, and resilient agriculture and food systems.

The OECD Agro-food Productivity Sustainability Resilience policy framework

[Innovation in agriculture](#) is a key driver to improve the productivity and environmental sustainability of the sector. Innovative technologies and practices allow food systems to produce more food for a growing world population, using less resources and reducing the pressures on the environment. Innovation can make food systems more resilient to systemic shocks exacerbated by climate change, including sudden outbreaks like COVID-19 pandemic. The [Agro-food Productivity-Sustainability-Resilience policy framework](#) responds to a demand from the G20 in 2012 and to the Communiqués from the OECD Agricultural Ministerial meeting in 2016. It is currently a [ready-to-use instrument](#) to analyse the performance of agricultural policies from a holistic perspective and their contribution to enhance innovative outcomes.

Agriculture Innovation Systems



Recognising the potential role of biotechnologies in increasing productivity and facilitating adaptation to climate change, TAD has analysed agricultural innovation systems and the role of policies in fostering innovation. After three pilot country reviews published in 2015 (Australia, Brazil and Canada), the framework was used in a number of country reviews: the Netherlands (2015), Türkiye and the United States (2016), P.R.China, Estonia, Korea and Sweden (2018), and [Japan](#) and Latvia (2019). Furthermore, three additional country studies of [Argentina](#) (2019), [Norway](#) (2021) and [Viet Nam](#) (2022) have also a focus on agriculture innovation applying the revised framework. The main findings and policy recommendations from the country reviews achieved since 2015 were published in 2019 ([OECD, 2019](#)). A booklet containing an [overview of the main findings](#) and a [policy brief](#) were made available at an OECD seminar organised on 11 May 2019 before the G20 Meeting of Agricultural Ministers in Niigata, Japan. In 2023, three additional reviews were released for [the Netherlands](#), [Spain](#), and the [European Union](#). They contain updated information and a detailed assessment of agricultural innovation systems and how they can work for achieving environmental sustainability. Journalists, policy makers, and researchers have expressed great interest in them.

Digital Agriculture



Digitalisation offers the potential to help address the productivity, sustainability and resilience challenges facing agriculture. Two recent publications - a [literature review](#) and an [“issues note” on trust](#) - address the barriers of adoption of digital agriculture in OECD countries, including trust issues. Currently, the OECD Trade and Agriculture Directorate (TAD) is working on how digital technologies affect labour, skills and farmers’ wellbeing. The focus on these relations is relevant because digital technologies can improve working conditions in agriculture, by reducing the need for menial tasks and physical labour, allowing for more flexible work schedules and reducing health risks, and generate new entrepreneurship opportunities in rural areas, for example, allowing for certain on-farm diversification activities, such as tourism. All these effects can make the sector increasingly attractive to younger people and to attract new entrants into agriculture.

Farm Level Analysis Network and Network on Agricultural TFP and the Environment

Innovation can provide an opportunity for agriculture producers to increase productivity while better managing natural resources. To broaden the understanding of these interlinkages, TAD has established networks of experts from research and government.

The [Farm-Level Analysis Network](#) undertakes studies and exchange of experience on the use of micro level data for policy analysis. A series of reports investigating the determinants of farm productivity and sustainability performance and dynamics, including innovation and agricultural policies have been discussed in the Network and published in the [OECD Food, Agriculture and Fisheries Paper series](#). The last edition of the meeting in November 2023 focused on “Social issues and related data gaps” and “New farmers, digitalisation and innovation”. The meeting included for the first time a joint session with experts from the [Food-Chain Analysis Network \(FCAN\)](#) on “Environmental impact measurement at farm level” to exchange views of and discuss challenges of the farm-level calculation tools for measuring and communicating environmental impacts.

The [Network on Agricultural TFP and the Environment](#) provides experts with a platform to discuss challenges and opportunities of measuring the sustainable productivity growth through “environmentally-adjusted” Total Factor Productivity (TFP) indicators. Discussions on the recent methodological developments and best measurement practices were concluded with the publication of [“Insights into the Measurement of Agricultural Total Factor Productivity and the Environment”](#) (OECD, 2022; Bureau and Antón, 2022).

Recent publications:

- OECD (2023), “Policies for the Future of Farming and Food in the European Union”, OECD Agriculture and Food Policy Reviews, OECD Publishing, Paris, <https://doi.org/10.1787/32810cf6-en>.
- OECD (2023), “Policies for the Future of Farming and Food in Spain”, OECD Agriculture and Food Policy Reviews, OECD Publishing, Paris, <https://doi.org/10.1787/a93d26be-en>.
- OECD (2023), “Policies for the Future of Farming and Food in the Netherlands”, OECD Agriculture and Food Policy Reviews, OECD Publishing, Paris, <https://doi.org/10.1787/bb16dea4-en>.
- Asai, M., et al. (2023), “Fostering agricultural and rural policy dialogue”, OECD Food, Agriculture and Fisheries Papers, No. 197, OECD Publishing, Paris, <https://doi.org/10.1787/d36fcbad-en>.
- Sauer, J. and J. Antón (2023), “Characterising farming resilience capacities: An example of crop farms in the United Kingdom”, *OECD Food, Agriculture and Fisheries Papers*, No. 195, OECD Publishing, Paris, <https://doi.org/10.1787/1e26883b-en>.
- Bureau, J. and J. Antón (2022), “Agricultural Total Factor Productivity and the environment: A guide to emerging best practices in measurement”, *OECD Food, Agriculture and Fisheries Papers*, No. 177, OECD Publishing, Paris, <https://doi.org/10.1787/6fe2f9e0-en>.
- McFadden, J., et al. (2022), “The digitalisation of agriculture: A literature review and emerging policy issues”, *OECD Food, Agriculture and Fisheries Papers*, No. 176, OECD Publishing, Paris, <https://doi.org/10.1787/285cc27d-en>.
- McFadden, J., F. Casalini and J. Antón (2022), “Policies to bolster trust in agricultural digitalisation: Issues note”, *OECD Food, Agriculture and Fisheries Papers*, No. 175, OECD Publishing, Paris, <https://doi.org/10.1787/5a89a749-en>.
- OECD (2022), “Insights Into the Measurement of Agricultural Total Factor Productivity and the Environment”, <https://www.oecd.org/agriculture/topics/network-agricultural-productivity-and-environment>.
- OECD (2022), “Innovation, Agricultural Productivity and Sustainability in Viet Nam”, Chapter 5 on the Agricultural knowledge and innovation system, https://www.oecd-ilibrary.org/agriculture-and-food/innovation-agricultural-productivity-and-sustainability-in-vietnam_9cc1f47a-en

- OECD (2021), “Policies for the Future of Farming and Food: How to improve productivity, sustainability and resilience?” (Booklet on PSR Policy Framework), https://issuu.com/oecd.publishing/docs/policies_for_the_future_of_farming_and_food.
- OECD (2021), “Policies for the Future of Farming and Food in Norway”, Chapter 4 on the Agricultural Innovation System, <https://doi.org/10.1787/20b14991-en>.
- Sauer, J., et al. (2021), "Dynamics of farm performance and policy impacts: Case studies ", *OECD Food, Agriculture and Fisheries Papers*, No. 165, OECD Publishing, Paris, <https://doi.org/10.1787/3ce71854-en>.
- Anton, J. and J. Sauer (2021), “Dynamics of Farm Performance and Policy Impacts: Main Findings”, *OECD Food, Agriculture and Fisheries Papers*, No. 164, OECD Publishing, <https://doi.org/10.1787/af1f4600-en>.

Website: <http://www.oecd.org/agriculture/topics/agricultural-productivity-and-innovation/>

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AGRICULTURAL SEED AND FOREST REPRODUCTIVE MATERIAL CERTIFICATION SCHEMES

The following three criteria; distinctness, uniformity and stability are used for defining crop varieties and form the basis for agricultural seed development and trade. Identification and minimum purity criteria are important components of sustainability, especially in the case of hybridisation and genetic modifications. For forest reproductive material reliability depends on several factors including identification of origin (region or provenance), selection and breeding.



The OECD Seed Schemes are a set of international standards for field inspection and certification of the most important agricultural and vegetable species. The Schemes aim to harmonise seed certification; thereby facilitating and promoting international seed trade. The eight Seed Schemes establish rules and standards for varietal inspection and certification of seeds from OECD listed varieties. Sixtyone countries are currently a member of at least one of the Schemes.

The *List of Varieties Eligible for OECD Certification* covers 204 species - including all major crops - and more than 69 000 varieties. OECD statistics indicate that the total weight of OECD certified seeds traded corresponded to 1 billion kg in 2019/20. The electronic database provides an online search facility for OECD listed varieties and is available from the official website (see below).

In order to assess the current and future needs of international certification, the OECD Seed Schemes have established a number of Ad-Hoc Working Groups and holds regular discussions with their Technical Working Group to examine issues, explore new opportunities and develop new procedures. One of the key issues for the OECD Seed Schemes is the emerging role of biochemical and molecular techniques (BMT) in describing and identifying varieties. These issues are discussed at the Advisory Group on Biochemical and Molecular Techniques. The group plays a key role in the registration of new BMTs under the OECD Seed Schemes. The 2023 Annual Meeting held on 22-23 June 2023 approved new BMTs which are in use at least by one of the participating countries in the Seed Schemes. The Group also started discussions on how modern molecular techniques can be used for varietal purity tests. Currently the registered BMTs are only allowed for varietal identity tests but only as supplementary methods to phenotyping techniques.

International organisations such as OECD, International Union for the Protection of New Varieties of Plants (UPOV) and International Seed testing Association (ISTA) need to pursue these new techniques carefully in order to maintain the integrity of the seed sectors international regulatory framework. These organisations work in close cooperation to harmonise their work on BMTs as much as possible. Both OECD and UPOV have established their list of BMTs applied in breeding, variety testing and registration or seed certification. The organisations harmonised their approach during the formation of the lists.

The OECD Forest Seed and Plant Scheme encourages the production and use of forest reproductive material that has been collected, processed and marketed in a manner that ensures their trueness to name. It is currently implemented in 30 countries. The Scheme's rules were recently completed by including the "Tested" category and new types of basic materials, such as clones, clonal mixture and parents of families. Moreover, the Scheme is now adapted to deal with multifunctional forest trees. The Scheme is exploring possible ways to adapt to and mitigate climate change. The scheme is collaborating with organisations such as KewGardens or EUFORGEN, to better understand and communicate the importance of the origin of forest reproductive material in afforestation reforestation and in forest tree plantations. The certification of origin is becoming more and more important as it provides information to foresters on the adaptation potential of the forest reproductive material. Some countries have introduced DNA based control systems to check the true origin (region of provenance) of the imported forest tree seeds, parts of plants or plants.



The OECD Forest Seed and Plant Scheme is currently exploring the possibility of using biochemical and molecular techniques, particularly DNA based techniques in registration of basic material of forestry species under the OECD as well as the certification of origin and population of forest reproductive material.

Upcoming events:

Agricultural Seed Schemes:

- Technical Working Group Meeting: 29 January - 2 February 2024, Livingstone, Zambia
- 2024 Annual Meeting of the OECD Seed Schemes: 10-14 June 2024, Nice, France
Forest Seed and Plant Scheme:
- Technical Working Group Meeting: 23-24 April 2024, Sweden (to be confirmed)
- 2024 Annual Meeting of the National Designated Authorities: 1-2 October 2024, OECD Headquarters

Recent publications:

- [OECD Seed Schemes: Rules and regulations](#); 2023 edition
[Systèmes des semences de l'OCDE : Règles et directives](#) ; édition 2023 (fr)
- [List of Varieties Eligible for Seed Certification](#); July 2023
- [OECD Forest Seed and Plant Scheme “2023” \(Rules and Regulations\)](#)
[Système de l'OCDE pour les semences et plants forestiers “2023” \(Règles et Directives\)](#)

Web sites: <https://www.oecd.org/agriculture/seeds/>
<https://www.oecd.org/agriculture/forest/>

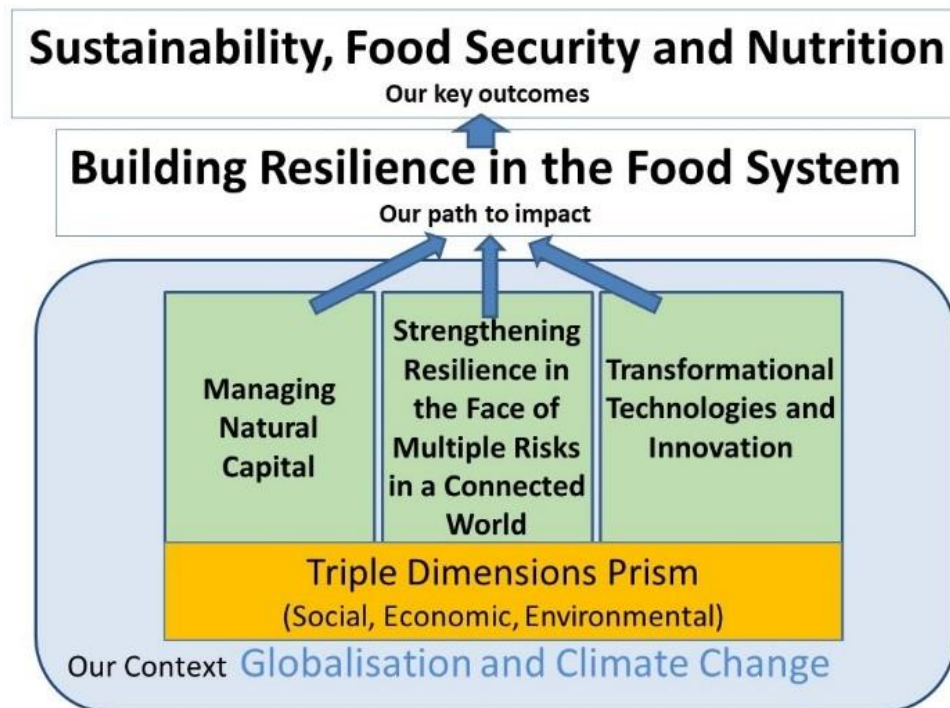
Promotional video on the OECD Forest Scheme: <https://youtu.be/nqGXYz5Sln4>.

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CO-OPERATIVE RESEARCH PROGRAMME: SUSTAINABLE AGRICULTURAL AND FOOD SYSTEMS

The OECD Co-operative Research Programme: Sustainable Agricultural and Food Systems (CRP), which gathers 29 OECD countries, is based on the observation that multi-disciplinary agri-food research is needed to address the gaps in knowledge, deepen understanding and enhance the scientific base of policy. The objectives of the CRP are the following: to provide a sound scientific knowledge base to agricultural policy-making; to contribute to an informed public debate on current and emerging agro-food issues and help resolve conflicting views; and to promote scientific understanding and standards between major regions of OECD. A food systems approach to policy analysis to tackle the “triple challenge” of providing food security and nutrition, and ensuring livelihoods while using natural resources sustainably is in line with the declaration adopted by Agriculture Ministers in 2016 and in 2022 and the work of the Committee for Agriculture. It is also fully aligned with OECD strategic objectives in relation to the need for integrated interdisciplinary approaches in obtaining sustainable solutions. Whilst not specifically mentioned in the title of the Programme, the CRP’s mandate also includes fisheries and forestry research.

Operational features of the Programme involve supporting and promoting international co-operation and networking in the field of basic and applied research. It awards fellowships to scientists from a CRP member country to conduct research projects in another CRP member country, and supports financially workshops to address agro-food issues that are high on the science/policy agenda of Members. The CRP strategy emphasises the need to engage a range of scientific disciplines including the natural sciences, social sciences and the humanities in an interactive dialogue. The CRP has three pillars, or research themes, as depicted below:



The Call for Applications for funding of international conferences and workshops, and fellowships (individual research projects) in 2024 resulted in 21 applications for conference sponsorship and 47 applications for CRP fellowship travel bursaries. Information about which were successful in being granted CRP funding will be given in the next newsletter.

CRP (Co-)Sponsored Conferences and Workshops that took place in 2023:

- ***Reducing nitrogen losses and greenhouse gas emissions from arable agriculture: How can new modelling concepts help?* - Germany, 3-4 May 2023**

This workshop brought together leading experts in the field of measurements and modelling of soil nitrogen processes to discuss what can be done to reduce N losses and N₂O emissions from agricultural systems. Biogeochemical models are used to simulate how abiotic and biotic variables interact through time and across space to determine rates of biogeochemical fluxes. They provide a platform for scientists to evaluate how current and potential changes in climate, land use, disturbance regimes, or vegetation will impact greenhouse gas (GHG) budgets, carbon sequestration and storage, and water quality. However, N₂O emissions, drought-response, and perennial crop age-related dynamics are poorly simulated by models despite their importance to making future predictions of bioenergy crop GHG balances. With mitigation strategies being developed for decarbonising the atmosphere, it is becoming increasingly important for biogeochemical models to confidently project GHG emissions in the future for all ecosystem types, land uses, and climatic variability. Given the amplified global warming potential of N₂O relative to other GHGs, inaccurate estimates of N₂O fluxes under land use or climate change scenarios represent a large source of uncertainty on terrestrial ecosystems climate feedbacks, particularly when considering the agricultural sector. Because a direct measurement of all factors and interactions integrating the nitrogen (N) cycle is unfeasible and subject to large variability, models of varying complexity have been developed to reproduce the complex processes driving N dynamics and ultimately N₂O emissions.

- ***Innovative hydrothermal systems to valorise agricultural residuals: Roadmap towards implementation - achievements and barriers* - Korea, 15-16 May 2023**

This workshop developed a roadmap for the implementation of hydrothermal technology in agricultural production systems to improve material use and recycling of agricultural wastes and residuals as well as surplus biomass. Many years of research have shown that hydrothermal technology can produce value-added products from agricultural materials, such as biomass, wastes and residuals (subsequently denoted as residuals for simplicity). It is potentially beneficial in recycling organic carbon and nutrients from plant and animal residuals to agricultural land, developing economic opportunities in rural areas for businesses valorising residuals, and avoiding negative health and environmental impacts from wet organic residuals. Developing hydrothermal carbonisation (HTC) systems is one of the solutions to remedy agricultural waste and residuals releasing excess nutrients and pollutants in the environment, which are a problem for the sustainable production of food. The roadmap this workshop will produce will help resolve the many hurdles that exist to implementing both technological and policy systems for this technology.

The workshop recognised that currently there are few, if any, specific policies associated with HTC processes and products, prompting a need for developing the infrastructure to accredit HTC as a thermal conversion process.

- ***Antimicrobial use and resistance in livestock production in a One Health context - UK, 22-24 May 2023***

This event focused on specific gaps in the understanding of the use of antimicrobials in livestock systems and the consequences for AMR. The magnitude and gravity of the AMR health crisis has been stressed by national and international commentators and it is clear that there is an imbalance between the attention given to management of AMU/AMR in clinical settings compared to that in livestock production. Since the latter could amount to more than half the global use of antimicrobials, it is important to understand the drivers of their use and the likely health consequences. There is a need to drill down into the data (and data gaps) to understand the cost-effectiveness of specific interventions to control AMU and to break transmission links to AMR. This includes good surveillance and developing better ways of conducting global surveillance rather than waiting for national capacities to develop may be one way to move forward.

- ***Drone Spraying of Pesticides - United Kingdom, 23-24 May 2023***

This event was organised to share latest thinking and to help develop a recommended approach to assessing and mitigating the risks associated with the application of pesticides by drone. Participants pooled knowledge and expertise and shared issues and current developments related to the application of pesticides by drone. Issues discussed included: the drivers for uptake of this new technology, identification of risks and mitigations by aviation and pesticide regulatory regimes, the latest research into human health and environmental exposures, and how to improve current draft best practice advice on planning and conduction drone spraying operations. The outcomes of this conference will contribute to the work of the OECD Working Party on Pesticides Drone sub-Group, which is overseeing a programme of work designed to develop a risk assessment framework for regulatory authorities.

Drones are recognised as a technology that affords an opportunity to apply pesticide in a more sustainable way than traditional methods, but there is a need to improve understanding of the risks to human health and the environment associated with their use. The use of drones for the application of pesticides in agriculture offers the prospect of real benefits from reducing the costs - both economic and environmental - of applying pesticides by providing more carefully targeted application and reduced drift mitigation, thereby reducing environmental impact and risk. This event was highly topical given the wide range of attitudes to this technology in Member countries; some jurisdiction only allow drone use by exception, while others are more liberal. The production of OECD guidelines could help encourage all Member countries to review the benefits of these technologies.

- ***Sustainability in Agriculture & Food Systems - Innovation, Indicators and Implementation - Belgium, 23-24 May 2023***

This conference brought together a diverse range of participants, including policymakers, academia, civil society organisations, industry and other key stakeholders, to engage in a balanced and fruitful discussion on pressing sustainability and innovation issues in agriculture. Given the prevailing uncertainty caused by the conflict in Ukraine and the global food crisis driven by climate change and extreme weather conditions, the conference emphasised the need to consider these uncertainties when implementing sustainable practices. The participants explored established sustainability concepts and innovative approaches aimed at achieving sustainability in agriculture across different countries and regions. The first half of the conference focused on sustainability in agriculture as a whole, while the second half delved into innovation in agriculture and particularly the potential and regulatory landscape for New Genomic Techniques in various parts of the world.

The primary objective was to identify indicators for sustainability that would foster a common understanding of the concept. The discussions recognised the inherent diversity in agricultural systems, including varying approaches to farming, crop selections, farm types, and production standards. The challenge of reaching a consensus on a single, appropriate, and acceptable concept of sustainability was acknowledged. In light of this, the conference explored sustainability across a wide range of agricultural systems, considering environmental, economic, and societal aspects. The discussions acknowledged the rapid evolution of genome editing and its significance in developing new crop varieties and preserving local strains. The participants explored the experiences of different countries, regions, and opinion groups that have already implemented or are considering regulatory approaches to genome editing, including indicators for sustainability.

- ***Beyond growth: Fishing for the future* - United Kingdom, 3-14 June 2023**

The aim of the Beyond Growth symposium was to provide a new vision for operationalising fisheries in a wellbeing economy in order to address the multi-dimensional challenges that exist in the fishing industry. The symposium brought together leading members of the scientific community working on these issues, with a number of other stakeholders including fishers representing different scales, decision makers from industry and policy makers. Specifically, it increased scientific and practical understanding of wellbeing in fisheries; developed a vision and practical framework for 'beyond growth' in the fishing industry; and brought together multiple stakeholders to co-create recommendations.

Policymakers are already critically aware that seafood industries and human activities have significant negative impacts on marine systems, which has led to decades of research on how to make seafood production and consumption more sustainable and communities more resilient. Positioning economic growth as an integral and vital aspect of sustainable development unnecessarily and counterproductively restricts the means of achieving sustainability. OECD countries should lead by example in setting a vision and pathway towards a more sustainable seafood sector. In discussing multiple risks associated with the current system, the symposium helped increase understanding and begin a policy-industry-research dialogue on strengthening resilience within the fishing industry and society more broadly through transformed thinking and approaches. Specific policy recommendations raised in the symposium include: starting with a change in the mental model or paradigm currently used to talk about wellbeing and growth, ensuring that wellbeing economics is found in ocean governance meetings, policy documents and dialogues, ensuring there is representation at multiple stakeholder levels in decision making, and highlighting and expanding local solutions driving a wellbeing economy

- ***The future role of ley-farming in cropping systems* - Lithuania, 11-14 June 2023**

The topic of this symposium links to grassland management in cropping systems, highlighting the multiple and diverse ecological services provided by grassland. Stockless farming is gradually growing in many countries; hence the contribution of ley-farming to ecosystem services for improving the sustainability of cropping systems is becoming increasingly important in all different farming systems (conventional, integrated, organic, conservation, carbon, climate-smart, or regenerative). The symposium addressed the main critical dimensions of how to manage natural capital by securing the availability and quality of natural resources such as Land, Soil, Water, and Biodiversity, as well as Integrated Agricultural Production Systems.

In the future grasses could be exploited as raw materials for varieties of bio-based products and, by extension, value chains of short-term grasslands offer new possibilities in the bioeconomy. Similarly, developing knowledge based on ways to introduce ley-pastures into cropping systems covers many vital issues. This session was designed to discuss ley-pastures as a resource for producing forage or novel usage of biomass and their quality, feasibility for processing

(composts, proteins, bio-products, etc.) in future management systems. Biodiversity and ecosystem services are the main drivers of ecological restoration, receiving more attention from international initiatives. Diversifying cropping techniques has been proposed as one of the main ways to move towards sustainable cropping systems. Ley pastures provide multiple ecosystem services, such as nutrient input, biological control of pests and weeds, which might act positively on regeneration of arable soil structure, soil microbial communities, etc. Ley can also contribute to regenerating soil functions, increasing soil carbon sequestration and offer higher production and other efficient ecosystem services, when combined with various species of functional plants.

- ***Food and feed for the future - France, 1 September 2023***

This conference explored: how agri-food systems need to evolve towards sustainability and resilience to ensure nutritional food security; the major system transformations required; and alternative, diversified protein sources for sustainable food systems - insects, yeast and microalgae. The conference highlighted several challenges for policy and regulatory bodies: the need for the development of sustainability indices in the livestock sectors; the need for tools and labelling standards for the assessment and authentication of livestock product quality (healthy-tasty-safe) and provenance; regulatory challenges for novel, nutritional foods when criteria only relate to food safety; how the sustainable “intention behaviour gap” should be addressed - the difference between what people aspire to achieve and are aware of versus what they have achieved in relation to movement towards sustainability behaviours; and the need to work with policy makers and the food industry to encourage better choice given that choice can be easily manipulated.

- ***Combatting resistance using bacteriophages for eco-sustainable agriculture and food systems - Spain, 12-13 September 2023***

The emergence of antimicrobial resistance associated with widespread use of antimicrobials in the livestock sector, agriculture, and fisheries, showed the need to find sustainable alternatives to combat pathogenic bacteria. Similarly, food safety is involved in the control of undesirable bacteria throughout the entire food chain from production to consumption, an important public health function. In this context, the main objective of the event was focused on the evaluation of bacteriophages as natural, safe and sustainable antimicrobials for application in the agrifood sector as alternative to antibiotics and pesticides or, at least, to reduce their use. Both industry and policy makers participated in the event presenting the update in their respective areas and the future challenges to implement this in each sector. Strategies based on bacteriophages might contribute to improving the resilience in the food system, and the biocontrol of plant diseases using bacteriophages will reduce the contamination of food, soil and water with pesticides and other chemical biocides that are dangerous for natural ecosystems and human health, thereby maintaining sustainable agro-systems.

Information about these are posted on the [CRP website](#).

CRP 2023 Fellowships completed in 2023 of particular interest to ICGB:

- ***Adapting crops to changing environments using related species and innovative pre-breeding approaches***

Agriculture sits at the nexus of almost all of humanities grand challenges, including food security, climate change, and global poverty. Specifically, plant breeding has historically had a fundamental role in shaping agricultural practices and can therefore have a large impact in the

development of a more sustainable and resilient agriculture. The goal of this fellowship was to push the boundaries of plant breeding by deploying state of the art tools from satellites to genomics to breed for sustainable agricultural systems using cereals as an example. Specifically, the researchers provided new designs for large genomic evaluations of breeding programs as well as improved genomic prediction methods with additional layers of phenomics and environomics to breed for emerging ecosystem services traits.

- ***Advanced breeding tools for meeting sustainable production and resilience: from satellites to genes***

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- ***Environmental monitoring using honey bee colonies and a novel sampling tool***

A challenge of current agriculture is to balance the use of agrochemicals for increased productivity with the need to protect pollinator and environmental health. Monitoring for environmental contamination is therefore crucial to guide stakeholders and inform policy decisions towards increasing food security and environmental sustainability. The European honey bee, *Apis mellifera*, has proven to be an effective bio-sampler of the environment as it brings pathogens and contaminants to the hive where they can be. The goal of the project was to develop an intercontinental collaboration for knowledge exchange and technology transfer on bee-mediated monitoring and to facilitate a comprehensive study of the environmental distribution of agrochemicals. The research project leverages previous knowledge from the fellow and the host, as well as data collected during this new collaboration, and contributes to the acquisition of science-based evidence to guide conversations and policies on pesticide used in Canada, in European countries, and in other OECD members. It will also inform the development of integrated pest management strategies to promote pollinator and environmental health while supporting crop protection and productivity. The data will inform stakeholders and policy makers towards evidence-base regulations regarding the use of agrochemicals to increase pollinator and ecosystem health, the sustainability of agricultural system and increased food security.



- ***Innovative approach to remove seafood pathogens along the seafood chain***

The objective of this project was to enhance the food safety in the seafood industry by implementing an innovative approach to combat biofilms of seafood pathogens *Vibrio parahaemolyticus* and *Listeria monocytogenes*, based on combined biological and physical methods. An important discovery was made during this research project: residues of a disinfectant widely used along the seafood chain, both by professionals and individuals, can lead to an overproduction of *Vibrio* biofilms on surfaces. This fosters the proliferation of this pathogen and may result in cross-contamination of food. These findings could be of significant importance for regional, national, or international competent authorities. They could serve as a basis to develop new recommendations for cleaning and disinfection procedures in the seafood industry. Additionally, these recommendations could specifically target individual users of this disinfectant in domestic kitchens. By implementing these new recommendations, the research from this project should contribute to enhancing food safety and reducing the risks of *Vibrio* contamination in the seafood sector. These preventive measures would be beneficial for public health and the entire food industry.

- ***Land tenure models for carbon positive land use: comparative case studies between Scotland and New Zealand***

It is argued that private property regimes in many global North countries present a structural challenge to the transformation of food systems through sustainable agricultural production, and that there has been insufficient attention by policymakers in addressing land tenure issues (and in identifying innovative opportunities) in order to affect critical changes in land use. A similar case can be made for the necessary shift to reduce carbon emissions, and to mitigate for and adapt to climate change. Whilst policymakers appear to act slowly, international land markets are responding rapidly to the opportunities of carbon trading, especially in neoliberal societies such as the United Kingdom and New Zealand (home and host countries of the CRP fellow). This project aimed to explore the implications of the growing carbon market on property regimes and land governance in Scotland and New Zealand, to share knowledge between research and policy in both countries, and to identify a framework of land tenure solutions to mitigate the environmental and social risks of land use change for carbon, whilst maximising opportunities.

- ***Smart farming technologies and transformation in the work of farmers and advisers: Implications for technology adoption and policy***

This research project has confirmed and expanded the studies to date on the implications for work from smart farming technologies. These findings are important to support the development of practices and policies related to smart farming technologies which factor in the work dimensions of technology selection and use on farm and highlight the important role of advisers in technology implementation. This can assist in more appropriate technology selection and assessment to support both farming and environmental goals at a regional and national level.

The research will be of interest internationally through identifying common issues across Australia and the UK (home and host countries of the CRP fellow) that can be applied by multinational companies to avoid a technology push approach to technology use on-farm whereby the human and social dimensions are included in the evaluation of technologies leading to more appropriate and better serviced options.

Interviews conducted with farmers and advisers showed they were very interested to hear about the other country experiences and to be connected with others to share experiences. An online workshop to be conducted in September to report the findings of the research and allow for cross-country interaction and dialogue should have helped achieve this.

- ***Transcriptomic analysis of the Vibrio vulnificus pv. piscis exposed to fish mucus***

Vibrio vulnificus pv. piscis is a fulminating pathogen causing a range of diseases of marine animals including species essential in fisheries and as raw food sources such as eels and shrimps. If the selected genes are essential for the virulence and the pathogenesis of *V. vulnificus pv. piscis*, they will be characterised at molecular levels. Then molecular characteristics of the selected genes can lead to the development of novel strategies to control the pathogen. For example, development of small molecules to inhibit expression of the selected genes can attenuate the virulence and pathogenesis of the *Vibrio* species. Attenuation of the virulence and pathogenesis of the pathogen could be beneficial to increase the production rate of the marine animals as important raw food sources.

Brief descriptions of these fellowships are posted on the [CRP website](#).

Recent publications and papers:

- De la Fuente L. et al. (2023), *Phytopathology*, Vol. 113, N°6, “Two *Xylella fastidiosa* subsp. multiplex strains isolated from almond in Spain differ in plasmid content and virulence traits”, APS; <https://doi.org/10.1094/PHYTO-06-22-0234-R>
- De la Fuente L. et al. (2023), *Phytopathology*, Vol. 113, N°6, “Complete circularized genome resources of seven strains of *Xylella fastidiosa* subsp. *fastidiosa* using hybrid assembly reveals unknown plasmids”, APS; <https://doi.org/10.1094/PHYTO-10-22-0396-A>
- Gedeon C. et al. (2023), *Applied Soil Ecology*, Vol. 188, 104878, “Predicting microbial responses to changes in soil physical and chemical properties under different land management”, Elsevier; <https://doi.org/10.1016/j.apsoil.2023.104878>
- Kelling I., M. Carrigan and A.F. Johnson (2023), *Food Security*, “Transforming the seafood supply system: challenges and strategies for resilience”, Springer; <https://doi.org/10.1007/s12571-023-01400-5>
- Reyes F., A. Sofo et al. (2023), *Journal of Soil Science and Plant Nutrition*, 23, 4078-4090, “Plant growth and root morphology are affected by earthworm-driven (*Eisenia sp.*) Changes in soil chemico-physical properties: a mesocosm experiment with broccoli and faba bean”, Springer Link; <https://doi.org/10.1007/s42729-023-01325-0>
- Rossignaud, L., D. Kelly, E. B. Spurr, D. J. Flaspohler, R. B. Allen and E. G. Brockerhoff (2022), *Avian Conservation and Ecology*, 17(2):4 “Trends in bird counts 1978-2020 in a New Zealand *Nothofagus* forest with variable control of mammalian predators”, The Resilience Alliance; <https://doi.org/10.5751/ACE-02176-170204>

Note: The call for the submission of applications for 2025 research fellowship awards and conference sponsorship will open in **April 2024 until 10 September 2024** (midnight Paris time).

All relevant information and application forms will be available on the CRP website, through the link: www.oecd.org/agriculture/crp.

Website: www.oecd.org/agriculture/crp

Contacts: Janet Schofield (TAD/PROG), Lee Ann Jackson (TAD/ATM)

UPCOMING OECD EVENTS IN BIOTECHNOLOGY 2024

- 29 January-2 Feb 2024** OECD Agricultural Seed Schemes: Technical Working Group Meeting, Livingstone, Zambia (Contact: C. Gaspar, TAD/COD)
- 18-20 March 2024** 31st Meeting of the Working Party for the Safety of Novel Foods & Feeds, OECD Paris (Contact: R. Machida, ENV/EHS)
- 20-22 March 2024** 38th Meeting of the Working Party on the Harmonisation of Regulatory Oversight in Biotechnology, OECD Paris (Contact: S. Nakano, ENV/EHS)
- 23-24 April 2024** OECD Forest Seed and Plant Scheme: Technical Working Group Meeting, Sweden (to be confirmed) (Contact: C. Gaspar, TAD/COD)
- 14-16 May 2024** 19th Meeting of the Working Party on Biotechnology, Nanotechnology and Converging Technologies (BNCT), OECD Paris (Contact: D. Winickoff, STI/STP)
- 10-14 June 2024** OECD Agricultural Seed Schemes: Annual Meeting of the OECD Seed Schemes, Nice, France (Contact: C. Gaspar, TAD/COD)
- 10 September 2024** Deadline for the Call for CRP applications for 2025 research fellowship awards and conference sponsorship 2025 (Contact: J. Schofield, TAD/PROG)
- 1-2 October 2024** OECD Forest Seed and Plant Scheme: Annual Meeting of the National Designated Authorities, OECD Paris (Contact: C. Gaspar, TAD/COD)

OECD BIOTECHNOLOGY AND THE WORLD WIDE WEB

OECD's web site includes much information on biotechnology and related topics. The web site allows individual users to tailor the OECD site to their needs. By selecting the themes that interest them, visitors can personalise their homepages at 'My OECD' to present the news, events, and documentation related to their chosen themes. Links to more detailed web pages are given in related sections above.

- OECD's portal: www.oecd.org
- OECD's work on green growth: www.oecd.org/greengrowth (Eng.)
www.oecd.org/croissanceverte (Fr.)
- OECD's global fora portal: www.oecd.org/global-relations/globalforums/ (Eng.)
www.oecd.org/fr/rerelations-mondiales/forumsmondiaux
- OECD's work on biosafety and food/feed safety for transgenic products, "BioTrack" Online: www.oecd.org/biotrack
- OECD's BioTrack products database: <https://biotrackproductdatabase.oecd.org>
- OECD Conference on dsRNA-based Products:
<http://www.oecd.org/chemicalsafety/pesticides-biocides/conference-on-rnai-based-pesticides.htm>
- OECD's work on biodiversity: www.oecd.org/environment/resources/biodiversity/
- OECD STI's emerging technologies; biotechnology, nanotechnology and converging technologies (BNCT): www.oecd.org/sti/emerging-tech
- OECD's key biotechnology indicators (KBI): oe.cd/kbi
- OECD's key nanotech indicators (KNI): oe.cd/kni
- OECD-FAO Agricultural Outlook: www.agri-outlook.org/commodities/
- AMIS Market Monitor Report: www.amis-outlook.org/amis-monitoring/monthly-report/en/
- International Energy Agency (IEA) work on renewable energy: <https://www.iea.org/energy-system/renewables>
- Biofuture Platform (BfP), IEA facilitator: <http://biofutureplatform.org/>
- OECD's work on agricultural productivity and innovation: www.oecd.org/agriculture/topics/agricultural-productivity-and-innovation
- OECD's seed certification schemes (agriculture, forest):
<http://www.oecd.org/agriculture/seeds> <http://www.oecd.org/agriculture/forest>
- OECD's Cooperative Research Programme: Sustainable Agricultural and Food Systems: www.oecd.org/agriculture/crp

Visit the [OECD Biotechnology Update website](#) to access the latest news and previous editions.

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ENDNOTE: A BRIEF GUIDE TO THE OECD

The Organisation for Economic Co-operation and Development (OECD) is an intergovernmental organisation with 38 member countries². The mission of the OECD is to promote policies that will improve the economic and social well-being of people around the world. OECD brings together the governments of countries committed to democracy and the market economy to support economic growth, boost employment, raise living standards, maintain financial stability, assist other countries' economic development, and contribute to growth in world trade.

The Organisation provides a setting where governments compare policy experiences, seek answers to common problems, and identify better policies for better lives. An increasing number of non-member economies participate in a wide range of activities, including some of those related to biotechnology. The Council of OECD is the highest decision-making body of the Organisation. Its members are the Ambassadors of the Member countries to OECD. It is chaired by OECD's Secretary-General. Once a year, it also meets at the level of Ministers from member countries. The Council decides on the annual budget of Organisation as well as the content of the programme of work.

In addition to the Council, there are more than 300 committees, expert and working groups, which undertake the Organisation's programme of work. The governments of the Member countries nominate the participants to all these groups.

² OECD member countries are: Australia, Austria, Belgium, Canada, Chile, Colombia, Costa Rica, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Republic of Türkiye, the United Kingdom and the United States. The European Commission also takes part in the work of the OECD.

Internal Co-ordination Group for Biotechnology