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Decizie de indexare a faptei de plagiat la poziţia 00442 / 06.01.2020 şi pentru admitere la publicare în volum tipărit

care se bazează pe:

A. Nota de constatare şi confirmare a indiciilor de plagiat prin fişa suspiciunii inclusă în decizie.

Fişa suspiciunii de plagiat / Sheet of plagiarism's suspicion		
Opera suspicionată (OS)		Opera autentică (OA)
Suspicious work		Authentic work
OS	MATEESCU Iris Maria, POPESCU Stefan, PĂUN Laura, ROATĂ George, BĂNCILĂ Andrei, OANCEA Anca. Bioeconomy. What is bioeconomy? How will bioeconomy develop the next two decades?. *Studia Universitatis "Vasile Goldiş". Seria Ştiinţele Vieţii*. 2011 Jun 15; **21**(2). pp.451-456.	
OA	ARUNDEL A, SAWAYA D. The bioeconomy to 2030: Designing a policy agenda. OECD Publishing. 2009. ISBN-978-92-64-03853-0.	
Incidența minimă a suspiciunii / Minimum incidence of suspicion		
P.01	p.452	p.00
P.02	p.452	p.19
P.03	p.453	p.31
P.04	p.453	p.51
P.05	p.452	p.195
P.06.	p.455	p.235
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Fişa întocmită pentru includerea suspiciunii în Indexul Operelor Plagiate în România de la Sheet drawn up for including the suspicion in the Index of Plagiarized Works in Romania at www.plagiate.ro		

Notă: Prin „p.72:00" se înțelege paragraful care se termină la finele pag.72. Notația „p.00:00" semnifică până la ultima pagină a capitolului curent, în întregime de la punctul inițial al preluării.

Note: By „p.72:00" one understands the text ending with the end of the page 72. By „p.00:00" one understands the taking over from the initial point till the last page of the current chapter, entirely.

B. Fişa de argumentare a calificării de plagiat alăturată, fişă care la rândul său este parte a deciziei.

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Fişa de argumentare a calificării

Nr. crt.	Descrierea situației care este încadrată drept plagiat	Se confirmă
1.	Preluarea identică a unor fragmente (piese de creație de tip text) dintr-o operă autentică publicată, fără precizarea întinderii şi menționarea provenienței şi însuşirea acestora într-o lucrare ulterioară celei autentice.	✓
2.	Preluarea unor fragmente (piese de creație de tip text) dintr-o operă autentică publicată, care sunt rezumate ale unor opere anterioare operei autentice, fără precizarea întinderii şi menționarea provenienței şi însuşirea acestora într-o lucrare ulterioară celei autentice.	
3.	Preluarea identică a unor figuri (piese de creație de tip grafic) dintr-o operă autentică publicată, fără menționarea provenienței şi însuşirea acestora într-o lucrare ulterioară celei autentice.	
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5.	Republicarea unei opere anterioare publicate, prin includerea unui nou autor sau de noi autori fără contribuție explicită în lista de autori	
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7.	Preluarea identică de pasaje (piese de creație) dintr-o operă autentică publicată, fără precizarea întinderii şi menționarea provenienței, fără nici o intervenție personală care să justifice exemplificarea sau critica prin aportul creator al autorului care preia şi însuşirea acestora într-o lucrare ulterioară celei autentice.	✓
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11.	Preluarea identică a textului (piese de creație de tip text) unei lucrări publicate anterior sau simultan, cu acelaşi titlu sau cu titlu similar, de un acelaşi autor / un acelaşi grup de autori în publicații sau edituri diferite.	
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Alte argumente particulare: a) Preluările de poze nu indică sursa, locul unde se află, autorul real sau posibil.

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a) Prin „proveniență" se înțelege informația din care se pot identifica cel puțin numele autorului / autorilor, titlul operei, anul apariției.

b) Plagiatul este definit prin textul legii[1].

> *„ …plagiatul – expunerea într-o operă scrisă sau o comunicare orală, inclusiv în format electronic, a unor texte, idei, demonstrații, date, ipoteze, teorii, rezultate ori metode ştiințifice extrase din opere scrise, inclusiv în format electronic, ale altor autori, fără a menționa acest lucru şi fără a face trimitere la operele originale…".*

Tehnic, plagiatul are la bază conceptul de **piesă de creație** care[2]:

> *„…este un element de comunicare prezentat în formă scrisă, ca text, imagine sau combinat, care posedă un subiect, o organizare sau o construcție logică şi de argumentare care presupune nişte premise, un raționament şi o concluzie. Piesa de creație presupune în mod necesar o formă de exprimare specifică unei persoane. Piesa de creație se poate asocia cu întreaga operă autentică sau cu o parte a acesteia…"*

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> *i) Cele două opere tratează acelaşi subiect sau subiecte înrudite.*
> *ii) Opera autentică a fost făcută publică anterior operei suspicionate.*
> *iii) Cele două opere conțin piese de creație identificabile comune care posedă, fiecare în parte, un subiect şi o formă de prezentare bine definită.*
> *iv) Pentru piesele de creație comune, adică prezente în opera autentică şi în opera suspicionată, nu există o menționare explicită a provenienței. Menționarea provenienței se face printr-o citare care permite identificarea piesei de creație preluate din opera autentică.*
> *v) Simpla menționare a titlului unei opere autentice într-un capitol de bibliografie sau similar acestuia fără delimitarea întinderii preluării nu este de natură să evite punerea în discuție a suspiciunii de plagiat.*
> *vi) Piesele de creație preluate din opera autentică se utilizează la construcții realizate prin juxtapunere fără ca acestea să fie tratate de autorul operei suspicionate prin poziția sa explicită.*
> *vii) In opera suspicionată se identifică un fir sau mai multe fire logice de argumentare şi tratare care leagă aceleaşi premise cu aceleaşi concluzii ca în opera autentică…"*

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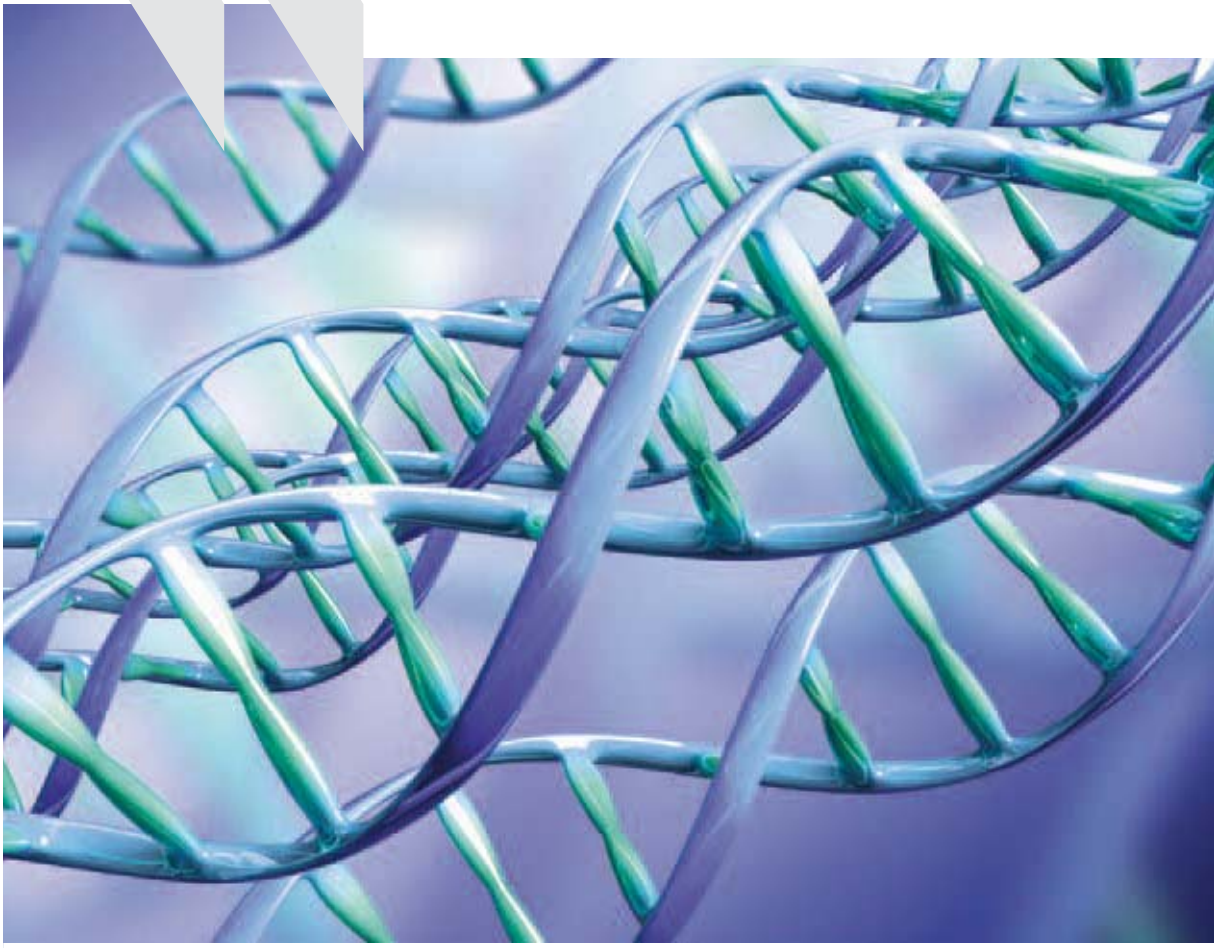
[1] Legea nr. 206/2004 privind buna conduită în cercetarea ştiințifică, dezvoltarea tehnologică şi inovare, publicată în Monitorul Oficial al României, Partea I, nr. 505 din 4 iunie 2004

[2] ISOC, D. *Ghid de acțiune împotriva plagiatului: bună-conduită, prevenire, combatere*. Cluj-Napoca: Ecou Transilvan, 2012.

[3] ISOC, D. *Prevenitor de plagiat*. Cluj-Napoca: Ecou Transilvan, 2014.

The Bioeconomy to 2030

DESIGNING A POLICY AGENDA



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The Bioeconomy to 2030

DESIGNING A POLICY AGENDA

Foreword

The concept of a "bioeconomy" invites the reader to think about the global challenges of the future and how the biological sciences may contribute to solving these complex problems.

There is a growing strategic interest in the concept of the bioeconomy in the OECD and non-OECD countries, not least because it addresses the potential for significant global economic, social and environmental benefits in an integrated framework. But for the bioeconomy to succeed, considerable uncertainties facing both public and private actors in our economies will need to be addressed.

A large part of the task of addressing global challenges will involve the biological sciences, from the contributions of industrial biotechnology through environmental applications to climate change issues, improved health outcomes, and feeding global populations with better yielding crops and better delivery of nutrients and vitamins in foods. Changing population demographics will mean more creative healthcare solutions for every generation of citizens. With the evolving consumer appetite for individualised medical care and medicines, biotechnology can make significant contributions to economic productivity and wellbeing in the health sector. Agricultural biotechnology can contribute to a more sustainable and productive agriculture sector.

In short, the bioeconomy holds at least some of the cards to ensure long term economic and environmental sustainability. But that potential will not become reality without attentive and active support from governments and the public at large. Innovative policy frameworks are needed to move forward to meet these global challenges, and these need strategic thinking by governments and citizen support.

The present report is the outcome of an interdisciplinary, strategic foresight project on the Bioeconomy to 2030. It provides a broad-based, forward-looking, policy-oriented review of future developments in the three sectors examined: primary production, health and industry. It also explores the implications of developments in these sectors for the economy and society in the 21st century.

Chapter 1

Defining the Bioeconomy

P.02

Both OECD and developing countries face a range of environmental, social, and economic challenges over the next two decades. Rising incomes, particularly in developing countries, will increase demand for healthcare and for agricultural, forestry, and fishing products. At the same time, many of the world's ecosystems that support human societies are overexploited and unsustainable. Climate change could exacerbate these environmental problems by adversely affecting water supplies and increasing the frequency of drought.

Biotechnology offers technological solutions for many of the health and resource-based problems facing the world. The application of biotechnology to primary production, health and industry could result in an emerging "bioeconomy" where biotechnology contributes to a significant share of economic output. The bioeconomy in 2030 is likely to involve three elements: advanced knowledge of genes and complex cell processes, renewable biomass, and the integration of biotechnology applications across sectors. This book evaluates existing evidence and the characteristics of biotechnology innovation in order to estimate what the bioeconomy of 2030 might look like. It also develops a policy agenda to help guide the use of biotechnology to address current and future challenges.

P.03

Chapter 2

What External Factors Will Drive the Bioeconomy to 2030?

Several factors will drive the emerging bioeconomy by creating opportunities for investment. A major factor is increasing population and per capita income, particularly in developing countries. The global population is expected to reach 8.3 billion in 2030, with 97% of the growth occurring in developing countries. GDP is expected to grow by 4.6% per year in developing countries and by 2.3% in OECD countries. These trends in population and income, combined with rapid increases in educational achievement in China and India, indicate not only that the bioeconomy will be global, but that the main markets for biotechnology in primary production (agriculture, forestry and fishing) and industry could be in developing countries. Increases in energy demand, especially if combined with measures to reduce greenhouse gases, could create large markets for biofuels.

An expected increase in elderly populations, both in China and in OECD countries, will increase the need for therapies to treat chronic and neurodegenerative diseases, some of which will be based on biotechnology. Many countries and healthcare providers will try to reverse rapidly increasing healthcare costs. Biotechnology provides possible solutions to reduce the cost of pharmaceutical R&D and manufacturing. Alternatively, biotechnology could improve the cost-effectiveness of health therapy, so that expensive treatments provide commensurate and significant improvements to health and the quality of life.

P.04

Chapter 3

The State of the Bioeconomy Today

Biotechnology today is used in primary production, health and industry. Platform technologies such as genetic modification, DNA sequencing, bioinformatics and metabolic pathway engineering have commercial uses in several application fields. The main current uses of biotechnology in primary production are for plant and animal breeding and diagnostics, with a few applications in veterinary medicine. Human health applications include therapeutics, diagnostics, pharmacogenetics to improve prescribing practices, functional foods and nutraceuticals, and some medical devices. Industrial applications include the use of biotechnological processes to produce chemicals, plastics, and enzymes, environmental applications such as bioremediation and biosensors, methods to reduce the environmental effects or costs of resource extraction, and the production of biofuels. Several applications, such as biopharmaceuticals, in vitro *diagnostics, some types of genetically modified crops, and enzymes are comparatively "mature" technologies. Many other applications have limited commercial viability without government support (*e.g. *biofuels and biomining) or are still in the experimental stage, such as regenerative medicine and health therapies based on RNA interference.*

Chapter 6

The Business of the Emerging Bioeconomy

P.09

Social, economic and technological factors will create new business opportunities for biotechnology, requiring new types of business models. The main business models to date have been the small, dedicated biotechnology firm (DBF) that specialises in research and sells knowledge to large firms, and the large integrated firm that performs R&D and manufactures and distributes products. This structure characterises the health sector. In primary production, gene modification technology has created economies of scope and scale that have driven rapid corporate concentration. Only a few DBFs have been active in industrial biotechnology, as profitability depends on the ability to scale up production. This requires specialised engineering knowledge and large capital investment.

This chapter identifies two business models that could emerge in the future: collaborative models for sharing knowledge and reducing research costs, and integrator models to create and maintain markets. Collaborative models are relevant to all application areas. Their adoption, combined with new business opportunities for non-food biomass crops, could revitalise DBFs in primary production and in industry. Integrator models could develop in health biotechnology to manage the complexity of predictive and preventive medicine, based on biomarkers, pharmacogenetics, shrinking markets for individual drugs, and the analysis of complex health databases.

Chapter 7

The Bioeconomy of 2030

What is the bioeconomy of 2030 likely to look like? This chapter describes a "probable" bioeconomy in 2030 and develops two fictional scenarios that explore the interaction of different factors on possible futures. The "probable" bioeconomy builds on the types of products that are likely to reach the market by 2015. Within the OECD region, biotechnology could contribute to 2.7% of GDP in 2030, with the largest economic contribution of biotechnology in industry and in primary production. The economic contribution of biotechnology could be even greater in developing countries, due to the importance of these two sectors to their economies.

The scenarios assume an increasingly multi-polar world, with no single country or region dominating world affairs. They include plausible events that could influence the emerging bioeconomy. The results highlight the importance of good governance, including international cooperation, and technological competitiveness in influencing the future. Complex scientific challenges and poorly designed regulations could reduce the ability of industrial biotechnologies to compete with other alternatives. For instance, rapid reductions in the cost of renewable electricity combined with technical breakthroughs in battery technology could result in electrical vehicles out-competing biofuel transport systems. Public attitudes could result in some biotechnologies not reaching their potential. An example is predictive and preventive medicine, where the advance of this technology could be limited by public resistance to poorly planned and intrusive healthcare systems.

P.05

Table 7.1. **Biotechnologies with a high probability of reaching the market by 2030**

Primary production	Health	Industry
Widespread use of MAS in plant, livestock, fish and shellfish breeding.	Many new pharmaceuticals and vaccines, based in part on biotechnological knowledge, receiving marketing approval each year.	Improved enzymes for a growing range of applications in the chemical sector.
GM varieties of major crops and trees with improved starch, oil, and lignin content to improve industrial processing and conversion yields.	Greater use of pharmacogenetics in clinical trials and in prescribing practice, with a fall in the percentage of patients eligible for treatment with a given therapeutic.	Improved micro-organisms that can produce an increasing number of chemical products in one step, some of which build on genes identified through bioprospecting.
GM plants and animals for producing pharmaceuticals and other valuable compounds.	Improved safety and efficacy of therapeutic treatments due to linking pharmacogenetic data, prescribing data, and long-term health outcomes.	Biosensors for real-time monitoring of environmental pollutants and biometrics for identifying people.
Improved varieties of major food and feed crops with higher yield, pest resistance and stress tolerance developed through GM, MAS, intragenics or cisgenesis.	Extensive screening for multiple genetic risk factors for common diseases such as arthritis where genetics is a contributing cause.	High energy-density biofuels produced from sugar cane and cellulosic sources of biomass.
More diagnostics for genetic traits and diseases of livestock, fish and shellfish.	Improved drug delivery systems from convergence between biotechnology and nanotechnology.	Greater market share for biomaterials such as bioplastics, especially in niche areas where they provide some advantage.
Cloning of high-value animal breeding stock.	New nutraceuticals, some of which will be produced by GM micro-organisms and others from plant or marine extracts.	
Major staple crops of developing countries enhanced with vitamins or trace nutrients, using GM technology.	Low-cost genetic testing of risk factors for chronic diseases such as arthritis, Type II diabetes, heart disease, and some cancers.	
	Regenerative medicine provides better management of diabetes and replacement or repair of some types of damaged tissue.	

Primary production

In primary production, biotechnology is already widely used to develop diagnostics for plant and animal diseases and to develop new varieties of trees, crop plants, livestock animals and aquaculture species with valuable traits. Applications to breeding include not only GM, but also many other biotechnologies such as gene shuffling, intragenics and marker assisted selection (MAS). The use of biotechnology in primary production is therefore likely to be pervasive by 2030 for the production of plant and animal food sources and for plant sources of feed and fibre. The separation

Chapter 8

Policy Options for the Bioeconomy: The Way Ahead

P.06

The social and economic benefits of the bioeconomy will depend on good policy decisions. The required mix of policies is linked to the potential economic impacts of biotechnological innovations on the wider economy. Each type of innovation can have incremental, disruptive or radical effects. In many (but not all) cases incremental innovations fit well within existing economic and regulatory structures. Disruptive and radical innovations can lead to the demise of firms and industrial structures, creating greater policy challenges, but they can also result in large improvements in productivity. This chapter identifies policy options to address challenges in primary production, health and industrial biotechnology. It also looks at cross-cutting issues for intellectual property and for knowledge spillovers and integration, global challenges, and the need to develop policies over both the short and long term.

Primary production provides a diverse range of policy challenges. Examples include the need to simplify regulation, encourage the use of biotechnology to improve the nutritional content of staple crops in developing countries, ensure unhindered trade in agricultural commodities, and manage a decline in the economic viability of cool-climate forestry resources for low value commodities such as pulp and paper. The main challenges for health applications are to better align private incentives for developing health therapies with public health goals and to manage a transition to regenerative medicine and predictive and preventive medicine, both of which could disrupt current healthcare systems. Industrial biotechnology faces multiple futures due to competitive alternatives from both outside and within biotechnology. Policy needs to flexibly adapt to different outcomes and prevent "lock-in" to inferior technological solutions.

P.07

Chapter 9

Conclusions: On the Road to the Bioeconomy

Obtaining the full benefits of the bioeconomy will require purposive goal-oriented policy. This will require leadership, primarily by governments but also by leading firms, to establish goals for the application of biotechnology to primary production, industry and health; to put in place the structural conditions required to achieve success such as obtaining regional and international agreements; and to develop mechanisms to ensure that policy can flexibly adapt to new opportunities. There are nine main challenges, summarised in this chapter.

The Bioeconomy to 2030

P.01

DESIGNING A POLICY AGENDA

The biological sciences are adding value to a host of products and services, producing what some have labelled the "bioeconomy". From a broad economic perspective, the bioeconomy refers to the set of economic activities relating to the invention, development, production and use of biological products and processes. If it continues on course, the bioeconomy could make major socioeconomic contributions in OECD and non-OECD countries. These benefits are expected to improve health outcomes, boost the productivity of agriculture and industrial processes, and enhance environmental sustainability. The bioeconomy's success is not, however, guaranteed: harnessing its potential will require coordinated policy action by governments to reap the benefits of the biotechnology revolution.

The Bioeconomy to 2030: Designing a Policy Agenda begins with an evidence-based technology approach, focusing on biotechnology applications in primary production, health, and industry. It describes the current status of biotechnologies and, using quantitative analyses of data on development pipelines and R&D expenditures from private and public databases, it estimates biotechnological developments to 2015. Moving to a broader institutional view, it also looks at the roles of R&D funding, human resources, intellectual property, and regulation in the bioeconomy, as well as at possible developments that could influence emerging business models. Fictional scenarios to 2030 are included to encourage readers to reflect on the interplay between policy choices and technological advances in shaping the bioeconomy. Finally, the book explores policy options to support the social, environmental and economic benefits of a bioeconomy.

The International Futures Programme (IFP) of the OECD undertook *The Bioeconomy to 2030* project with the support of other interested OECD directorates, OECD Government Ministries, and outside partners.

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