

Biotechnology Update Internal Co-ordination Group for Biotechnology (ICGB)

No. 23 – 8 March 2012

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

The contents of this 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: icgb@oecd.org. Alternatively, individuals can be contacted via e-mail using the form firstname.lastname@oecd.org.

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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 industry. So in 1993, the Internal Co-ordination Group for Biotechnology (ICGB) was established to facilitate co-ordination among these sectors.

Stefan Michalowski, Counsellor of the OECD Global Science Forum, chairs the ICGB. Peter Kearns, Head of OECD's Biosafety Programme, is the Executive Secretary of the ICGB. He is assisted by Bertrand Dagallier, Biosafety and Novel Foods and Feeds Safety, who is the editor of the ICGB Newsletter.

Contacts: Peter Kearns, Bertrand Dagallier (ENV/EHS)

NEW ICGB CHAIR!

Following the retirement of Mr. Michael Osborne, who chaired the ICGB from 1995 to 2011, the Secretary General appointed **Mr. Stefan Michalowski** to serve as chair. A former particle physicist who joined OECD in 1995, he is currently the Counsellor of the OECD Global Science Forum in the Directorate for Science, Technology and Industry.



TOWARDS GREEN GROWTH WITH BIOTECHNOLOGY

The Green Growth Strategy: The Road To Rio

The Green Growth Strategy, delivered at the 2011 OECD Ministerial Council Meeting, aims to help countries foster economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies.

Ongoing work since the launch is focusing on tailoring the Strategy's framework to country, sector and issue-specific areas and on finding better ways of measuring progress towards green growth. OECD work is also underway to examine how green growth can help maximise development outcomes.

The Rio+20 Summit will be held in June 2012. The work on green growth will be a core part of the OECD contribution to Rio+20, in particular issues that are more specifically related to developing countries.

A number of countries have started to apply green growth policies and tools to their own context. For example, in May 2011, the Netherlands national statistical agency published *Green growth in the Netherlands*, implementing twenty of the thirty OECD green growth indicators.

In conjunction with the Global Green Growth Institute, UNEP, and the World Bank, the OECD is developing the [Green Growth Knowledge Platform](#) (GGKP). The purpose of the GGKP is to expand efforts to identify and address major knowledge gaps in green growth theory and practice, and to help countries design and implement policies to move towards a green economy. The platform was launched at the [GGKP inaugural conference](#) in Mexico on 12-13 January 2012.

The OECD and IEA have recently released the joint report [Green Growth Studies: Energy](#) which highlights the challenges facing energy producers and users, and how they can be addressed using green growth policies.

Delegates to the Task Force on Industrial Biotechnology (TFIB) and the Working Party on Biotechnology (WPB) have access to the [International Green Growth Dialogue](#) secure site. In case of access problems, email greengrowth@oecd.org

Key publications:

English

- [Towards Green Growth](#)
- [Towards Green Growth - Monitoring Progress: OECD Indicators](#)
- [Towards green growth: A summary for policy makers](#)

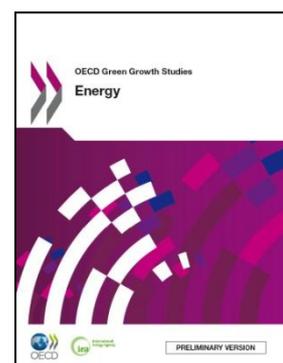
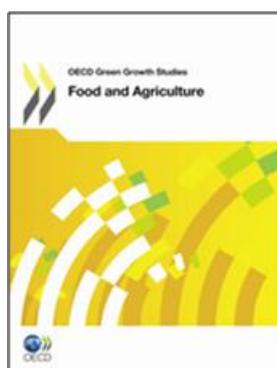
French

- [Vers une croissance verte](#)
- [Vers une croissance verte : Suivre les progrès : Les indicateurs de l'OCDE](#)
- [Outils pour la mise en place d'une croissance verte](#)
- [Vers une croissance verte : Résumé à l'intention des décideurs](#)



2 December 2011 - OECD Secretary-General Angel Gurría with Korean president Lee Myung-Bak and the UN Secretary-General Ban Ki-Moon during the fourth high-level forum on aid effectiveness in Busan, Korea. A roundtable event discussed how green growth could play a more prominent role in supporting a more effective development agenda.

Recent publications: OECD Green Growth Studies



Web site: www.oecd.org/greengrowth/ / www.oecd.org/croissanceverte

Secure web site: <https://community.oecd.org/community/greengrowth>

Contact: Nathalie Girouard, Catherine Jeffcoat (ENV)



GLOBAL FORUM ON BIOTECHNOLOGY

The Global Forum on Biotechnology, established in 2010, is one of 13 Global Forums created by OECD Committees. Global Forums are not official OECD bodies (except one¹), but are best described as broad communities or networks of stakeholders in the areas of responsibility of one or more Committees. OECD Committees have an interest in hearing the views of these stakeholders, but their capacity to accommodate non-Member observers is very limited.

The OECD Global Forums provide platforms for peer learning and policy dialogue on issues which require interaction with non-Members world-wide. Global Forums can also promote multidisciplinary and horizontal approaches beyond the scope of any single Committee and foster partnerships with other intergovernmental organisations.

OECD Global Forums 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 help to create active networks of policy makers in Member and non-Member economies, to build consensus on what are the most effective policies and to identify “next-generation” issues.

The principal functions of Global Forums are to:

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

¹ The Global Forum on Transparency and Exchange of Information for Tax Purposes differs from all other Global Forums: it is a separate OECD Body in which many countries and economies outside the OECD’s Membership participate on an equal footing with OECD Member countries.

The Global Forum on Biotechnology supports the activities and networks in the field of biotechnology developed by the Committee for Scientific and Technological Policy and the Joint Meeting of the Chemicals Committee and the Working Party on Chemicals, Pesticides and Biotechnology.

Web site: General information on the Global Forums can be found at:
www.oecd.org/globalrelations/forums (French: www.oecd.org/relationmondiales/forums).

Contact: Jan Schuijjer (SGE/Global Relations Secretariat)



ADAPTATION TO CLIMATE CHANGE

As part of the programme of work on Economic Aspects of Adaptation to Climate Change, case studies examine what role the private sector can play in facilitating adaptation to the impacts of climate change.

One of these case studies – *Adaptation and Innovation: An Analysis of Crop Biotechnology Patent Data* – examines inventive activity to develop crop varieties that are more resilient to certain abiotic stresses through a patent analysis. This analysis provides an indication of trends in innovation in adaptation-related biotechnology and examines where innovation takes place and how knowledge is transferred across national borders. The case study was discussed at the November 2011 meeting of the Working Party on Climate, Investment and Development (WPCID) and will be published as an Environment Working Paper in March 2012.

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HARMONISATION OF REGULATORY OVERSIGHT IN BIOTECHNOLOGY

The OECD's *Working Group on Harmonisation of Regulatory Oversight in Biotechnology* (the Working Group) deals with the environmental risk/safety assessment of transgenic plants and other genetically engineered organisms. The work aims to ensure that the type of information 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 risk/safety assessment process and avoids duplication of effort, while reducing barriers to trade.

The participants to the Working Group are mainly officials who have responsibility for the environmental risk/safety assessment of products derived from modern biotechnology. Observer delegations and invited experts are also associated with the work, incl. Argentina; the Russian Federation; FAO; UNEP; the Secretariat of the Convention on Biological Diversity (SCBD); and the Business and Industry Advisory Committee to OECD (BIAC). Participation of non-member economies, such as Brazil, China, India, Philippines and South Africa, is important due to their increasing use of biotech products together with the development of activities on tropical and sub-tropical species. Their participation is supported by the OECD's Global Forum on Biotechnology.



The publication of Consensus/Guidance Documents continues to be a major output of the Working Group. These documents constitute a set of practical tools for regulators and biosafety assessors dealing with new transgenic plant varieties and organisms, with respect to environmental safety. To date, 44 Consensus Documents have been published. They address a range of issues including the biology of crops, trees and micro-organisms as well as selected traits that have been introduced in plants. They are available through the OECD website (www.oecd.org/biotrack).

The Working Group is preparing new documents on the following crop/tree species: *Brassica* sp.; tomato; cucurbits; sugarcane, sorghum and eucalyptus. Micro-organisms issues are also being addressed: recent guidance document published on pathogenicity factors linked to bacteria, document on the genus *Fusarium* being prepared, other projects under consideration for future development. Work is in progress on two key issues in the context of environmental risk assessment: 1) Considerations for the release of transgenic plants (a Steering Group meeting was hosted by Mexico in Guadalajara on 26-28 September 2011 to facilitate further drafting), and 2) Situations of low level presence of genetically-engineered plant materials in conventional seeds or commodities. In addition, a document on the biology of Atlantic salmon is under preparation; it will be the first document dealing with an animal species.

The Working Group is also managing the BioTrack Product DataBase, in collaboration with the Task Force for the Safety of Novel Foods and Feeds (see section "BioTrack Online" below).

Future events:

- OECD Conference on the "Environmental Uses of Micro-organisms: an overview of the state-of-the art and implications for biotechnology risk assessment", OECD Paris, 26-27 March 2012 – (see *dedicated section below*)
- 26th Meeting of the Working Group on the Harmonisation of Regulatory Oversight in Biotechnology, OECD Paris, 28-30 March 2012

Recent publication:

- 📖 [Guidance Document on the Use of Information on Pathogenicity Factors in Assessing the Potential Adverse Health Effects of Micro-organisms: Bacteria](#) (2011)

Upcoming publications:

- 📖 *Consensus Document on the Biology of the Brassica Crops (Brassica spp.)*
- 📖 *Consensus Document on the Biology of Cucurbita spp. (Squashes, Pumpkins, Zucchini or Gourds)*
- 📖 *Consensus Document on the Biology of Tomato (Lycopersion spp.)*

Web site: BioTrack Online www.oecd.org/biotrack

Contacts: Kazuyuki Suwabe, Bertrand Dagallier, Peter Kearns (ENV/EHS)



SAFETY OF NOVEL FOODS AND FEEDS

The OECD *Task Force for the Safety of Novel Foods and Feeds* (Task Force) addresses aspects of the safety assessment of foods and feeds derived from genetically engineered crops. The work aims to ensure that the types of information 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 because of recognised experience in their use. Harmonised methods and practice, as well as share of data are facilitated through the Task Force activities.

Consensus Documents

The main output of the Task Force programme is the set of *Consensus Documents* on compositional considerations of new varieties of specific crops. They compile a common base of scientific information on the major components of crop plants: key nutrients; toxicants; anti-nutrients and allergens where relevant. Other publications deal with general aspects to facilitate harmonisation in safety assessment. These documents constitute a set of practical tools for regulators and risk assessors dealing with new transgenic varieties, with respect to human food and animal feed safety. To date, 21 Consensus Documents have been published on major crops, a mushroom, the animal feedstuffs obtained from transgenic plants, and the molecular characterisation of plants derived from modern biotechnology developed in common with the Working Group. This "Novel Food and Feed Safety" Series complement the Working Group publications on environmental safety.

Two new Consensus Documents were issued recently; one on Sugarcane (*Saccharum* spp. hybrids), and another one on Low erucic acid rapeseed (canola) which revised the 2001 publication. The Soybean document is also under revision process to incorporate recent information and should be published soon. In addition, work started on common bean (*Phaseolus vulgaris*) and oyster mushroom (*Pleurotus ostreatus*). Other activities might be contemplated for the future: discussing animal compositional data. projects on pineapple composition, revision of the rice document, new plant breeding biotechnological techniques, etc.



A compendium of the Consensus Documents on novel foods/feeds safety produced by the Task Force since its establishment is being prepared, for publication mid 2012.

Outreach and Non Member Economies Engagement

The Task Force 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. The development of activities on tropical and sub-tropical species was made possible through active co-operation with some of these countries and targeted expertise from international research organizations, FAO, WHO and others. South Africa, Brazil and Thailand, for example, were actively involved in the drafting of Consensus Documents on compositional considerations for cassava, sweet potato, papaya or sugarcane, while Brazil is leading the new project on common bean. The Task Force benefits also from the expertise of specialists from Argentina, China, Latvia, Philippines, and the Russian Federation. Such participation is supported by the OECD's Global Forum on Biotechnology.

Future event:

- 19th Meeting of the Task Force for the Safety of Novel Foods & Feeds, OECD Paris, 22-23 March 2012

Recent publications:

- 📖 [Consensus Document on Compositional Considerations for New Varieties of Sugarcane](#) [*Saccharum* spp. hybrids]: Key Food and Feed Nutrients, Anti-Nutrients and Toxicants (2011)
- 📖 [Revised Consensus Document on Compositional Considerations for New Varieties of Low Erucic Acid Rapeseed \(Canola\)](#): Key Food and Feed Nutrients, Anti-Nutrients and Toxicants (2011)

Upcoming publications:

- 📖 *Revised Consensus Document on Compositional Considerations for New Varieties of Soybean* [*Glycine max*]: Key Food and Feed Nutrients, Anti-Nutrients, Toxicants and Allergens (will supersede the 2001 version)
- 📖 *Safety Assessment of Novel Foods and Feeds Derived from Transgenic Crops – OECD Consensus Documents – Volumes 1 & 2*. This compendium will collate the key documents produced by the Task Force between 2002 and 2012

Web site: BioTrack Online www.oecd.org/biotrack

Contacts: Bertrand Dagallier, Peter Kearns (ENV/EHS)



BIOTRACK ONLINE

The BioTrack Online information system is a mechanism by which the *Working Group on Harmonisation in Biotechnology* and the *Task Force 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. The webpage was improved in December 2010 to offer a more user-friendly access to the documents.

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. For example information on new and updated entries, provided by the European Commission and Japan, was added in the course of 2011. The Product Database currently includes 158 entries of transgenic crops and flowers from 14 species. 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.

Progress has been made on co-operation between the OECD's Product Database, the FAO Global Portal on Food Safety, Animal and Plant Health, the CBD Biosafety Clearing-House, for interoperability between these web-based systems and facilitating the exchange of information on safety assessment of transgenic organisms and foods. This project was developed in response 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.

BioTrack Online also contains the regulatory contacts of OECD member countries and other stakeholders involved in biosafety and novel food/feed safety .

Web site: BioTrack Online www.oecd.org/biotrack
Products Database www.oecd.org/biotrack/productdatabase

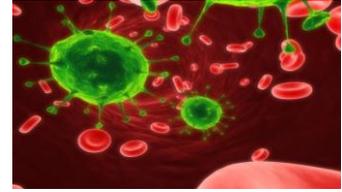
Contacts: Kazuyuki Suwabe, Bertrand Dagallier, Peter Kearns (ENV/EHS)



CONFERENCE ON THE ENVIRONMENTAL USES OF MICRO-ORGANISMS – MARCH 2012

An "OECD Conference on the Environmental Uses of Micro-organisms: an overview of the state-of-the-art and implications for biotechnology risk/safety assessment" will be held on 26-27 March 2012 at the OECD Headquarters, Paris, France. This conference will cover developments in environmental microbiology as applied for biotechnological purposes. It will also deal with the role of genetic engineering of micro-organisms for environmental uses, now and in the near future. The conference is organised by the OECD Working Group on Harmonisation of Regulatory Oversight in Biotechnology, with the support of the OECD Cooperative Research Programme.

The Conference will present an overview of relevant fields of environmental microbiology such as the use of micro-organisms in agriculture, for production of biofuels and other industrial products, as well as for CO₂ sequestration, for bioremediation purposes, microorganism-based cleaning products and paratransgenesis. The programme will include the following themes:



Session 1:	Use of micro-organisms in agriculture
Session 2:	Use of micro-algae for production purposes
Session 3:	Use of micro-organisms for bioremediation
Session 4:	Use of micro-organisms in cleaning products
Session 5:	Environmental applications of microbial symbionts of insects
Special Session:	Considerations for environmental risk assessment of the deliberate release of engineered micro-organisms

The Conference is open to delegates and regular participants in OECD activities, as well as external scientists, regulators and individuals interested in the subject.

Future event:

- Conference on the "Environmental Uses of Micro-organisms: an overview of the state-of-the-art and implications for biotechnology risk/safety assessment", OECD Paris, 26-27 March 2012

Web site: http://www.oecd.org/document/1/0,3746,en_2649_34385_49792065_1_1_1_1,00.html

Contacts: Kazuyuki Suwabe, Bertrand Dagallier (ENV/EHS)



BIODIVERSITY ECONOMICS AND POLICY

Biodiversity work at the OECD focuses on valuation and the use of economic instruments, incentive measures, and the creation of markets to promote the conservation and sustainable use of biodiversity and ecosystem services. This work also supports the UN Convention on Biological Diversity. The work is undertaken under the OECD Working Party on Biodiversity, Water and Ecosystems (WPBWE)², a subsidiary body of the Environment Policy Committee (EPOC).

Biodiversity is fundamental to sustaining life, providing critical ecosystem services, such as food security, water purification, nutrient cycling, and climate regulation, that are essential to support human well-being and economic growth. The *OECD Environmental Outlook to 2030*, released in 2008, identified biodiversity as one of the four critical environmental priorities for the coming two decades. The *Outlook* projected that, without renewed efforts to halt the loss of biodiversity, a further 10% of biodiversity (measured in Mean Species Abundance) will be lost by 2030, from 2000 levels. The forthcoming *OECD Environmental Outlook to 2050* (to be released in early 2012) presents an update of recent and projected trends in biodiversity and examines the key policy implications that are needed to address biodiversity loss and degradation. Four areas where further action is critically needed are identified. These are: reforming environmentally harmful subsidies; scaling up private sector engagement in biodiversity, including for innovative financing; improving knowledge and data for more effective biodiversity policy; and mainstreaming biodiversity into other sectors and policy areas of the economy.

Other forthcoming work includes a report on "Green Growth and Biodiversity", which builds on and contributes to the broader OECD horizontal work on a Green Growth Strategy (GGS). Green Growth

² Previously the Working Group on Economic Aspects of Biodiversity (WGEAB)

refers to promoting economic growth and development while reducing pollution and greenhouse gas emissions, minimising waste and inefficient use of natural resources, maintaining biodiversity, and strengthening energy security, including through reducing dependence on fossil fuel imports.

Recent OECD work on biodiversity includes a publication on *Paying for Biodiversity: Enhancing the Cost-Effectiveness of Payments for Ecosystem Services* (OECD, 2010) which identifies good practice in the design and implementation of PES programmes so as to enhance their environmental and cost-effectiveness. Drawing on theory and more than 30 case studies across both developed and developing countries, the book addresses the following questions: Why are PES useful and how do they work? How can they be made most environmentally and cost-effective? What are the different potential sources of finance for PES programmes, and how can they be secured? What are the lessons learned from existing PES programmes and insights for future programmes, including international PES? An expert workshop on this issue was convened on March 25, 2010.

More recently, the OECD convened an expert workshop on *Mobilising Private Sector Finance for Biodiversity Conservation and Sustainable Use* on March 9th, 2011. The workshop aimed to explore options, challenges, and opportunities for scaling-up finance from the private sector. The workshop brought together more than 50 participants from government, private sector and non-governmental organisations to discuss and exchange experiences on recent and innovative initiatives, and the lessons learned.

Building on this workshop, the OECD is currently undertaking work to examine key features that need to be considered in the design and implementation of innovative finance mechanisms for biodiversity to ensure that they are environmentally effective, economically sound and distributionally equitable. It will examine mechanisms to raise finance from both the public and private sector, including instruments such as biodiversity offsets, markets for green products, and addressing biodiversity through climate change and development finance, amongst others.

Future event:

- 3rd Meeting of the Working Party on Biodiversity, Water and Ecosystems (WPBWE), OECD Paris, 30-31 May 2012, with a back-to-back Biodiversity Expert Workshop on 1 June 2012.

Recent publication:

- 📖 OECD (2010), *Paying for Biodiversity: Enhancing the Cost-Effectiveness of Payments for Ecosystem Services*

Upcoming publication and report:

- 📖 *Green Growth and Biodiversity*
- 📖 *OECD Environmental Outlook 2050* with a chapter on *Biodiversity*

Web site: www.oecd.org/env/biodiversity

Contact: Katia Karousakis (ENV/CBD)



BIOMARKERS AND TARGETED THERAPIES

Policy Issues for the Development and Use of Biomarkers in Health (2011)

Application of biomarkers in the field of human health is improving our understanding of disease, and will provide new knowledge of disease mechanisms and processes, leading to means for improved health management through earlier diagnosis of disease and delivery of more efficacious and safer therapies.



The OECD Working Party on Biotechnology (WPB) launched work on biomarkers in 2008 by holding a workshop in Hinxton, United Kingdom, entitled "Policy Issues in the Development of Biomarkers in Health." This meeting was a follow up to the work on Pharmacogenetics. As a support to the 2008 workshop a number of background analytical papers have been provided and are available online.

The workshop conclusions along with information obtained from other health work ongoing under the WPB has been used to develop a policy report, *Policy Issues For The Development And Use Of Biomarkers In Health (2011)*, www.oecd.org/dataoecd/16/18/49023036.pdf. This report examines the current economic, regulatory, and health care context in which biomarkers are being developed and identifies the barriers which may slow or block the uptake and diffusion of biomarker-based technologies in the clinical setting.

New work on biomarkers is being taken forward under work on enabling innovation in biomedicine and health technology. See "BIOMEDICINE AND HEALTH INNOVATION" section.

Recent Publication:

 OECD (2011), *Policy Issues for the Development and use of Biomarkers in Health*

Web site: www.oecd.org/sti/biotechnology

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COLLABORATIVE MECHANISMS FOR THE MANAGEMENT OF INTELLECTUAL PROPERTY (IP)

Increasingly, governments, the public sector and the private sector are interested in the factors and mechanisms that encourage collaboration amongst diverse interests in order to stimulate innovation, foster R&D and promote access and diffusion of technology and information in the life sciences.

Collaborative mechanisms, such as clearinghouses, auctions, IP pools, model agreements, etc. have been successful used in industries such as information technology. Some organisations have recently recommended that the public and private sectors consider the development and use of collaborative mechanisms for the life sciences and biotechnology. The organisations include the Australian Law Reform Commission, the Canadian Expert Working Party on Human Genetic Materials, Intellectual Property and the Health Sector (Canadian Biotechnology Advisory Committee), the United States National Academies of Science (US), and the OECD.

The OECD held an expert Workshop on Collaborative Mechanisms in Spring 2009. The workshop explored different models of collaborative mechanisms and their application within the life sciences. Experts discussed how collaborative mechanisms increase efficiencies for the transaction of intellectual property, foster R&D and promote commercialisation of products and services. The Workshop explored the role of government policy in achieving such objectives.

A publication capturing discussion at the workshop and a greater examination of the topic of collaborative mechanisms was released in September 2011, *Collaborative Mechanisms for Intellectual Property Management in the Life Sciences (2011)*, <http://www.oecd.org/dataoecd/33/22/48665248.pdf>, in conjunction with the Global Forum on the Knowledge Economy. In addition, a publication on issues associated with knowledge networks and markets in life sciences will be forthcoming in 2012.

Recent Publication:

📖 OECD (2011), *Collaborative Mechanisms for Intellectual Property Management in the Life Sciences*

Web site: www.oecd.org/sti/biotechnology

Contact: Robert Wells (STI/STP)



BIOMEDICINE AND HEALTH INNOVATION

Task Force on Biomedicine and Health Innovation

From November 2007 to December 2011, work on biomedicine and health innovation was guided by the Task Force on Biomedicine and Health Innovation (TFBHI) established under the auspices of the OECD Working Party on Biotechnology. One of the primary achievements of the task force was a stock take of the health-related biotechnology studies and policy recommendations produced over the past several years concerning an enabling environment for health innovation: an environment that is supportive of health innovation, facilitates access to innovations so that they best serve the public good, and includes a receptive end-market for innovations. In 2008, the Task Force on Biomedicine and Health Innovation developed a [Synthesis Report](#) of the main policy messages emerging from recent OECD work related to innovation and health.

The Task Force focused on five policy issues which have been at the core of the work of the Working Party on Biotechnology: (1) access to knowledge and intellectual property, (2) new business models and the fusion and exchange of knowledge, (3) the governance of new research infrastructures, (4) the demand and take up of health innovations in health systems, (5) the impacts of new technologies on policy.

Work in these areas is being taken forward in the projects described below:

Innovative Governance in Biomedicine and Health Innovation

In September 2010, the OECD held a workshop in Berlin, which sought to address one of the major policy gaps of biomedicine and health innovation: that of adapting regulatory frameworks or governance to an evolving global and increasingly complex science and technology landscape.

The resulting OECD-Berlin Workshop '*Better Health through Bio-medicine: Innovative Governance*' brought together policy makers, regulators, academic experts, private and public sector researchers and other interested parties from over 20 countries, including Enhanced Engagement countries such as South Africa and non-members such as Singapore, to discuss the latest developments in the biomedical sector, explore the challenges for governance of this sector and consider how to foster more effective

health innovation. A report based on discussions at the workshop as well as on further research will be published soon.

The OECD Working Party for Biotechnology is in the process of initiating new work under the theme of “*Enabling Innovation in Biomedicine and Health Technology*”, building on some of the areas related to innovative governance of biomedicine and health technology identified in the Berlin workshop. The workshop concluded that innovations in governance will require innovations in regulatory science. There is a need to develop the new tools of regulatory science by drawing on the latest advances in science and research, in particular new high-throughput ‘omics and related technology, to bring about innovation in governance.

The new work will focus on the use of biomarkers to enable innovations in governance to promote health innovation. This work is expected to include case studies of relevant initiatives and country programmes. Alzheimer’s disease, discussed below, which provides an excellent case study for studying the role of biomarkers in delivering new diagnostic tools and treatment options, may be used as a case study.

Genomics and Global Public Health

Advances in genomics and associated science and technologies like biomarkers can potentially seed development of new innovative products and services, and “got right,” they transform innovation in health and biomedicine. Genomics and its derivatives like biomarkers promise new ways of understanding disease and response to disease, enabling development and delivery of safer more effective treatments. Realising this potential will require not just technological and scientific advances but also advances of a non-technical nature related to the sharing of knowledge, the development of viable commercialisation pathways, sound governance and sound approaches to dealing with the associated social science issues.

The Global Forum on Biotechnology, held in 2010 and organised in partnership with the ESRC Genomics Network and HUGO-OECD Genomics, and the Bioeconomy Symposium in 2010, each provided a forum to discuss the depth and breadth of modern genomics and the policy challenges and opportunities associated with employing these tools to meet global challenges in environment, health and industry, and to achieving growth in a way consistent with the aspirations of society.

The aspiration that genomic science should deliver global public health is complex. What do we actually mean when we talk about ‘genomics for global public health’? What are the existing policies and actions which are associated with this issue? To what extent are they focused on public health, and to what extent on global health? And how do countries go about setting their priorities and delivering on them? What policies are in place to enable the translation of genomics, or genomics for public health benefit?

These questions form the basis for new work on global public health under the current PWB. The work is being taken forward with the ESRC Genomic Network (EGN) and the Human Genome Organisation (HUGO). It will include a series of country case studies and will result in a report which would help countries understand their current position on this issue and the position of other countries, creating the conditions for a dialogue and possible future actions on this important issue.

Alzheimer’s Disease

Alzheimer’s disease (AD), or dementia, represents a particular, and very significant, challenge to population health, national prosperity and productivity. The disease is notable in that it represents an unmet health need in the fullest sense: our understanding of the disease is incomplete, diagnostics are imperfect and do not allow for prevention of the disease, treatments are typically focussed on treating symptoms not disease aetiology, and there is no cure.

In the face of a health innovation system which is suffering from declining productivity, dementia may thus provide a useful lens through which to consider, and develop, further science and technology policy work. Approaching future work from the perspective of Alzheimer’s disease might provide an opportunity for a holistic approach to science and technology policy development, and might result in development of policy recommendations with significant positive economic impact. Such an approach may be positioned

to build upon recent WPB work in a number of areas: *Research, Translation of science and technology: Governance & Economic and Social Policies*.

Work on Alzheimer's disease is being led by the Working Party on Biotechnology (WPB) and an expert stakeholders group. A position paper on the challenge of Alzheimer's disease is being developed and will be completed in 2012. The paper will outline the 'grand challenge' that AD represents to global public health (including the important social and economic impact of the disease), include an 'inventory' or 'stock-taking' of current initiatives to tackle this challenge, and then look at some areas in which the OECD could make a positive contribution.

Recent Publications:

📖 OECD (2010), *Biomedicine and Health Innovation: Synthesis Report*

📖 OECD (2011), *Policy Issues For The Development And Use Of Biomarkers In Health*

Web site: www.oecd.org/sti/biotechnology

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INDUSTRIAL BIOTECHNOLOGY

Future Prospects for Industrial Biotechnology

The publication *Future Prospects for Industrial Biotechnology* resulted from a Workshop hosted and supported by the Austrian Federal Ministry for Economics, Family and Youth, held in Vienna on 13-15 January 2010. It is arranged in six chapters, covering drivers for industrial biotechnology, products, industry trends, business organisation and policy support (ISBN 978-92-64-11956-7, 140 pp). (http://www.oecd.org/document/11/0,3746,en_2649_201185_48802379_1_1_1_1,00.html). The product was launched at Bio Japan 2011 in Yokohama, 5-7 October 2011, and at the European Forum for Industrial Biotechnology 2011 in Amsterdam, 18-20 October 2011.

Biotechnology offers the possibility to transform industrial processes and to deliver both profitability and environmental benefits. A report entitled "*The Application of Biotechnology to Industrial Sustainability*" (OECD, 2001: <http://www.oecd.org/dataoecd/61/13/1947629.pdf>), prepared by the OECD Task Force on Industrial Biotechnology, has prompted action in several countries aimed at delivering a more resilient, sustainable and bio-based economy. The report focuses on how industrial biotechnology can contribute to green growth and tries to identify and appraise policy can drive an efficient transition towards a more sustainable bio-based economy.

Industrial Biotechnology for Green Growth

The Task Force developed a case study on "*Metrics to Support Informed Decision-Making for Consumers of Bio-based Products*" which was published in March 2009 (OECD, 2009: www.oecd.org/dataoecd/37/48/42400999.pdf). This case study is used as a basis for the development of best practices for assessing the sustainability of bio-based products.

To initiate the process, the Task Force held a workshop on the margins of the World Congress on Industrial Biotechnology and Bio-processing on 19-22 July 2009, in Montreal, Canada. The overall goal of the workshop was to define the way towards the development of Best Practices and Guidance in planning for and assessing the environmental sustainability of bio-based products and processes. A workshop

report with main conclusions and way forward has now been published: http://www.oecd.org/document/8/0,3343,en_2649_34537_43177288_1_1_1_1,00.html.

To launch the report and to define potential pathways towards the development of OECD Best Practices, the Task Force organised a Panel Discussion that was hosted by the US Biotechnology Industry Association (BIO) and held on June 29, 2010 in Washington, D.C., in conjunction with the 7th World Congress on Industrial Biotechnology and Bio-processing (http://oecd.org/document/4/0,3746,en_2649_34537_45700740_1_1_1_1,00.html).

Council Recommendation on Assessing the Sustainability of Bio-based Products

As a next step, on the demand of the Working Party on Biotechnology, the Task Force has developed a draft Council Recommendation on Assessing the Sustainability of Bio-based Products. The draft Recommendation went through the public consultation process during July and August. It was sent out to a total of 250 individuals/organisations. In total 118 comments were returned, and these were analysed, categorised and then changes were made. It was also reviewed by internal organisations. It was reviewed again by the Task Force and the Working Party in November, and more changes were made. The final Recommendation is planned to be published in the course of 2012.

Industrial Biotechnology and Climate Change

One of the greatest global challenges is the fight against climate change. Industrial Biotechnology has a high potential to help address the climate change related issues either through transforming existing manufacturing systems into more sustainable ones (e.g. reduction of the fossil energy use) or by applying radical innovations to production systems (the use of renewable raw materials as inputs for manufacturing industries).

The Task Force on Industrial Biotechnology developed an analytical report to explore in detail the potential of Industrial Biotechnology to mitigate climate change issues. The final report was published in late 2011 (<http://www.oecd.org/dataoecd/15/54/49024032.pdf>).

Future event:

- Task Force on Industrial Biotechnology, Meeting, OECD Paris, **6 June 2012**

Recent Publications:

- 📖 OECD (2009), *Metrics to Support Informed Decision-Making for Consumers of Biobased Products*
- 📖 OECD (2010), *Towards the Development of OECD Best Practices for Assessing the Sustainability of Bio-based Products*
- 📖 OECD (2011), *Industrial Biotechnology and Climate change*

Web site: www.oecd.org/sti/biotechnology

Contact: Jim Philp (STI/STP)



SYNTHETIC BIOLOGY



The OECD Working Party on Biotechnology started to work on synthetic biology related-issues in 2008. As a first step a symposium was organised to identify the main challenges and opportunities synthetic biology is raising. Under the auspices of the OECD, the US National Academies of Science and the Royal Society an international symposium entitled “*Opportunities and Challenges in the Emerging Field of Synthetic Biology*” was held in Washington, DC on 9-10 July 2009.

The symposium aimed to contribute to fostering the safe and efficient development of synthetic biology by identifying issues and areas for future study and informing policy-makers. A Synthesis Report capturing discussion at the Symposium was published in May 2010 (OECD-Royal Society joint publication, 2010: <http://www.oecd.org/dataoecd/23/49/45144066.pdf>).

Since that time, the OECD has launched a dialogue with experts and leaders in the field to identify some of the challenges to development of the field and areas in which the OECD can make a positive contribution. In June 2011, the OECD held an expert meeting in synthetic biology in collaboration with the BioBricks Foundation and the SynBio5.0 meeting at Stanford University. Based on that meeting, the OECD is taking forward work in the following areas three areas:

Infrastructure for Synthetic Biology

Work on infrastructure of synthetic biology will begin by looking at the role of synthetic biology in the bioeconomy, before turning to examine the necessary infrastructure and challenges to its development. This will be launched during the OECD/HUGO summit to be held in partnership with the Human Genome Organisation at its annual meeting in Sydney, Australia in March 2012 (*see dedicated section below*).

IP Access and Sharing

Work on intellectual property: access and sharing, will build on previous Working Party on Biotechnology work on "Knowledge Networks and Markets" and on "Collaborative Mechanisms" (*see relevant sections*) to look at the challenges to development of KNM in synthetic biology. This work is expected to provide insights which will benefit other fields arising from technology convergence. The OECD is currently exploring the optimum partnership through which to continue this work.

Governance

Emerging technology and converging technologies often represent challenges to the existing governance structures, and it is important to ensure existing structures do not represent a barrier to innovation. The field of synthetic biology involved converging technologies as it involves not just biology or DNA recombination, but other fields such as engineering, computational technology and nanotechnology. In many ways it also represents an emerging technology, one that and is now moving beyond modification of genetic material toward the design and construction of new biological functions, structures and systems not found in nature. This project will look at potential barriers to governance of innovations arising from the field of synthetic biology and may have application to other technologies.

Recent Publication:

📖 OECD, Royal Society (2010), *Symposium on Opportunities and Challenges in the Emerging Field of Synthetic Biology: Synthesis Report*

Web site: www.oecd.org/sti/biotechnology/synbio

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OECD/HUGO SUMMIT IN AUSTRALIA – March 2012

Starting in March 2010, the OECD has worked in partnership with the Human genome Organisation (HUGO) to develop a symposium series in conjunction with HUGO's annual worldwide meeting.

These symposia have been designed to follow on to the OECD Bioeconomy 2030 publication (2009) which looks at various aspects of how biotechnology will impact the next generation of global economic growth.

The next symposium will be held in March 2012 at HUGO's annual meeting which will take place in Sydney, Australia. The main subject for the symposium will be on issues surrounding the development of synthetic biology, in particular issues related to the necessary policy infrastructures required to advance this new field.

Future event:

- *“Delivering economic value from synthetic biology: Current challenges and opportunities – OECD-HUGO Summit”* – 12-14 March 2012, Sydney, Australia

Web site: www.oecd.org/sti/biotechnology

Contact: Jim Philp, Rachael Ritchie, Robert Wells (STI/STP)



MARINE BIOTECHNOLOGY

In December 2010, the OECD Working Party on Biotechnology initiated work on marine biotechnology. This work grew out of recognition of the potential for the field to make an important contribution to meeting global challenges and contributing to the bioeconomy, as the source of greener more sustainable and smarter economies.

Governments and private sector organisations around the world have begun to recognise the potential of marine biotechnology and are actively working to harness its potential. The application of biotechnology to marine resources has yielded some notable and wide ranging advances in the fields of medicine, cosmetics, nutraceuticals, food production, and environ-industrial applications. Marine biotechnology, it seems, has the potential to address key challenges such as food and energy security, population health, and to contribute to green growth and sustainable industries. At the same time, marine bioresources provide a number of important ecosystem services for the planet and its inhabitants which must be maintained.



In reviewing some of the different applications of marine biotechnology, three especially significant aspects of the potential of marine biotechnology are evident. First, marine biotechnology has considerable potential to address global challenges in population health, food and fuel security, green manufacturing and industry and environmental sustainability. Second, marine resources are largely untapped, certainly by comparison to terrestrial resources, and are thus a potentially important source of new materials, feedstock, bioactive compounds, and biological and biochemical systems and processes. Third, most applications of marine biotechnology are predicated on access to marine resources which are distributed within a vast and complex shared ecosystem.

These three observations highlight the opportunities of marine biotechnology and the major challenges facing development of marine biotechnology. Put simply, the overarching challenge to marine biotechnology concerns appropriation of marine resources distributed within a vast and complex ecosystem while protecting and preserving marine resources for future generations.

Future work will begin to address these issues, looking at the promise of marine biotechnology and then some of challenges to benefiting and protecting the productivity of the world's marine environment.

Work will include a Meeting of the Global Forum on Biotechnology: *Marine Biotechnology - Enabling Ocean Sustainability and Productivity*, in Vancouver in May 2012. An issues paper will be developed in advance of the Forum.

Future event:

- Global Forum on Biotechnology – "*Marine Biotechnology – Enabling Ocean Sustainability and Productivity*", **29-31 May 2012**, Vancouver, Canada

Web site: www.oecd.org/sti/biotechnology

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ENVIRONMENTAL BIOTECHNOLOGY

Policy Issues for Bioplastics

Following on from the Rimini workshop and the subsequent paper (below), it was decided to continue work by concentrating on bioplastics and bio-based plastics. To date, these account for a small proportion of the overall plastics market, but they are experiencing high growth rates. Bio-based polyethylene (PE) has entered the market, and soon so will bio-based polypropylene and polyvinylchloride. These events significantly shift the applications into large-scale, and bioplastics have accordingly moved up the political agenda. During 2012 this work will continue to identify the barriers and policy issues for bioplastics, and will result in a policy report at the end of the year.

The Working Party on Biotechnology (WPB) endorsed a project on eco-innovation and green growth through environmental biotechnology under its programme of work.

The work addresses which are the challenges to research and development for Environmental Biotechnology that might impede the delivery of innovative products and technologies to the market place. The project aims to provide recommendations on policies that will ensure the efficient delivery of advances in Environmental Biotechnology R&D. The lack of clear, practical and internationally agreed upon guidance on how to manage and evaluate the development of Environmental Biotechnology R&D, starting from the laboratory up to field application in the open environment, presents a major barrier that impedes further development of the field.

The OECD Working Party on Biotechnology is exploring those barriers and will be formulating guidance on how the barriers might be overcome. To start the process, a [Workshop on Biotechnology for Environment in Future: Science, Technology and Policy](#) was held on 14-18 September 2010 in Rimini, Italy. The workshop aimed at building consensus on the scope of main issues that Environmental Biotechnology R&D faces and on the ways to overcome those. The document will be published in 2012.

Based on the background documents submitted to the workshop (e.g. an issues paper; case studies) and on outcomes of the workshop discussions, the Working Party on Biotechnology has developed a policy report and recommendations to address the issues identified. This report will be published shortly.

Web site: www.oecd.org/sti/biotechnology

Contact: Jim Philp (STI/STP)



BIOTECHNOLOGY STATISTICS

The *OECD Key Biotech Indicators* (KBI) were updated in December 2011. The indicators are available at: www.oecd.org/sti/biotechnology/indicators

New! *Biotechnology in Twelve Indicators* includes some data highlights: www.oecd.org/dataoecd/38/33/49303992.pdf.

The KBI data were also used in the OECD (2011), *OECD Factbook 2011-2012: Economic, Environmental and Social Statistics* publication. This is the first time biotechnology statistics are included. www.oecd-ilibrary.org/factbook

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BIOENERGY

The subject of bioenergy touches various areas, in particular, scientific developments, environmental effects, energy balances and agricultural market economics. In that context, the OECD has launched an overarching research program. Led by the Trade and Agriculture Directorate it incorporates expertise from other directorates of the OECD as well as the International Energy Agency.

The OECD work on bioenergy focuses on a comprehensive compilation of data and information on the issue, the categorization of the variety of support policies and the quantitative analysis of bioenergy policy measures.

OECD published in 2008 an economic assessment of biofuel support policies (OECD, 2008a). It concluded that government support of biofuel production in OECD countries is costly, has a limited impact on reducing greenhouse gases and improving energy security, and has a significant impact on world crop prices. Indeed, in a context of policy driven mandates for the blending of biofuels in transportation fuels, first generation biofuels derived from agricultural food commodities have developed strongly over the past few years. OECD (2008a) finds that other forms of bioenergy, such as bioheat, biopower and biogas, could represent economically more viable and environmentally more efficient ways to reduce GHG.

OECD (2008b) presents the technology and costs associated with the production of bioheat, biopower as well as second generation biofuels. OECD (2010) focuses 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 annual OECD-FAO Agricultural Outlook report covers biofuel market and related policy developments. The 2011 report noted biofuel production has been the largest source of new demand for agricultural commodities in recent years, and has tied agricultural markets closer to the much larger energy sector which exhibits demand characteristics quite unlike those for food. Policies in place in the US and

in EU member states with mandated use of biofuels in transportation fuels are expected to continue as key drivers of the growth of ethanol and biodiesel markets during the projection period.

Biofuels produced from agricultural feedstock are envisaged as a first step towards the development of renewable energy sources for liquid transportation fuels. The future transition to second generation biofuels produced from lignocellulosic biomass, waste material or other non-food feedstocks depends on the advancement of R&D over the next few years and on investments that are currently being made, as well as on the continuation of biofuel policy packages that have set up ambitious mandates for the production of second-generation biofuels. The Outlook report remains very cautious on the medium-term potential of second generation biofuels, which is only expected to be realised towards the very end of the 10-year projection period.

The next report will be released the end of June 2012. The full 2011 Agricultural Outlook report is available at www.agri-outlook.org while the specific biofuel market situation and projection highlights as well as data and projected figures for ethanol, biodiesel and feedstocks used to produce biofuels can be consulted directly at the following address: http://www.agri-outlook.org/document/0/0,3746,en_36774715_36775671_47877696_1_1_1_1,00.html

Publications:

- 📖 OECD (2008a), *Biofuel Support Policies – An Economic Assessment*
[en français]: OCDE (2008a), *Politiques de soutien des biocarburants : une évaluation économique*
- 📖 OECD (2008b), *Developments in Bioenergy Production Across the World: Electricity, Heat and Second Generation Biofuels*
- 📖 OECD (2010), *Bioheat, Biopower and Biogas: Developments and Implications for Agriculture*
- 📖 OECD/FAO (2011), OECD-FAO Agricultural Outlook 2011-2020 – "[Biofuels](#)" chapter

Web site www.oecd.org/tad/bioenergy

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AGRICULTURAL INNOVATION SYSTEMS



The global food and agriculture system faces both opportunities and challenges if it is to ensure that everyone has access to sufficient, safe and nutritious food in the decades ahead. Innovation will be crucial to respond to market opportunities and global challenges such as assuring global food security and responding to climate change. When they met in March 2010, Agriculture Ministers asked the OECD Secretariat to "*explore ways in which public, private and public-private actions would improve innovation within the global food and agriculture system, with a view to increasing productivity growth, ensuring sustainable resource use, responding to demands from consumers and limiting waste*".

At the end of May 2011, the OECD Working Party on Agricultural Policies and Markets (APM) discussed a project proposal to analyse the performance of agricultural innovation systems, with the aim to identify best practices to foster innovations that are consistent with policy objectives.

As part of this project, the Trade and Agriculture Directorate of the OECD organised a Conference on Agricultural Knowledge Systems (AKS) on 15-17 June 2011 in Paris. The purpose was to explore how to foster the development and adoption of innovation at national and global level, in order to meet global food security and climate change challenges. The Conference brought together government officials, analysts

and representatives of higher education, research, development and extension services, agro-food industries and agricultural producers from OECD countries, a number of emerging economies and international organisations. Although the Conference was named AKS, it was clear that many countries and international organisations are moving towards a broader innovation system approach. They are aware that *status quo* is not an option and that creating an effective and responsive environment for innovation requires greater efforts. This is especially important in view of the long lead and lag times involved in many of the agricultural innovations, such as plant breeding. The potential role of biotechnologies in increasing productivity and facilitating adaptation to climate change was recognised by many participants. During the Conference, specific attention was dedicated to developments in AKS institutions, public and private partnerships, regulatory issues regarding intellectual property rights and authorisation of innovation, adoption of innovation and technology transfer, in particular in the developing country context.

This conference was organised in collaboration with the OECD Co-operative Research Project, and provided valuable information for the OECD project on agricultural innovation systems. The conference was also organised in the context of the 50th Anniversary celebrations of the Committee for Agriculture.

Publications:

- 📖 Alston, J. (2010), "The Benefits from Agricultural Research and Development, Innovation, and Productivity Growth", *OECD Food, Agriculture and Fisheries Working Paper No. 31*
- 📖 OECD (2011), *Fostering Productivity and Competitiveness in Agriculture*, OECD publishing
- 📖 OECD (2012), *Improving Agricultural Knowledge and Innovation Systems: OECD Conference Proceedings*, OECD publishing

Web site: www.oecd.org/agriculture/policies/innovation

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AGRICULTURAL SEED AND FOREST REPRODUCTIVE MATERIAL CERTIFICATION SCHEMES

The following three criteria namely; 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 local identification, regions or provinces, selection and breeding.

The **OECD Seed Schemes** were developed in the late 1950s to regulate international exchanges, as well as “counter season” multiplication of seed, particularly between the northern and southern hemispheres. They are implemented by 58 member and non-member countries across all continents. In essence, the Schemes attempt to harmonise certification with a view to facilitating international trade in agricultural seeds. 200 species, including all the basic staples and over 43 000 varieties appear on the latest *OECD List of Varieties Eligible for Certification*. Among the emerging issues are the role of government in the control and testing of seeds, the accreditation of authorised private field inspectors and laboratories, the impact of biotechnology and advanced breeding methods on seed certification, the certification of seed mixtures (herbage species, hybrid maize, swede rape), rules for hybrid cotton and hybrid grass seed, and the multiplication abroad issues. Under the broad mandate to assess the current and future needs of international certification, the “*Working Group on Varietal Purity and Varietal Identity*” established in 2006 have started to develop new definitions and procedures to be introduced into the Schemes.

The current **OECD Forest Seed and Plant Scheme** was introduced in June 2007. This Scheme encourages the production and use of forest reproductive material that have been collected, processed and marketed in a manner that ensures their trueness to name. It is currently implemented by 25 countries.

The Scheme adopted its Strategic Plan in 2010 in order to expand the programme with new activities. As a result, the Scheme's rules were recently completed by the new "Qualified" category (for seed orchards) increasing the number of recognised categories under the Scheme to three (besides the "Source identified" and "Selected" categories). Moreover, the Scheme's rules were recently completed by a reference paragraph on the importance of biodiversity conservation and were adapted to tropical forestry conditions.

Future events:

- Annual Meeting of National Designated Authorities / Agricultural Seed Schemes (9-13 July 2012, Helsinki-Finland)
- Annual Meeting of National Designated Authorities / Forest Seed and Plant Scheme (3-4 October 2012, OECD Paris)

Recent Publications:

- 📖 *List of Varieties Eligible for Seed Certification "2011" (édition bilingue) : Liste de l'OCDE des variétés admises à la certification "2011"*
- 📖 *OECD Seed Schemes "2011" (Rules and Regulations)*
[en français] : *Systèmes des semences de l'OCDE "2011" (Règles et Directives)*
- 📖 *Guidelines for Field Inspection and Control Plot Tests of agricultural crops "2010"*
- 📖 *Guidelines for Multiplication abroad "2010"*
- 📖 *OECD Forest Seed and Plant Scheme "2011" (Rules and Regulations)*
[en français]: *Système de l'OCDE pour les semences et plants forestiers "2011" (Règles et Directives)*

Web sites: www.oecd.org/tad/seed ; www.oecd.org/tad/forest

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**CO-OPERATIVE RESEARCH PROGRAMME: BIOLOGICAL RESOURCE MANAGEMENT
FOR SUSTAINABLE AGRICULTURAL SYSTEMS**

The OECD Co-operative Research Programme (CRP), which gathers 26 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.

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 an OECD Member to conduct research projects in another OECD 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. Three themes will be addressed by the Programme during its mandate period (2010-2014): 1) The Natural Resource Challenge; 2) Sustainability in practice; and 3) The Food Chain.

Conferences (Co-)Sponsored by the Programme in 2011:

The CRP sponsored a total of 10 conferences during the past year. Information on most of these events can be accessed through the CRP website: www.oecd.org/agriculture/crp

➤ *1st International Animal Health Surveillance Conference, Lyon, France, 17-20 May 2011*

Animal health surveillance aims to ensure transparency between countries in terms of disease status and to help disease control programs of individual countries. The conference key objective was to enhance interaction and communication between science experts working within animal health surveillance, policy and decision makers, as well as to discuss advances in approaches on the subject. Current topics examined at the conference included surveillance for highly pathogenic avian influenza, cattle tuberculosis, aquatic animal disease, West Nile virus, bovine brucellosis, scrapie in sheep. Insights into different approaches used for domestic, wildlife, and companion animal health surveillance were shared. Each topic area was followed by brief discussions that addressed technically orientated questions. Panel discussions focused on scientific capacity and the influence of specific situations on surveillance efforts. The value of risk assessments/risk analysis in trade was recognised, as well as elements of subjectivity that sometimes hinder innovation and free trade. Another area discussed was whether the surveillance data from countries should be peer-reviewed; however, accessibility to real data was recognised as a problem in this area.

Conclusions drawn from the conference included: 1) need for developing methods for the evaluation of animal health surveillance systems, and practical checking of the relevance of these methods; 2) data sharing and translation of research results into policy continue to be a priority; 3) technological developments should be accepted by policy makers, and integrated in standards to achieve full benefit from the research investments; 4) economic analysis of surveillance systems is critical to ensure their efficiency, and these analysis should be simplified and promoted. More information can be found on the Conference website: www.animalhealthsurveillance.org

➤ *Agricultural Knowledge Systems, Paris, France, 15-17 June 2011*

The aim of this conference is detailed in AGRICULTURAL INNOVATION SYSTEM section above. Whilst the conference demonstrated a wide diversity in approaches to Agriculture Knowledge Systems (AKS), most are moving from a linear system to more integrated innovation systems. Improving the AKS effectiveness and reinforcing national/global co-operation and the AKS institutional design were seen as important.

The key challenges faced in adapting AKS to future needs in food and agriculture were identified, in a context of rapidly-growing demand upon agriculture and agro-industry, supply constraints, bioenergy, slowdown in crop productivity growth, limited investments in R&D, etc.. Key issues of policy coherence were discussed: evolution of agricultural policies, food system and economic environment, reduction in support and shift toward public goods (e.g. environment) and other objectives (e.g. rural development). The discussions led to four policy questions relative to productivity enhancement *versus* other objectives, contradictory pressures for agriculture to perform a range of functions together with higher productivity, funding of AKS given other demands on public resources, and the management of international dimensions of productivity enhancement.

More information can be found on the conference website: www.oecd.org/agriculture/policies/innovation

➤ *Saskatoon International Workshop on Validation and Regulatory Analysis, Saskatoon, Canada, 19-22 June 2011*

The objective of the Workshop was to review new and emerging analytical methods used in regulatory laboratories to support national and international programs that ensure safe use of veterinary drugs and feed additives in food animal production. The subject areas were of direct policy relevance as they dealt with validated methodologies for determining veterinary drugs, pesticides, residues, and contaminants in food which are strictly regulated by many countries. The national regulatory schemes are usually based on risk management approaches supported by testing programmes that monitor residue levels in many food commodities: meat, milk, fish, honey, fruits and vegetables etc. Such methodologies, including multi-residue analysis approaches, are critically important for facilitating safe international trade of food commodities.

The need to invest more effort and wider participation of science and policy makers, to arrive at harmonised criteria and approaches, was recognised as essential. The Workshop provided a forum to discuss improved science-based methodologies for "doing more with less", discuss the evolving sound CODEX documents to improve clarity and applicability in current scientific environment (enabling elaboration of sound policies), the need for improved communication between all parties involved in food safety improvement.

More information can be found on the Workshop website: www.saskval.ca

➤ *Disease in Aquatic Crustaceans: problems and solutions for global food security, Halifax, Nova Scotia, Canada, 7-11 August 2011*

The symposium objective was to examine the important diseases of crustaceans and explore approaches to mitigate their impacts in order to enhance production and international trade in shrimp and other crustacean products. In the context of food security, aquaculture plays an important role in meeting the increased demand for protein sources. International trade in crustaceans has grown significantly in the last years and should continue to increase. Our ability to control diseases in farmed crustaceans and prevent their spread needs closer attention. The international trade is very dependent on such control measures so as to minimize the risk of introduction of new diseases into new territories.

The symposium outcomes recognised the need for the multi-dimensional approach to tackle the issues of aquatic crustacean diseases and trade aspects. Conversions of several outcomes are needed to promote global growth in this area, such as enhance ability to control diseases, more harmonised approaches for ascertaining risks, appropriate international legislation and sustainability funding to deal with emerging diseases. More information can be found on the Conference website: <http://www.smu.ca/sip/>

- *Pathways towards Policy Integration for Sustainable Agricultural Landscape Systems, Copenhagen, Denmark, 2-3 September 2011*

A key policy challenge in all agricultural systems is to integrate at the farm and landscape scale the consequences of different domains, types and levels of public policy, in particular those derived from the global market (incl. agricultural policies for productivity), and those from the sustainability agenda (incl. environmental policy and spatial planning). Local land managers (farmers and planners) need to reconcile these imperatives, as a prerequisite of successful policy implementation that local agents are understood as a policy target and addressed in policy design. The workshop investigated strategies and practices within three agricultural systems where natural resources (soil and water) and the environment (species and habitat diversity, micro climate, amenities etc.) are under particular pressure. These situations are relevant to policy arenas in agricultural intensification, peri-urban systems, urbanisation and their collective interface with global market pressures. This was investigated in different policy regimes in a range of OECD countries. Clear implications for OECD work are derived from the need to better integrate policy agendas for agricultural production with those for landscape sustainability. In addressing this, it will be essential to find mechanisms whereby landholders can be rewarded and recognised for dual benefits from their land. More information can be found on the workshop website: http://www.sl.life.ku.dk/English/outreach_publications/Conferences/Pathways.aspx

- *Bringing Together Science and Policy to Protect and Enhance Wetland Ecosystem Services in Agricultural Landscapes, Rotorua, New Zealand, 18 September 2011*

Wetland ecosystems operate at the cusp of hydrological and ecological functioning of agricultural landscapes. They provide a critical suite of environmental services (regulate and stabilize stream flow, purify surface waters, etc.). However agricultural development has degraded these ecosystems. The Symposium brought together science and policy to ensure that the wetlands services are properly recognized and appropriate efforts made to create, protect, and restore them as integral components of sustainable agricultural landscapes. Key messages for policy makers included: wetlands continue to be lost, with little monitoring at regional or national scales; policy responses lag behind rapid land-use changes; policies vary highly between nations and regions; legal protection is not enough alone – the education and engagement of farmers and private landowners is also essential; small wetlands not covered by international treaties need to be developed; boundary delineation and linkages between wetlands and their catchments are significant issues for regulators; ecosystem services need to be recognised in a policy setting; wetlands and agriculture should be in the same policy framework. More information can be found on the Symposium website: <http://www.dipcon2011.org/Wetlands%20Symposium.html>

- *Soil Science in a Changing World, Wageningen, Netherlands, 18-22 September 2011*

This conference addressed the importance of soil science for global issues, providing a platform for sharing soil knowledge worldwide and across scientific disciplines, engaging in interdisciplinary exchanges. In recent years several leading soil scientists have aired warnings about soil science research development and possible consequences regarding its role in food production, biodiversity loss, and availability of ample and clean water resources. The basic message is that “atomisation” in soil research leads to difficulties for overspecialised scientists to communicate the essential role the soil as a whole plays in these major global concerns. In addition to high-level and specialised research, the soil knowledge contribution in solving these pressing issues depends on good communication. The conference contributed to putting the soil /soil science/ back on track in helping to solve key current challenges. Governance and policy were also discussed because effective action depends greatly on scientifically based political and administrative interventions.

A major conference outcome was the launch of the ‘Global Soil Biodiversity Initiative’ which will serve as a platform of to translate scientific knowledge on soil biodiversity to policy makers into practical applications. This group wants to contribute to enhance water quality, food production, soil fertility, and to (bio)manage animal and human health issues. This initiative is open to all interested in sustaining soils and increasing awareness in life in soil as a key feature to sustaining our food production, ecosystem maintenance, control of global atmosphere and climate warming. More information can be found on website: www.globalsoilbiodiversity.org and on the conference website: <http://www.wageningensoilmeeting.wur.nl/UK/>

- *Frontiers in Agriculture Proteome Research: contribution of proteome technology in agricultural sciences, Tsukuba, Japan, 7-11 November 2011*

The conference aimed to put together expertise on plant proteomics and to highlight the importance of new technologies in the agricultural field. Although the outcome may not be relevant to short-term policy decisions, proteomics (as well as other high resolution techniques) have become widely used tools in plant biology research and agricultural research. Also, recent improvements in the resolution power and the sensitivity of the proteomic analysis would widen the possible applications of this methodology. Examples of plant proteomics use were presented in: signalling mechanisms and transduction; metabolic regulation; seed development; allergenicity; programmed cell death; temperature, drought and nutrient deprivation stress; resistance to pathogens and pathogenicity determinants; radiation exposure effects on plants. Discussions addressed also the limitations of the techniques.

One important use of proteomics was in assistance to breeding programmes for crops, and the effectiveness of such approach in on-going programmes will be of peculiar interest. The advances in proteomics applied to biological problems and their relationship to other powerful technologies such as genomics, transcriptomics, metabolomics etc are critical points in designing future applications of the technology. The current trend is to integrate information and data from different techniques, to try to understand an organism or a set of organisms as a whole (systems biology). Proteomics can also possibly be used as a method for identifying plant crops, varieties, etc. This “diagnostic”, although very limited presently, may have some applications in the fields of traceability, food quality and security. For some people, however, other techniques like DNA sequencing may have a competitive advantage. In conclusion, proteomics technology offers an expanding range of applications in biological studies that reaches its full potential when combined with other techniques, like genetic, biochemical, imaging etc. The proteomics field is still developing rapidly, and the conference dealt with their use in plant research at its highest possible level. More information can be found on the conference website: http://astp.jst.go.jp/modules/event_meeting/index.php?content_id=807

- *Medicinal Crops (Plants & Mushrooms): challenges and prospects for sustainable development in small-scale farming, Kifisia, Greece, 10-12 November 2011*

The objective of the conference was to address state of the art, problems and opportunities related to small-scale farming systems that provide medicinal crops and mushrooms as high value food/non-food products. It was intended to highlight the various scientific, technological, infrastructural and institutional constraints of the issue and to discuss ways to overcome them. Sustainability aspects of biodiversity and harvesting of wild species, especially legislative and policy guidelines regarding appropriate practices were considered as well as the need for their domestication and cultivation.

The conference was organised around 5 themes: Natural Resources, Ecology, Biodiversity, Crop Physiology & Management, Product Quality, Post harvest & Marketing, Biotechnological Uses & Pharmacological Aspects, Education & Policy Issues. The discussion centred around the role marketing and science in promoting the market situation of medicinal crops and mushrooms. Particularly, the role of environmental and management factors to enhance the contents of active ingredients in the crops are still not fully understood. Better targeted marketing strategies by the farmers are required to be competitive on the market. Networking of science, and particularly education and networking of farmers, is needed to advertise the role of these crops for nature conservation and agricultural diversification. More information can be found on the conference website: <http://imedcc11.aua.gr/>

- *Harmonisation of International Quality Assurance Standards for Trichinella Testing in Pork, Rome, Italy, 17-19 November 2011*

The workshop dealt with different aspects of quality assurance in Trichinella Inspection and Testing. The conclusions of the workshop will be published in a document to be made public in the ICT website.

Trichinellosis is an important and potentially-increasing health problem in developing areas, such as Asia, where meat consumption will grow enormously and testing and preventive measures are not implemented to a sufficient level. In this context, a set of recommendations on methods for the control of Trichinella in domestic and wild animals intended for human consumption is highly relevant. The discussions covered most aspects of Trichinella testing process: quality assurance by digestion protocol; certification of labs, and technicians; methods for proficiency testing of labs and technicians; sampling for proficiency testing; evaluation of proficiency results, minimum quality standard required; programmes for personnel training. The workshop prepared a working document specifying the minimum requirements that the procedures for Trichinella testing should have in order to assure the quality of the process. This document, to be finalised by participants, should be made public early 2012. The final version will constitute an important reference for correct implementation of testing procedures in different countries, and might serve as a starting point for the global harmonisation of the diagnostic techniques.

Fellowship research topics in 2011: see Biotechnology Update No. 22-July 2011, plus the following one:

- *Status and research need in toxicogenomic mixture toxicity analysis*

Summary reports submitted by the individual research fellows in 2011 are posted on the CRP website www.oecd.org/agriculture/crp as they become available.

The call for applications for conference sponsorship and research fellowship awards in 2012 resulted in 10 conference sponsorships and 32 fellowships:

2012 CRP sponsored conferences

- GRF One Health Summit 2012: One Health–One Planet–One Future: Risks & Opportunities, Davos, Switzerland, 19-23 February 2012
- OECD Conference on the Environmental Uses Of Micro-Organisms: an overview of the state-of-the-art and implications for biotechnology risk assessment, Paris, France, 26-27 March 2012 (*see dedicated section above*)
- Agro Environ 2012, Wageningen, Netherlands, 1-4 May 2012
- *Anoplophora chinensis* and *A. glabripennis*: new tools for predicting, detecting and fighting, Milan, Italy, 9-11 May 2012
- *Flavobacterium* 2012, Turku, Finland, 5-7 June 2012
- Plant and Microbe Adaptations to the Cold (PMAC) 2012: Toward risk assessment and management of sustainable agriculture in the cool and cold regions, Hokkaido, Japan, 24-28 June 2012
- New Horizon 17th International Nitrogen Workshop: Innovations for Sustainable Use of Nitrogen Resources, Wexford, Ireland, 26-29 June 2012
- Forest bioenergy and soil sustainability, Bari, Italy, during the Eurosoil Congress, 3-6 July 2012
- Advancing risk assessment models for invasive alien species in the food chain: contending with climate change, economics and uncertainty, Tromsø, Norway, 23-26 July 2012
- 58th International Congress of Meat Science and Technology: Animal welfare and microbiology and food safety sessions (ICoMST), Montreal, Canada, 12-17 August 2012

2012 CRP fellowships of potential interest

- Developing new remote sensing driven, vegetation carbon cycle models which utilise dynamic estimates of light use efficiency
- Exchange and use of genetic resources for food and agriculture
- Adapting crop models to rape seed cultivars for predicting N₂O emissions
- Compiling an environmental accounting to calculate sustainability indicators for bioenergy
- Genetic characterisation of environmental bacterial isolate able to degrade veterinary antibiotics
- Uncertainty quantification of pesticide migration for a sustainable agriculture
- Analysis of herbicide target genes in the common ragweed (*Ambrosia artemisiifolia*)
- Sustainability of using almond as source of resistance to peach diseases and effect in fruit quality traits genetics
- Grain yield controlling candidate gene on wheat chromosome 7A utilising third generation DNA sequencing and advanced bioinformatics
- The role of lignin in pest and disease resistance of wheat using genomic applications
- Next generation sequencing technologies for genome mapping of crop resistances to *Fusarium* root rots
- Proteome analysis on non-host resistance to plant viruses.

Note: The deadline for the submission of applications for 2013 research fellowship awards will be *5 September 2012* and for 2013 conference sponsorship, *15 September 2012*. All relevant information and application forms will be available on the CRP website, through the link: www.oecd.org/agriculture/crp.

Recent Publications:

- 📖 “*Journal of Consumer Protection and Food Safety*”; vol. 6, suppl 1 (May 2011); special issue: *Proceedings of the CRP-sponsored conference “Decision Making and Science–The Balancing of Risked Based Decisions that Influence Sustainability of Agricultural Production”, held on 8-9 October 2010 in Berlin, Germany*
- 📖 “*Developing Partnership for Sustainable Water Management and Agriculture in the context of Climate and Global change*”, published by FAAS–French American Agriculture Symposium *Water and Climate Change–proceedings of the CRP-sponsored symposium held on 11-12 May 2010, Purdue University, Indiana, United States*
- 📖 “*Issues and Solutions to Diffuse Pollution*”, CD produced by the 14th International Conference, IWA Diffuse Pollution Specialist Group; proceedings of the CRP-sponsored conference on “*Diffuse Pollution and Eutrophication*” held on 12-17 September 2010 in Beaupré, Quebec, Canada (CD).

Web site: www.oecd.org/agriculture/crp

Contacts: Carl-Christian Schmidt, Janet Schofield (TAD/PROG)



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 personalize their homepages at My OECD to present the news, events, and documentation related to their chosen themes. Visitors can also choose to receive automatically future editions of Biotechnology Update through My OECD.

- OECD's portal: www.oecd.org
- OECD work on green growth: www.oecd.org/greengrowth / www.oecd.org/croissanceverte
- OECD work on biosafety and food/feed safety for transgenic products, see BioTrack Online:
www.oecd.org/biotrack
- OECD work on biodiversity: www.oecd.org/env/biodiversity
- OECD's biotechnology portal: www.oecd.org/sti/biotechnology
- OECD work on synthetic biology: www.oecd.org/sti/biotechnology/synbio
- OECD work on bioenergy: www.oecd.org/tad/bioenergy
- OECD's work on agricultural innovation systems: www.oecd.org/agriculture/policies/innovation
- OECD seed certification schemes (agriculture, forest): www.oecd.org/tad/seed; www.oecd.org/tad/forest
- OECD's Cooperative Research Programme on Biological Resources in Agriculture: www.oecd.org/agriculture/crp



2012 EVENTS

- Inaugural Green Growth Knowledge Platform Conference. Mexico City, Mexico, **12-13 January 2012** (contact: N. Girouard, Green Growth)
- Under the Working Party on Biotechnology: “*An Introduction to Quality Assurance in Genetic Diagnostic Laboratories: An Interactive Workshop*” – **9-10 February 2012**, New Delhi, India, (contact: R. Ritchie, STI/STP)
- WPBWE Expert Workshop on Metrics and Indicators for Effective Biodiversity Policies, OECD Paris, **March 2012** (contact: K. Karousakis, ENV/CBD)
- Under the Working Party on Biotechnology: “*Delivering economic value from synthetic biology: Current challenges and opportunities – OECD-HUGO Summit*” – **12-14 March 2012**, Sydney, Australia, (contact: J. Philp, R. Ritchie or R. Wells, STI/STP)
- 19th Meeting of the Task Force for the Safety of Novel Foods & Feeds, OECD Paris, **22-23 March 2012** (contact: B. Dagallier, ENV/EHS)
- Conference on the "Environmental Uses of Micro-organisms: an overview of the state-of-the-art and implications for biotechnology risk/safety assessment", OECD Paris, **26-27 March 2012** (contact: K. Suwabe, ENV/EHS)
- Working Group for the Harmonisation of Regulatory Oversight in Biotechnology, 26th Meeting, OECD Paris, **28-30 March 2012** (contact: K. Suwabe, B. Dagallier, ENV/EHS)
- Global Forum on Biotechnology – “*Marine Biotechnology – Enabling Ocean Sustainability and Productivity*”, **29-31 May 2012**, Vancouver, Canada, (contact: R. Ritchie, STI/STP)
- 3rd Meeting of the Working Party on Biodiversity, Water and Ecosystems (WPBWE), OECD Paris, **30-31 May 2012**, with a back-to-back Biodiversity Expert Workshop **1 June 2012** (Contact: K. Karousakis, ENV/CBD)
- Task Force on Industrial Biotechnology, Meeting, OECD Paris, **6 June 2012** (contact: J. Philp, STI/STP)
- Working Party on Biotechnology, 30th Session, OECD Paris, **7-8 June 2012** (contact: S. Horsin, STI/STP)
- Working Party on Biotechnology, 30th Session, OECD Paris, **7-8 June 2012** (contact: S. Horsin, STI/STP)
- OECD Seed Schemes, Annual Meeting of National Authorities, Helsinki, Finland, **9-13 July 2012** (contact: I. Matuschke, TAD/COD)
- OECD Forest Seed and Plant Scheme, Annual Meeting of National Authorities, OECD Paris, **3-4 October 2012** (contact: C. Gaspar, TAD/COD)



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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 34 member countries³. 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 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.

³ OECD member countries are: Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Chile, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The European Commission also takes part in the work of the OECD.

In addition to the Council, there are around 200 specialised Committees and other bodies (including Working Parties, Working Groups, and Task Forces), which undertake the Organisation's programme of work. The governments of the Member countries nominate the participants to all these groups.

The list below shows the main OECD bodies that have activities related to biotechnology:

OECD COUNCIL

Green Growth Strategy

Innovation Strategy

Global Forum on Biotechnology

Committee for Agriculture (COAG)

- Working Party on Agricultural Policies and Markets (APM)
- Co-operative Research Programme
- Research Programme on Bioenergy (*Trade and Agriculture Directorate, in collaboration with the International Energy Agency*)
- Seed Certification Schemes (agriculture, forest)

Committee for Scientific and Technological Policy (CSTP)

- Working Party on Biotechnology
 - Task Force on Industrial Biotechnology
 - Task Force on Biomedicine and Health Innovation

Environment Policy Committee (EPOC)

- Working Group on Biodiversity, Water and Ecosystems (WPBWE)
(*former Working Group on Economic Aspects of Biodiversity*)
- Working Party on Climate, Investment and Development (WPCID)

Chemicals Committee and Working Party on Chemicals, Pesticides and Biotechnology (Joint Meeting)

- Working Group for the Harmonisation of Regulatory Oversight in Biotechnology
- Task Force for the Safety of Novel Foods and Feeds