ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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

No. 19, 30 April 2008

This newsletter provides up-to-date information on OECD activities related to biotechnology. 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. Members of 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.

This edition is now available on the Internet as a "live-link" version.

Table of Contents

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

OECD and its member countries have been addressing issues related to biotechnology since 1982.

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

Michael Oborne, the Director of OECD's Advisory Unit on Multidisciplinary Issues and the International Futures Programme, chairs the ICGB. Peter Kearns, the Head of OECD's Biosafety Programme, is the Executive Secretary.

***Contact**:* Peter Kearns

LAUNCH OF PUBLIC CONSULTATIONS FOR GUIDELINES FOR HUMAN BIOBANKS AND GENETIC RESEARCH DATABASES

The completion of the mapping of the human genome under the Human Genome Project has opened huge potential for research into the ways in which genes relate to human conditions, diseases, capacities, impairments and susceptibilities. Research involving the human genome and its resulting applications opens up new prospects for improving the health of individuals and of humankind as a whole. The success of such research is dependent on sharing knowledge comprised of data, biological samples and information derived from the analysis of those samples.

The ability to effectively use these vast amounts of knowledge will depend in part on the bringing together of different strands of information and data within resources such as human biobanks and genetic research databases (HBGRDs). Current uses of HBGRDs are already contributing significantly to our understanding of genetic and environmental factors that influence disease risk and treatment.

The OECD is developing Guidelines for addressing issues arising in the establishment, governance, management and use of Human Biobanks and Genetic Research Databases. The OECD is inviting public comments on the draft Guidelines in order to ensure that the final text is useful for those involved with biobanking, human genetic research databases and collections. **The deadline for submitting comments is 16th May 2008**.

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

Related Publication:

📖 *Creation and Governance of Human Genetic Research Databases,* Paris: OECD, 2006

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THE BIOECONOMY TO 2030: DESIGNING A POLICY AGENDA

The bioeconomy is the set of economic activities relating to the invention, development, production and use of biological products and processes. In the future, biotechnology is expected to improve health, the productivity of agriculture and industrial processes, and to enhance environmental sustainability. '*The Bioeconomy to 2030*' being undertaken by the International Futures Programme (IFP) of the OECD along with the support of other interested OECD directorates is analysing key long-term trends to help governments map strategies for the bioeconomy.

Some of the project's results do point to the development of an integrated bioeconomy. This is particularly the case where near market discoveries in one field are applied in other areas. An example is a knock-out gene technology developed for cancer treatment, which is now being used to improve yields in a variety of agricultural crops. Despite these convergences however, the agricultural, health, and industrial biotechnologies are following different trajectories shaped by application-specific regulatory, technical, and market drivers.

One of the policy challenges for the future is to break down some of the barriers that are preventing integration both within and across application fields. For example, the economic and environmental potential of industrial biorefineries, based on replacing petroleum with biomass feedstocks, will require significantly improved integration between agricultural and industrial biotechnology. New business models and innovative solutions to major logistical challenges will be a key factor in promoting integration.

In agriculture, the use of biotechnology, including both GM and other biotechnologies such as marker assisted selection (MAS), is a major success story even though many governments have been reluctant to support these applications. The share of all crops planted that use biotechnology has been rising rapidly over the past 10 years and this trend will likely continue into the future. If it does, well before 2030, all major food crop varieties will have been developed using some form of biotechnology and these crops could account for approximately half of global output of food, feed, and feedstock crops.

Biotechnology in the health sector, without major structural changes, appears poised to continue delivering incremental changes through to at least 2015, if not to 2030. This is based on the preliminary analysis of global clinical trials which indicate an average of 15 new biopharmaceuticals arriving on the market annually to 2015. While biopharmaceuticals have historically offered a significant therapeutic advantage over small molecule therapeutics, they will continue to account for a relatively small share (approximately 14%) of all new pharmaceuticals. Despite this, by 2030, biotechnological knowledge will be so pervasive, for example for the identification of drug targets, that all new therapies could be based in part on biotechnology.

There is some reason for expecting larger health impacts however, as the development of key elements of health biotechnologies that could lead to more effective and personalized medicines are moving in the right direction. The number of diagnostic tests, gene-drug interactions, and submissions of pharmacogenetic information to regulatory authorities are increasing while at the same time genome sequencing costs are decreasing. Even if as expected, these technology trajectories continue into the future, major challenges remain. These technologies need to be linked together into a system where information about an individual's genome and validated biomarkers can be translated into treatment. And even if this occurs, costs could be prohibitive. For example, long and expensive clinical trials may be necessary to validate biomarkers. This could also lead, since the benefits of personalized medicines are not likely to appear immediately, to two parallel health systems with their associated cost burdens.

Industrial applications of biotechnology are growing rapidly in several niche areas, such as enzymes. Conversely, a partial shift from petroleum feedstocks to biomass will depend on the economic competitiveness of industrial biotechnology compared to other solutions. While in some regions biofuels could play a substantial role, local supply and geographic conditions may lead to other technologies (*e.g.* solar and wind) being more environmentally benign sources of carbon neutral energy. Policy will need to be carefully designed to promote the most environmentally and economically efficient solutions.

These preliminary results are based on contributions from the Steering Group, fourteen external expert reports, in-house research, and other OECD departments including the Directorate for Employment, Labour and Social Affairs' Health Division, the Environment Directorate, the Directorate for Science, Technology and Industry's Biotechnology Division, and the Directorate for Trade and Agriculture. The Project Team is currently preparing a draft final report that will be discussed by the project's Steering Group in June 2008. The final report will be publicly available in early 2009.

For further details please consult the project website: http://www.oecd.org/futures/bioeconomy

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BIOFUELS

OECD has been undertaking workon biofuels as reported in the last edition of Biotechnology update.

More information will be made available in the next edition.

HARMONISATION OF REGULATORY OVERSIGHT IN BIOTECHNOLOGY

The main focus of OECD's *Working Group on Harmonisation of Regulatory Oversight in Biotechnology* (the Working Group) is on environmental risk/ safety assessment of transgenic (genetically modified) crops. The work aims to ensure that the information used in risk/ safety assessment, as well as the methods used to collect such information, is as similar as possible. This improves mutual understanding amongst countries, increases the efficiency of the risk /safety assessment process and avoids duplication of effort, while reducing barriers to trade.

The participants of the Working Group are mainly from those government ministries and agencies, which have responsibility for the environmental risk/ safety assessment of products of modern biotechnology. There are also a number of observer delegations and invited experts who participate in the work. They include: Argentina; Russian Federation; Slovenia; the Secretariat of the Convention on Biological Diversity (SCBD); and the Business and Industry Advisory Committee to OECD (BIAC). During the last couple of years, there has been increased participation of other non-member countries including Brazil, Cameroon, Chile, China, Estonia, India, Philippines, Slovenia and South Africa, under the auspices of OECD's Global Forum on the Knowledge-based Economy.

Major progress has been seen on the project of *Unique Identifier for Transgenic Micro-organisms*. This is a project to develop a unique identification system for transgenic micro-organisms (bacteria) that have gone through the regulatory process leading to commercial application for release into the environment. This builds on existing guidance for the unique identifier for transgenic plants

(http://appli1.oecd.org/olis/2002doc.nsf/linkto/env-jm-mono(2002)7-rev1). The Sub-working Group on Micro-organisms of the Working Group has made effort to develop a draft questionnaire for stakeholders to gather their views and input on the development of a unique identifier for transgenic bacteria. Once the developed questionnaire is adopted without objections, it will be distributed to chosen stakeholders to acquire useful inputs.

The publication of Consensus/ Guidance Documents continues to be a major output of the work of the Working Group. To date, 29 Consensus Documents including those for the biology of crops, trees and micro-organisms, and for selected traits that may be introduced into crop species, as well as the other variety of documents useful for risk/ safety assessment, have been published. All of them are available through the website (http://www.oecd.org/biotrack).

During the 20th meeting of the Working Group in October 2007, a potential new project on *Low Level Presence* (LLPs) of transgenic seeds in conventional bulk shipments was discussed, as a follow-up of a proposal made at the 19th meeting by BIAC. The Working Group decided to hold a special meeting to discuss the feasibility of the Working Group (WG) undertaking a project on LLPs. In the special meeting, 14-15 April 2008, agreement was not reached on the feasibility and potential approaches were refined for consideration by the Working Group.

Future events:

- 21st Meeting of the Working Group for the Harmonisation of Regulatory Oversight in Biotechnology, Paris, 25-27 June 2008.

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

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BIOTRACK ONLINE

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 available the outputs of their work, especially the Consensus/ Guidance Documents of both groups. It also includes information on various workshops and conferences organised by the OECD, and a database of transgenic products (mainly crops) which have been approved for commercial use in OECD member countries (Product Database).

The major activity related to BioTrack Online recently focused on is the progress on the development of the unique identification system for transgenic micro-organisms as mentioned above. Once the system is developed, it will be used for each product accommodated in the Product Database.

Other progress was made on co-operation between FAO and OECD on a web-based database for information on safety assessment of transgenic foods. This project was developed in response to a request from the Codex *ad hoc* Task Force on Food Derived from Biotechnology, which leads to interoperability between the *FAO Global Portal on Food Safety, Animal and Plant Health* and *OECD's Product Database.*

Web site: BioTrack Online
http://www.oecd.org/biotrack
Product Database and Unique Identifiers
http://www.oecd.org/biotrack/productdatabase

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SAFETY OF NOVEL FOODS AND FEEDS

The Task Force for the Safety of Novel Foods and Feeds (Task Force) was established in 1999 to address aspects of the safety assessment of foods and feeds derived from genetically engineered crops. The main focus of the work of the Task Force is to ensure that the types of information used in risk/ safety assessment, as well as the methods used to collect such information, are as similar as possible amongst countries.

Consensus Documents

The main output of the food and feeds programme is ***consensus documents*** on compositional considerations of specific food/feed crops. The Task Force consensus documents a compile common base of scientific information on the major components of specific crop plants, such as key nutrients, toxicants, anti-nutrients and allergens that may be useful in assessing the safety of specific crops with respect to human food and animal feed safety.

To date, 14 consensus documents have been published: i) on major crops: Low Erucic Acid Rapeseed (Canola); Soybean; Sugar Beet; Potatoes; Maize; Bread Wheat; Rice; Cotton; Barley; Alfalfa and other Temperate Forage Legumes; and Sunflower; ii) a consensus document on a mushroom (*Agaricus bisporus*), using the same structure as in the crop plant document; and ii) a document on "Considerations for the Safety Assessment of Animal Feedstuffs Derived from Genetically Modified Plants", which complements the other consensus documents. At the present time, three advanced documents are being discussed on Papaya, Cassava, and Sweet Potato; and two documents have started to be developed on Grain Sorghum (*Milo*) and on Sugarcane (*Saccharum* spp. hybrids).

The Task Force recently finalised a process for revising consensus documents already published in order to keep them updated with new information as it becomes available. As a consequence, the two earliest documents: Low Erucic Acid Rapeseed (Canola) and Soybean are currently being updated.

Detail information on the Task Force consensus documents can be found in the document *An Introduction to the Food/Feed Safety Consensus Documents of the Task Force*, which explains, amongst other things, i) why the Task Force decided to prepare consensus documents as part of its programme of work; ii) the purpose and use as a practical contribution to the risk/safety assessment of foods and feeds derived from transgenic organisms; and iii) the process by which consensus documents are drafted and brought to final publication.

Outreach and non member economies engagement

The Task Force continues to involve more actively the expertise and interests of non member economies. This broadens the expertise that is available to the Task Force, while addressing a wider range of food and feed products that are of global interest. As a consequence, Thailand and South Africa are leading the drafting of three consensus documents on compositional considerations for papaya, cassava, and sweet potato. These crops are of high importance for their respective countries, as well as many other OECD members countries and non-members economies.

The Task Force benefits from the participation of non-member economies and invited experts to its work such as Argentina, Brazil, China, Latvia, the Russian Federation, Slovenia, South Africa and Thailand. Non members' participation has been possible through the Global Forum on the Knowledge-based Economy (GFKE) under the auspices of OECD's Centre for Co-operation with non-members.

OECD work on the risk/safety assessment of modern biotechnology

Currently, the Task Force is carrying out jointly with the Working Group on Harmonisation of Regulatory Oversight in Biotechnology a project on ***Molecular Characterisation for Transgenic Plants***. The second draft of this document is being prepared and will be available in 2008.

Finally, the OECD work also complements other international activities such as those undertaken by the Codex *ad hoc* Task Force on Food Derived from Biotechnology. Recently, FAO and OECD agreed to make two different databases interoperable regarding the information related to food safety assessment. By this arrangement, the OECD Product Database is able to import information on food safety assessment from the FAO International Portal on Food Safety, Animal and Plant Health (IPFSAPH), while exporting information on products in return. This includes information such as unique identifiers, event names, common/scientific names of the host organism and the names of introduced genes. This project was developed in response to a request from the Codex ad hoc Task Force on Food Derived from Biotechnology.

Future event:

- 15th Meeting of the Task Force for the Safety of Novel Foods and Feeds, Paris, 10-12 February 2009.

Recent Publication:

📖 *Brochure on the OECD work on the risk/safety assessment of modern biotechnology*

Upcoming Publication:

📖 *Consensus Document on Compositional Considerations for New Varieties of Tomato (Lycopersicon esculentum): Key Food and Feed Nutrients, Anti-Nutrients and Toxicants*

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

Contact: Mar Gonzalez

OECD GUIDELINES AND BEST PRACTICES

Two Council Recommendations related to genetic inventions and genetic testing and one set of best practices on biological resource centers have recently been agreed at the OECD. While not legally binding, a "Recommendation" of the OECD Council indicates a strong political commitment on the part of all member countries to implement an instrument. The OECD is helping to promote dissemination of the instruments below and will also assess their implementation and impact in countries. These Guidelines and Best Practices are an important contribution to international soft-law and practice related for the life science and health communities.

- **Guidelines for the Licensing of Genetic Inventions**

Biotechnology and genetics research have been the subject of extensive investment by both the public and private sectors. The products and processes that emerge from such research is making a significant contribution to human health and to health care. In 2006, OECD member countries adopted *Guidelines for the Licensing of Genetic Inventions* which offer principles and best practices for the licensing of intellectual property rights that relate to genetic inventions used for the purpose of human health care.

Overall, the Guidelines seek to foster the objectives of stimulating genetic research and innovation while maintaining appropriate access to health products and services.

The Guidelines are available on the web (in English, French, Japanese and Italian).

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

Contact: Christina Sampogna

- **Guidelines on Quality Assurance in Molecular Genetic Testing**

These Guidelines focus on the provision of clinical genetic services, in particular on: quality assurance systems for the tests offered, result reporting requirements, proficiency testing of laboratories performing tests, and the education and training standards for laboratory personnel. The Guidelines concern molecular genetic testing offered in a clinical context for the *diagnosis* of a particular disease or condition and for *predictive* screening before any clinical signs of a disease or condition appear. They are also relevant to pharmacogenetic tests, which predict the response profile of an individual to a drug or course of therapy. However, they do not address testing carried out only for research purposes.

The Guidelines are available on the web (in English, French and Japanese, a Spanish version is forthcoming).

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

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- **OECD Best Practice Guidelines for Biological Resource Centres**

Biological Resource Centres (BRCs) are considered as key elements of the international scientific infrastructure and are necessary to successfully deliver the benefits of biotechnology in health, industry and other sectors. "OECD Best Practice Guidelines for BRCs", establishing a target for the quality management of BRCs, were agreed by OECD member countries and published in March 2007.

The Best Practices are available on the web (in English, French, Korean and a Chinese version is forthcoming).

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

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FORTHCOMING PUBLICATIONS IN BIOTECHNOLOGY AND HEALTH INNOVATION

Pharmacogenetics

- A Report on *Pharmacogenetics: Opportunities and Challenges for Health Innovation and Care* will be available in Summer 2008. The report reviews the impact to date of pharmacogenetics on research, pharmaceutical R&D and clinical care and discusses the challenges to further uptake and diffusion. It concludes that the widespread adoption of pharmacogenetics is not yet guaranteed and that governments have a role to play in creating an "enabling" environment.

Emerging Research Models for the Delivery of Health Innovation

- This Policy Report will be available in Summer 2008. It will explore the major elements (tools, practices, incentive structures) underpinning new models or approaches to organising health innovation in both the public and private sector, in order to improve the efficiency with which laboratory discoveries are translated into new medical treatments. It will also identify where governments may have a role in facilitating the transition to such new models. The Report is based on four case studies and an Expert Workshop held in Paris in November 2006.

Uptake and Diffusion of Health Related Biotechnology

- This Analytical Report will be available in Summer 2008. It identifies the range of incentives and barriers that are affecting the uptake and into the health care sector of health biotechnologies. The case studies were chosen to illustrate technologies that differ in their stage of development, the type of health products, and in terms of their convergence with other technologies. The case studies discussed are: monoclonal antibody therapeutics; molecular diagnostics and genetic testing, DNA micro-arrays; and the convergence of bio- and nano-technologies in devices and therapeutics.

Collaborative Mechanisms for the Management of Intellectual Property

- This analytical report will be published by Summer 2008. It identifies the diverse types of collaborative mechanisms and the manner in which they may be employed to facilitate access to and use of biotechnological innovations for purposes of research, commercialisation and the provision of products/services

Counterfeiting and Piracy of Pharmaceuticals

- This OECD report is in publication. Counterfeiting and piracy of pharmaceutical products is an opportunistic crime endangering the lives of patients and consumers around the world. This report examines the nature of counterfeiting and piracy activities from the health and safety, public security, business and intellectual property perspective. It provides a detailed review of the nature of counterfeiting activities (*e.g.,* active pharmaceutical ingredients, finished products, packaging); examines the magnitude of counterfeiting activities on a global and regional basis; analyses the impacts on patients/consumers, the private sector and governments; assesses the manner in which this activity is carried out; and examines the numerous measures important for combating counterfeiting (e.g., public communication/education, legislative and regulatory mechanisms, technology, enforcement, securing supply/distribution chain, international cooperation, etc).

High-Level Forum on Medicines for Neglected and Emerging Infectious Diseases

- This summary report will be available in the summer of 2008. The High-Level Forum (HLF) addressed how to overcome the dearth of new treatments and preventive technologies which are necessary to tackle the major infectious diseases of the developing world. The report will cover the HLF and preparatory workshop discussions, as well as include the recommendations identified in the Noordwijk Medicines Agenda for creating a coherent policy environment for innovation and improving the incentives companies face for investing in the development of medicines for neglected and emerging infectious diseases. The report will be published as part of the *Development Dimension* series.

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

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

COLLABORATIVE MECHANISMS FOR THE MANAGEMENT OF INTELLECTUAL PROPERTY (IP)

Collaborative mechanisms, such as clearinghouses, auctions, IP pools, model agreements, etc. have been successful used within other areas, such as information technology. 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.

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 has ongoing work on collaborative IP mechanisms, and will publish an analytical report in the Summer of 2008. As well, a workshop on the diverse models of collaborative mechanisms and their application within the life sciences, especially biotechnology, will be held in the Autumn 2008. The Workshop will explore the divers manners in which collaborative mechanisms may beneficially increase efficiencies for the transaction of intellectual property in order to stimulate innovation, foster R&D and promote commercialisation of products and services. Through the examination of different models and approaches, the Workshop will also explore the role of government policy and practices for achieving such objectives. Another aim of the Workshop will be to obtain data on the initiatives that are being undertaken in both in the public and private sector with respect to collaborative mechanisms.

Forthcoming Publication:

📖 *Collaborative Mechanisms for the Management of Intellectual Property,* Paris: OECD, 2008.

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

BIOMARKERS

The impact of biotechnologies on medical research is intensifying. Because of new highly performing technologies, we are better able to understand and explore disease and drug mechanisms, which in turn could lead to major changes in the approach of patient care. This evolution in medicine is closely associated with an increased interest in the discovery of biomarkers.

A biomarker is, according to the NIH, “a characteristic that is objectively measured and evaluated as an indicator of normal biological processes, pathogenic processes, or pharmacologic responses to a therapeutic intervention.” Many safe and effective biomarkers already exist, especially those which early on presented easily demonstrable scientific and clinical evidence. Now the research, industrial and medical communities are looking for diagnostics and treatments that will be based on much more complex molecular biomarkers. It will be increasingly difficult to establish a base of evidence tying these biomarkers to pathologies and to establish their clinical pertinence.

Biomarkers are of great importance because they will be the basis for the development of the tomorrow's medical tests and targeted therapies. They could prove a major driver in the emergence of molecular medicine. Yet despite enthusiasm for biomarkers and the large number and types of actors involved in developing them, biomarker identification, validation, regulation and use in drug discovery and medical tests development, are still in their early stages.

In 2008, the Secretariat and a steering group of country experts are developing a number of analytical papers that address some key policy issues in the development and uptake of biomarkers. These papers will touch on:

1. An introduction to the impact and policy implications of biomarkers
2. Challenges in the evaluation and validation of biomarkers for clinical use
3. Strategies for evidence creation and knowledge sharing around biomarker data
4. Biomarker business models

An expert workshop will be held on 6-7 October 2008 to discuss the analytical papers and their policy recommendations. A policy report based on the papers and the workshop discussion is planned for delivery before the end of 2008.

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KNOWLEDGE MARKETS IN THE LIFE SCIENCES

A workshop on the application of Knowledge Markets to health innovations will be held on 16-17 October, 2008 in Washington DC, United States. The Workshop will explore what knowledge markets are and how they might address inefficiencies in the innovation cycle, their current and potential future applications in the health sector, as well as the challenges and barriers to their widespread use.

Knowledge markets encompass a number of different mechanisms where buyers and sellers trade a variety of knowledge intensive goods and services. Knowledge markets can include infrastructures like networking, matching or brokering services; clearing houses; auctions; exchanges; and pools. These are mechanisms for better identifying, accessing, exploiting, and creating value from existing intellectual assets.

Increasingly, there is interest in applying the concept of knowledge markets to the life sciences. Enormous amounts of data, information and knowledge are created throughout the health innovation cycle, much of which remains privately held. In isolation, the information may not be of great value or the producer may not be fully able exploit it. But in combination with other information, it could arguably have greater value and strategic impact. Proprietary information that may have lost value for the owner over time might provide valuable insights to other companies that are pursuing different research tracks, helping them to avoid similar pitfalls (and thus from wasting resources) or redirecting them toward goals that were formerly unrealizable. Knowledge markets could also serve the needs of companies when meeting regulatory requirements — for example, by enabling them to avoid the costs of conducting repetitive clinical and

preclinical tests. The Workshop will explore what benefits knowledge markets could bring to drug development, health innovation and health outcomes. It will identify the types of data, knowledge and know-how that can create added value when traded and the mechanisms by which such exchanges could be realised. It will discuss the difficulties of developing knowledge markets in the life sciences, the existing pressures and initiatives that are driving their creation, as well as the facilitating role that public policy may have.

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OECD INNOVATION STRATEGY: BIOMEDICINE AND HEALTH INNOVATION

At the 2007 meeting of the OECD Council at Ministerial-level (MCM), Ministers endorsed a mandate for the OECD to develop an OECD Innovation Strategy. Innovation is increasingly acknowledged as the main driver of sustainable growth, productivity, and wealth creation. Thus governments have a strong stake in setting up conditions that encourage it. But the nature of innovation is changing – due to globalisation, the spread of ICTs, improved connectivity and networking, new competitors, new financing and business models, and changing human capital skills and needs -- such that the policies that have stood OECD countries in good stead in the past may not meet the opportunities and challenges of today and tomorrow.

The OECD Innovation Strategy aims to provide countries with a more comprehensive, coherent, and timely understanding of trends in innovation. It will develop the tools they need to promote, measure, and assess innovation and the underlying dynamics of change. The Strategy focuses on positioning government, businesses, and consumers to anticipate and participate in "what's next". This includes understanding why some firms, regions, and countries succeeded in harnessing the power of innovation while others have not. Finally, it will also explore how innovation might be better leveraged to address global challenges, including health.

The Working Party on Biotechnology sees the OECD Innovation Strategy as an excellent opportunity to synthesize the health-related biotechnology studies and policy recommendations produced over the past several years about how to create 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. Indeed, innovation in biotechnology and related health fields has been reacting to and shaping many of the forces identified above.

A new Task Force on Biomedicine and Health Innovation has been created whose first task is to develop a Synthesis Report: a simple, concise summary of the main policy messages to be communicated in the Innovation Strategy. The Task Force has identified five issues it will tackle: (*1*) access to knowledge and intellectual property, (*2*) new business models and the fusion and exchange of knowledge, (*3*) the governance of new infrastructures, (*4*) the demand and take up of health innovations, (*5*) the impacts of new technologies on policy. The Task Force met in February 2008 and will meet again in June 2008 to discuss what messages it would like to see included about the essential conditions for generating health-related innovations and to assess whether there are agreed policy recommendations for biotechnology and health innovation. Completion of the Synthesis Report is expected at the end of 2008.

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SYNTHETIC BIOLOGY

Today, scientists are going beyond sequencing and manipulating genes, they are building life from scratch. Synthetic biology refers to the design and construction of new biological parts, devices and systems which do not exist in the natural world and to the redesign of existing biological systems to perform specific tasks. Basically, synthetic biology breaks down biological processes (*e.g.* protein production from a gene) to build systems that perform a particular desired function (*e.g.* oscillators which can produce protein on demand).

Scientists predict that within 2-5 years it will be possible to synthesize any virus. In 5-10 years simple bacterial genomes will be routinely synthesized and the construction of designer genomes commonplace. These "designer genomes" will be inserted into empty bacterial cells thus giving birth to new living and self-replicating organisms. Other synthetic biologists hope to reconfigure the genetic pathways of existing organisms to perform new functions such as the manufacture high-value drugs or chemicals.

Synthetic biology is a powerful and transformative technique which merges biology and engineering. It opens up enormous scientific, commercial, and health opportunities. The promise of synthetic biology needs to be better understood, the variety of players involved identified, and their – potentially conflicting – research norms and business strategies explored.

Synthetic biology will undoubtedly also raise policy challenges for governments if the maximum benefits are to be realised. These include social, economic, and legal challenges, as well as biosecurity and safety concerns. Parallels to past experience with transformative technologies in the life sciences may be drawn (genetic engineering and bio-nano). The OECD is in an ideal position to forge a common understanding in the policy community of the issues to be aware of (research needs, community building, safety and security concerns, regulatory implications, market pathways, public understanding). Moreover, the OECD can launch an early dialogue on what reasonable and responsible conduct might entail in this field and thus assure that the economic and social benefits of this new technology are safely encouraged.

An expert meeting will be held on 22-26 October 2008 in Bellagio, Italy. This meeting will discuss and plan a joint conference of the OECD,, US National Academy of Sciences and the UK Royal Society expected to take place in Washington DC. United States, late 2008.

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BIOSECURITY

Because of the threat of bioterrorism there is a need for security measures in legitimate bioscience facilities that work with, store or transfer dangerous biological material to prevent such material from being lost or stolen and subsequently misused for malevolent ends.

In March 2007 the OECD Committee for Scientific and Technological Policy agreed "Best Practice Guidelines on Biosecurity for Biological Resource Centres" (BRCs). The Guidelines on Biosecurity contain a Framework on Risk Assessment to guide BRCs in classifying pathogens, for example, according to one of four biosecurity risk levels, and robust Risk Management measures that may be applied as a function of a particular pathogen's biosecurity risk level. The Guidelines are available on the OECD website.

An increasing number of culture collections worldwide are currently implementing the Biosecurity Guidelines. In France, for example, a standard authorisation form for the use of micro-organisms and toxins, as well as best practice regulations for authorised centres, drew upon the OECD Guidelines. There were also referenced by The European Commission in the development of harmonised minimum requirements on Biosecurity in Europe (for reference see, *Green Paper on Bio-preparedness, Brussels, COM (2007) 399 Final*).

Moreover, the "Bulletin of the Atomic Scientists" published an article recognising current and future role of OECD in addressing biosecurity issues (*http://www.thebulletin.org/web-edition/columnists/laura-h-kahn/in-pursuit-of-international-biosecurity-oversight*).

The project will consider (under the 2009-2010 Work programme) the development of biosecurity risk assessment methodologies, as well as the assessment of risks associated with emerging bio-sciences and technologies (*i.e.* synthetic biology).

Publication

- *OECD Best Practice Guidelines on Biosecurity for BRCs,* Paris: OECD, 2007.
  Free download: http://www.oecd.org/dataoecd/6/27/38778261.pdf

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BIOLOGICAL RESOURCE CENTRES

Towards a *Global Biological Resource Centre Network* (GBRCN)

A Workshop on *"The Global Biological Resource Centres Network – Networking the Networks"* was held on 13-14 December 2007, in Paris. The objective of the workshop was to develop recommendations and consensus on practical measures towards the establishment of an inclusive, virtual global network of BRCs (GBRCN), drawing on existing networking practice. Participants agreed on key elements for the establishment of a GBRCN as well as commonalities and differences in the issues raised by different domain-specific networks (*i.e.,* Microbial domain and Human-derived material BRCs). Participants also agreed on the necessity of demonstration projects to examine some practical issues in the establishment of a GBRCN. These demonstration projects will be conducted independently from the OECD. Participants also recommended that an assessment and gap analysis of current activities in human-derived material BRCs, as well as cost-benefit analysis for scale-up to a GBRCN be performed at the OECD.

The final report of the Workshop, which will include a summary of the findings of the Goslar meeting as well as appropriate policy recommendations on the establishment of a GBRCN, are under preparation and will be delivered by the end of 2008.

Publication

📖 *OECD Best Practice Guidelines for Biological Resource Centres,* Paris: OECD, 2007. Free download: http://www.oecd.org/dataoecd/7/13/38777417.pdf

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INDUSTRIAL BIOTECHNOLOGY

The ability of biotechnology to transform industrial processes and deliver profitability and environmental benefits go hand-in-hand. "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 towards delivering a more resilient, more sustainable and more bio-based economy. The OECD focuses on how industrial biotechnology can contribute to sustainable growth and development, and tries to identify and appraise policy options for supply and demand side interventions that can drive an efficient transition towards bio-based economy.

Issues in supply-side for delivering further innovation to industrial biotechnology: What are supply-side limitations for industrial biotechnology – including on capital supply, human resources and globalisation of R&D? A roundtable will be held at the 2008 World Congress on Industrial Biotechnology in April 2008 to present and discuss a series of *Analytical Reports* on the contribution of industrial biotechnology to the bioeconomy in 2008. The Task Force is also reviewing the utility of green and other sustainability indices for biobased products.

Eco-innovation through industrial and environmental biotechnology: In February 2008 the Task Force on Industrial Biotechnology received a new mandate and a new focus on eco-innovation and the opportunities for sustainable economic growth within the context of a developing bioeconomy. The new Task Force will advise on policy issues related to industrial biotechnology, including: science and technology; the provision of supportive environments for efficient delivery of innovation and access to such innovation; the policy responses to novel developments in science and technology, including convergence with other technologies; and the impact of such developments on policy, as well as the sustainability and eco-efficiency of industry. The Task Force on Industrial Biotechnology will develop methodologies for the evaluation of bio-based products and processes. It will also address issues related to R&D and the application of environmental biotechnology.

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BIOTECHNOLOGY STATISTICS IN OECD MEMBER COUNTRIES

The Ad Hoc Meeting on Biotechnology Statistics (MBS) will be held in Paris, May 15-16, 2008.

The OECD's Ad Hoc Meeting on Biotechnology Statistics (MBS) was originally established in 2000. The MBS reported to National Experts in Science and Technology Indicators (NESTI) and maintained close contacts with the Working Party on Biotechnology (WPB). The five-year mandate of the MBS was to propose definitions, standards and a conceptual framework for collecting internationally comparable data on biotechnology.

The work of the MBS led to the development of a *Framework for Biotechnology Statistics* [http://www.oecd.org/dataoecd/5/48/34935605.pdf] and has initiated the collection of internationally comparable statistics. Five Ad Hoc Meetings on Biotechnology Statistics were held under the auspices of NESTI, and the *Framework for Biotechnology Statistics* is based on the methodological work produced by these meetings (held from 2000 to 2004). The MBS successfully completed its mandate by developing a statistical definition of biotechnology, a framework for collecting internationally comparable data on biotechnology, and a model questionnaire.

The 2005 *Framework for Biotechnology Statistics* should be reviewed and broadened because of several methodological developments in biotechnology that have taken place since the last Ad Hoc Meeting on Biotechnology Statistics, in 2004.

In order to bring the *Framework* up-to-date, a series of topics/projects will be proposed to countries at the meeting

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CO-OPERATIVE RESEARCH PROGRAMME (CRP): BIOLOGICAL RESOURCE MANAGEMENT FOR SUSTAINABLE AGRICULTURAL SYSTEMS

The rationale of this OECD programme 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 Programme for the period 2005-2009 are thus 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 to help resolve conflicting views in Member countries; 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. In this respect it awards fellowships to scientists from an OECD Member country to conduct research projects in a foreign country (OECD Member) and supports financially workshops to address agro-food issues that are high on the science/policy agenda of OECD Member countries. 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:

1. The Natural Resource Challenge;
2. Sustainability in practice;
3. The Food Chain

In 2007 the Programme co-sponsored the following conferences:

- *OECD Workshop on Bioenergy Policy Analysis, Umea, Sweden 22-24 January 2007*

A report was made on this Workshop in the last Newsletter.

- *Forest Research Management in an Era of Globalisation, Arlington, Virginia, USA 18-19 April 2007*

The theme of this conference extended into three topics addressed in parallel sessions. “Setting the Agenda” included case studies and discussions of how the agenda for relevant research topics and projects is to be chosen; “Funding and Finance” covered what mechanisms would be appropriate to securing research funding; and “Ensuring Quality and Efficiency” covered what practices promoted high quality of research and adequate allocation of resources.

- *Modelling Global Land Use and Social Implications in the Sustainability Assessment of Biofuels, Copenhagen, Denmark 4-5 June 2007*

The focus of the workshop was to use Life Cycle Analysis (LCA) techniques to assess various aspects of biofuel production sustainability. One of the prominent points that emerged from the workshop was that the biofuel industry has already performed its own LCA in planning for the construction of processing facilities that will come on-line in the next five to ten years. As such, current LCA efforts would be best focused on biofuel production for 10 to 20 years into the future when second generation techniques (cellulosic conversion) could be important.

This workshop linked in with other OECD CRP sponsored workshops on biofuel-related topics, including the ones held in Gorizia, Italy in June 2006, Wilton Park, UK in November 2006, Umea, Sweden in January 2007.

- *International Workshop on Campylobacter, Helicobacter and Related Organisms (CHRO 2007), Rotterdam, Netherlands 2-5 September 2007*

Campylobacter and Helicobacter are recognised as important bacterial agents causing infections which have considerable social and economic impacts worldwide. In both the industrialised and developing world there is a need to implement more effective intervention strategies to control these pathogens and their increasing antimicrobal resistance. Disease control and prevention are where applied fundamental research objectives meet, and CHRO provided an ideal opportunity to bring these aspects together.

The major topics covered were: epidemiology, typing and resistance of CHROs; genomics, metabolism and physiology of CHROs; diagnostics of emerging CHROS; host specificity and population biology of CHROs; risk assessment and sources and control; immune responses and disease development.

Campylobacter and Helicobacter will, in the long term, be major concerns for our food chain starting from farm to the fork. For food safety and security reasons, their extensive study and diagnosis will be an integral part of food processing.

Frontiers in Transgenesis: A vision for new and safer sources of food, pharmaceuticals and energy, St. Louis Missouri 26-28 September 2007

An increasing number of organisms are being engineered with the goal of increasing scientific knowledge, developing food and safer environmental products, and producing renewable and/or sustainable sources of energy. The workshop explored the future of transgenesis with the goal of charting a course and shared vision for new and safer sources of food, pharmaceuticals and energy.

Main topics covered were: studies and applications in developmental biology; innate and acquired immunity; food versus renewable energy; the challenge for agricultural science and technology; novel materials in transgenic organisms; transgenic organisms for food and human health; impact of biosafety issues in transgenic products; systems biology; genomic sciences through transgenesis; new methods for transgenesis.

- *Improvement of Plant Performance for Sustainable Agricultural Development in Wetlands, Sendai, Japan 23 November 2007*

The workshop looked at the current situation of wetlands, crop production on physio-agronomical issues and crop improvement on genetic issues, with specific presentations on the agricultural use of different types of wetlands, learning from traditional agricultural systems; review of wheat improvement for waterlogging tolerance in Australia and India; morphological and physiological responses of rice seedling

to flash floods; the root-soil interface in wetlands; development of flooding tolerance adaptations in natural wetland plants and their determination of inter-specific differences in survival, performance and distribution; tolerance of soybean crops to soil waterlogging; submergence-1 genese regulate ethylene and gibberellic acid-mediated acclimation responses to submergence in lowland rice.

Conferences co-sponsored by the Programme for 2008 are:

- *Livestock Waste Treatment Systems of the Future, Florence, South Carolina, USA 1-4 April 2008*

- *Basic and Applied Aspects of Aquaculture Nutrition, Krakow, Poland 16-17 September 2008*
- *Managing Parasitic Weeds, Burio, Italy 22-26 September 2008*
- *Sustainability of Biofuels Production on the Landscape, Madrid, Spain 22-24 October 2008*
- *Tropical Fruits in Human Nutrition and Health, Brisbane, Australia 8-11 November 2008*
- *Sustainable Transition of Agriculture, Tokyo, Japan 10-12 December 2008*

Fellowship research topics in 2008 of particular interest are:

- Modelling the sustainability of long-term monitored forest ecosystems in North America and Europe: impacts of future atmospheric deposition and biomass harvesting scenarios.
- Combining hydrological modelling and earth observations for the management of water resources in irrigated areas.
- Modelling water balance and crop production of an irrigated permanent bed system for sustainable production.
- The development of a simulation system for national-scale forest soil carbon management.
- Regional and timely assessment of agro-ecosystem resources based on advanced geo-information technologies - designing innovative methodologies and an international collaborative network for the future.
- Sustainable forestry and poverty transitions in Costa Rica, Finland, Japan and Korea contrasting with six developing countries: Case studies and comparative analyses.
- A study of sustainable urban and peri-urban agricultural systems, France.
- Site-Specific Precision Agriculture.
- Assessing the technical and allocative efficiency of organic farmers: implications for developing international sustainability measures.
- Strategies, techniques and incentives to encourage adoption of production systems that emphasize long-term sustainable goals: A comparison of French and US approaches to enable sustainable farming systems.
- Environmental and economic feasibility of tree-based intercropping systems in temperate regions.
- An automated gene mapping procedure applied to aquaculture species.

Information on the Co-Operative Research Programme and application forms for conference sponsorship or Research Fellowship awards are available on the Programme website:
http://www.oecd.org/topic/0,2686,en_2649_33903_1_1_1_1_37401,00.html

Recent Publications

- *Soils and Waste Managements: a challenge to climate change, Gorizia, Italy 15-16 June 2006*
- *International Workshop on Domestication, super-domestication and gigantism: human manipulation of plant genomes for increasing crop yield, Tsukuba, Japan 2-4 October 2006*
- *Forestry: a sectoral response to climate change, Wilton Park, UK 21-23 November 2006*
- *Mycotoxins from the field to the table, Omaha, Nebraska, USA 28 November-1 December 2006*
- *The Role of Rumen biohydrogenation in the production of nutritionally enhanced ruminant derived foo**d**s by sustainable means, Madrid, Spain 30 September-1 October 2006*
- *Special issue of Reproduction: Special Section on Focus on Mammalian Embryogenomics; papers from the 2nd International Meeting on Mammalian Embryogenomics, Paris, France, October 2007*

Forthcoming publications linked to conferences held in 2007:

- 🕮 *Special Issue of Annals of Botany for the 9th Conference of International Society for Plant Anaerobiosis.*

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OECD'S SEED CERTIFICATION AND FOREST REPRODUCTIVE MATERIAL 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 55 member and non-member countries across all continents (in addition, India and Moldova have applied to join the Schemes in 2008). In essence, the Schemes attempt to harmonise certification with a view to facilitating international trade in agricultural seeds. Over194 species, including all the basic staples and 42 600 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 issue of seed lot size and homogeneity. A Strategic Plan is under final elaboration for implementation in 2009.

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.

A new **OECD Scheme for the Certification of Forest Reproductive Material** was introduced in June 2007. This new Scheme clarifies the terminology and improves the rules relating to the "Source-identified" and "Selected" categories (forest seed stands and sources). The Scheme is implemented by 22 countries. Three new countries, Burkina Faso, Serbia and Uganda have applied to join the Scheme. Discussions on the more "advanced" forest reproductive material continue for a possible future extension of the Scheme to cover them at the international level.

Future events:

- 5th Meeting of the WG on Varietal Identity and Varietal Purity (30 June 2008, Chicago, United States)
- Annual Meeting of National Designated Authorities/Agricultural Seed (1-2 July 2008, Chicago, US)
- Annual Meeting of National Designated Authorities/Forest Reproductive Material (15-16 September 2008, Bordeaux, France)

Publications:

- 🕮 *List of Varieties Eligible for Seed Certification 2007/2008*
- 🕮 *OECD Seed Schemes "2008" (Rules and Directives)*
- 🕮 *Guidelines for the Authorisation of some certification activities under the OECD Seed Schemes "2008"*
- 🕮 *OECD Forest Seed and Plant Scheme "2007"*

Web sites: http://www.oecd.org/agr/seed
http://www.oecd.org/agr/forest

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ECONOMIC INSTRUMENTS FOR BIODIVERSITY

The OECD Working Group on Economic Aspects of Biodiversity (WGEAB), a subsidiary body of the Environment Policy Committee (EPOC), has focussed for over the last ten years on incentive measures, valuation and market creation for the sustainable use and conservation of biological diversity. Reflecting the main outputs of the Group, OECD countries agreed in 2004 an "OECD Council Recommendation on the Use of Economic Instruments in Promoting the Conservation and Sustainable Use of Biodiversity" [C(2004)81].

In 2007-2008, the WGEAB is undertaking a review of the implementation by OECD's 30 member countries of the Council Recommendation on the use of economic instruments since its adoption in 2004 . While this review is still in process, initial findings suggest that most of the countries responding to the OECD questionnaire do have in place a national biodiversity strategy or framework, a number of which provide a comprehensive and over-arching framework across policy areas. All responding countries noted improvements to or strengthening of their biodiversity strategy or framework in recent years. Nearly all noted further progress in the last few years in the application of economic instruments within their biodiversity strategy or framework, although the use of market based instruments is often still limited to specific instruments and policy areas.

The most commonly noted economic instruments used in the responding countries were positive subsidies for biodiversity friendly behaviour, with the application of fees, charges and taxes fairly widely used as well. Less progress has been made however in reforming perverse incentives, with the exception of recent reforms of agricultural subsidies and some progress in reforming perverse subsidies in the fishing industry. Instruments that create markets for sustainable use of biodiversity resources were also relatively less developed in biodiversity management, for example tradable permits schemes, although there were some examples such as with fishing quotas and hunting permits.

In terms of application of biodiversity related incentive measures to specific sectors and ecosystems, the survey indicated that the areas covered most comprehensively by such measures in responding countries were inland waters, agriculture and forest biodiversity, while the use of such instruments was more partial or limited in mountain areas and species management. Another finding was that a specific type of economic instrument was often dominant in the management of specific ecosystems or sectors. Thus, in agriculture and forests, the most commonly used type of instrument was positive subsidies, or payments for activities which encourage sustainable use or conservation of biodiversity. Taxes, fees and charges were most commonly used to preserve inland water ecosystems, primarily targeted to three areas: water use, wastewater charges, and the abstraction of materials.

The draft report was reviewed by WGEAB on 25th March 2008, and will be revised to incorporate comments and suggestions raised at this meeting. The revised version will go to EPOC, and then will be reported to the OECD Council.

Future events:

- 23rd Meeting of the Working Group on the Economic Aspects of Biodiversity, Paris, 13-14 November 2008.

Upcoming Publication:

🕮 *People and Biodiversity Policies: Impacts, Issues and Strategies for Policy Action*

Contact: Kyung Yong Lee

OECD BIOTECHNOLOGY AND THE WORLD WIDE WEB

OECD's web site includes much information on biotechnology, biosecurity, biosafety 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 is: http://www.oecd.org
- OECD's biotechnology portal: http://www.oecd.org/biotechnology
- For more information on industrial, scientific and health applications of biotechnology, and Biosecurity, see: http://www.oecd.org/sti/biotechnology under the theme "Biotechnology Policies."
- The BioTrack information system (which covers biosafety) is found at: http://www.oecd.org/biotrack/
- For information on Biosecurity codes of conduct, see: www.biosecuritycodes.org

🕮 *Hard copies of many OECD publications can be obtained free-of-charge from the ICGB Secretariat.*

FUTURE EVENTS

- OECD Roundtable on Supply-side issues of Industrial Biotechnology and the 16th Meeting of the Task Force on Industrial Biotechnology, 30 April 2008, Chicago, USA.
- Ad hoc meeting on Biotechnology Statistics, 15-16 May 2008, Paris, France (Contact: Brigitte van Beuzekom)
- Steering Group on Knowledge Markets, 9 June 2008, Paris, France (Contact: Bénédicte Callan)
- Steering Group on Collaborative Mechanisms, 10 June 2008, Paris, France (Contact: Christina Sampogna)
- 2nd Task Force meeting on Biomedicine and Health Innovation, 11 June 2008 (Contact: Bénédicte Callan)
- 21st Meeting of the Working Group on Harmonization of Regulatory Oversight in Biotechnology, 25-27 June 2008, Paris, France.
- Expert meeting on Human Genetics Research Databases, 22-24 July 2008, Paris, France (Contact: Christina Sampogna)
- Task Force on Industrial Biotechnology – Roundtable on Supply-side issues of Industrial Biotechnology, Brussels, 15 September 2008 (Contact: Alexandre Bartsev)

- Expert Workshop on Biomarkers, 6-7 October 2008 (Contact: Marie-Ange Baucher)
- Informal consultation on unconfined use of Environmental Biotechnology R&D, October 2008 (Contact: Iain Gillespie)
- Workshop on Collaborative Mechanisms, Autumn 2008 (Contact: Christina Sampogna)
- Workshop on Knowledge Markets in the Life Sciences, Washington DC, 16-17 October 2008 (Contact: Bénédicte Callan)
- Expert meeting on Synthetic Biology, Bellagio, Italy, 22-26 October 2008 (Contact: Marie-Ange Baucher)
- 23rd Meeting of the Working Group on the Economic Aspects of Biodiversity, Paris, 13-14 November 2008 (Contact: Kyung Yong Lee)
- 17th meeting of the Task Force on Industrial Biotechnology, 17-18 November 2008, Paris, France
  (Contact: Alexandre Bartsev)
- 24th Session of the Working Party on Biotechnology, 19-21 November 2008, Paris, France (Contact: Stella Horsin)
- 15th Meeting of the Task Force for the Safety of Novel Foods and Feeds, 10-12 February, Paris, France (Contact: Mar Gonzalez)

WHO'S WHO IN BIOTECH AT OECD

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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 30 member countries[1]. Its principal aim is to promote policies for sustainable economic growth and employment, a rising standard of living, and trade liberalisation. By sustainable economic growth the OECD means growth that balances economic, social and environmental considerations.

The OECD is an institution that enables its member countries to discuss and develop both domestic and international policies. It analyses issues, recommends actions, and provides a forum in which countries can compare their experiences, seek answers to common problems, and work to co-ordinate policies. An increasing number of non-member 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. Amongst other things, the Council decides on the annual budget of Organisation as well as the content of the programme of work.

In addition to the Council, there are 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

Committee for Agriculture (COAG)

- Seeds Scheme
- Co-operative Research Programme

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 Economic Aspects of Biodiversity

Joint Meeting of the Chemicals Committee and the 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

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