Circular economy is an innovative concept, promising the efficient use and reuse of resources and a strong business case. It is a sustainable development strategy that is being proposed to tackle the problems of environmental degradation and weaken the dependence of economy on natural resources and environment. By helping to decouple economic growth from resource use, the transformation to circular economy offers a prospect of sustainable growth that will last. As a low-input, high-recycling, high-efficiency, high-technology and industrialized set of practices, circular economy could create jobs, foster rural youth employment, mitigation and gender mainstreaming. Regarding these questions and the importance of taking the benefits from circular economy, in this book we offer an analysis that give the answers about the current status, the needs, the benefits, the effects and obstacles of circular economy. The results will help in creating goals, strategy and measures for their implementation.



Ljubomir Drakulevski Tatjana Boshkov

Ljubomir Drakulevski - Full-time Professor and Dean of Faculty of Economics, Ss. Cyril and Methodius University, Skopje. Research interests: Strategic Management, International Management, Intern. Business.
Tatjana Boshkov - Ass. Professor at "Goce Delcev" University. Research interests: Exchange rate Policy, Intern. Finance, Financial management.

Circular Economy: Creating the Future in Competitive Societies



978-613-9-89371-3



Ljubomir Drakulevski Tatjana Boshkov

Circular Economy: Creating the Future in Competitive Societies

Ljubomir Drakulevski Tatjana Boshkov

Circular Economy: Creating the Future in Competitive Societies

LAP LAMBERT Academic Publishing

Imprint

Any brand names and product names mentioned in this book are subject to trademark, brand or patent protection and are trademarks or registered trademarks of their respective holders. The use of brand names, product names, common names, trade names, product descriptions etc. even without a particular marking in this work is in no way to be construed to mean that such names may be regarded as unrestricted in respect of trademark and brand protection legislation and could thus be used by anyone.

Cover image: www.ingimage.com

Publisher:

LAP LAMBERT Academic Publishing

is a trademark of

International Book Market Service Ltd., member of OmniScriptum Publishing

Group

17 Meldrum Street, Beau Bassin 71504, Mauritius

Printed at: see last page ISBN: 978-613-9-89371-3

Copyright © Ljubomir Drakulevski, Tatjana Boshkov Copyright © 2018 International Book Market Service Ltd., member of OmniScriptum Publishing Group All rights reserved. Beau Bassin 2018

CIRCULAR ECONOMY: CREATING THE FUTURE IN COMPETITIVE SOCIETIES

By

Ljubomir DRAKULEVSKI, PhD

Professor and Dean at Faculty of Economics Ss. Cyril and Methodius University in Skopje, Macedonia E-mail: Ljubomir.Drakulevski@eccf.ukim.edu.mk

Tatjana BOSHKOV,PhD

Professor at Faculty of Tourism and Business Logistics, Goce Delcev University, Stip, Macedonia E-mail: tatjana.boskov@ugd.edu.mk; tatjana.boshkov@gmail.com



Contents

PART I: CIRCULAR ECONOMY7
1. Circular economy: brief outlook of current situation7
2. Resource efficiency and circular economy: current strategies and efforts in EU
2.1. Economic arguments for circular economy in Europe9
2.1.1. Resource efficiency in Europe11
2.1.2. Circular economy and European labour market12
2.1.3. Perspectives for circular economy activities in Europe16
3. Conclusion
PART II: WASTE MANAGEMENT : CREATING
THE FUTURE IN COMPETITIVE SOCIETIES21
1. The role of the waste management strategy21
1.1. Main characteristics of general waste management scheme22
2. Macedonian waste management
2.1. Measures for implementation of waste management strategy24
PART III
CIRCULAR ECONOMY, RESOURCE EFFICIENCY AND WASTE MANAGEMENT: THE EVIDENCE FOR LATVIA, SLOVENIA AND CROATIA
A. LATVIA25
1. Overview of the case for LATVIA25
2. Developing a circular economy and improving resource efficiency in Latvia
3. Waste management
4. Latvia's Implementation Tools for enhancing environmental policy

4.3. The contribution of EU funds	55
4.4. Effective governance and knowledge	56
4.5. Access to information, knowledge and education	57
5. Concluding Remarks and Recommendations	58
D. MACEDONIA	60
1. Introduction	60
2. Methodology	61
2.1. Results of the survey	62
2.2. Discusion of the results	66
3. Conclusion and Recommendations	68



REFERENCE

- 1) Beasley J., Georgeson R., Arditi S., Barczak P. Advancing Resource Efficiency in Europe: Indicators and waste policy scenarios to deliver a resource efficient and sustainable Europe. Brussels: European Environmental Bureau (EEB), 2014. 50 p.
- Best H., Kneip T. The impact of attitudes and behavioral costs on environmental behavior: A natural experiment on household waste recycling. Social Science Research, vol. 40(3), 2011, pp. 917-930.
- Comin, D., (2006) Total Factor Productivity In C.R. Braun & J. Segura (Eds.), An Eponymous Dictionary of Economics. Elgar Publishers, Ltd
- De Jesus A., Mendonca S. Lost in Transition? Drivers and Barriers in the Ecoinnovation Road to the Circular Economy. Ecological Economics, vol. 145, 2018, pp. 75-89.
- 5) DEFRA (2011) The Further Benefits of Resource Efficiency http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More
- 6) DEFRA (2015) Digest of Waste and Resource Statistics DEFRA UK https://www.gov.uk/government/statistics/digest-of-waste-and- resourcestatistics-2015-edition
- 7) Directive 2008/98/EC of the European Parliament and the Council of 19 November 2008 on Waste and repealing certain Directives. [online] [27.09.2017]. Available at: http://eurlex.europa.eu/
- 8) EC. Closing the loop An EU action plan for the Circular Economy, COM (2015) 614 final, Brussels, 2.12.2015.
- 9) EC. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Closing the loop An EU action plan for the Circular Economy COM(2015) 614 final, Brussels, 2.12.2015. [online] [17.12.2017]. Available at: https://eur-lex.europa.eu/
- 10) EC. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the

Committee of the Regions Towards a circular economy – A zero waste programme for Europe, COM (2014) 398 final, Brussels, 2.07.2014. [online] [12.12.2017]. Available at: http://eur-lex.europa.eu

- 11) EC. Progress Report on the Roadmap to a Resource Efficient Europe. SWD/2014/0206 final/2. [online] [27.09.2017]. Available at: https://eurlex.europa.eu/
- 12) EC. Proposal for a Directive of the European Parliament and of the Council amending Directive 2008/98/EC on waste. COM(2015) 595 final. [online] [12.12.2017]. Available at: http://eurlex.europa.eu/legal-content
- 13) EC. Roadmap for Latvia. Services to support Member States' enforcement actions and inspections concerning the application of EU waste legislation, 2011. [online] [11.01.2018]. Available at: http://ec.europa.eu/environment/waste/framework/pdf
- 14) EMF (2015) "Growth Within: A Circular Economy Vision for a Competitive Europe", EMF, SUN, McKinsey Center for Business and Environment
- 15) European Commission (2010) Directive 2010/75/EU on industrial emissions http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32010L0075 European Parliament resolution of 9 July 2015 on resource efficiency: moving towards a circular economy (2014/2208(INI)). [online] [12.12.2017]. Available at: http://europarl.europa.eu
- 16) Eurostat. Database. [online] [08.01.2018]. Available at: http://ec.europa.eu/eurostat/data/database.
- 17) Eurostat. Environmental economy employment and growth. [online] [17.01.2018]. Available at: http://ec.europa.eu/eurostat/statistics-explained/
- 18) Fischer et al (2011) Green economy and recycling in Europe, ETC/SCP working paper 5/2011, Christian Fischer, Ioannis Bakas, Anders Bjørn, Naoko Tojo and Christian Löwe
- 19) Giusti L. A review of waste management practices and their impact on

- Gregson N., Crang M. From waste to resource: the trade in wastes and global recycling economies. Annual Review of Environment and Resources, vol. 40, 2015, pp. 151-176.
- 21) Hobson K. Closing the loop or squaring the circle? Locating generative spaces for the circular economy. Progress in Human Geography, vol. 40(1), 2016, pp. 88-104.
- 22)IEEP et al (2011) "Supporting the Thematic Strategy on Waste Prevention and Recycling", IEEP, ECOLOGIC, ARCAADIS UMWELTBUNDESAMT, BIO INTELLIGENCE SERVICES & VITO
- 23) Jackson, T (2009) Prosperity Without Growth? The transition to a sustainable economy, Sustainable Development Commission, UK
- 24) Korfiatis K. J., Hovardas T., Pantis J. D. Determinants of environmental behavior in societies in transition: evidence from five European countries. Population and Environment, vol. 25(6), 2004, pp. 563-584.
- Melece L. Challenges and Opportunities of Circular Economy and Green Economy. Engineering for Rural Development, 2016, pp. 1162-1169.
- 26) Melece L., Brizga J., Gaugere K., Ernsteins R. Household food waste management problems in Latvia. International Multidisciplinary Scientific GeoConference Surveying Geology and Mining Ecology Management, SGEM, vol. 17(53), 2017, pp. 457-464.
- 27) Miliute-Plepiene J., Hage O., Plepys A., Reipas A. What motivates households recycling behaviour in recycling schemes of different maturity? Lessons from Lithuania and Sweden. Resources, Conservation and Recycling, vol. 113, 2016, pp. 40-52.
- 28) Palmiotto M., Fattore E., Paiano V., Celeste G., Colombo A., et al. Influence of a municipal solid waste landfill in the surrounding environment: Toxicological risk and odor nuisance effects. Environment International, vol. 68, 2014, pp. 16-24.

- 29) Seadon J. K. Sustainable waste management systems. Journal of Cleaner Production, 2010, vol. 18(16-17), 2010, pp. 1639-1651.
- 30) Smith (2012) "Unemployment and mismatch in the UK" Bank of England/Institute of Macroeconomics Conference on Unemployment, productivity and potential output: the aftermath of the crisis, October 2012
- 31) Song Q., Li J., Zeng X. Minimizing the increasing solid waste through zero waste strategy. Journal of Cleaner Production, vol. 104, 2015, pp. 199-210.
- 32) Steg L., Vlek C. Encouraging pro-environmental behaviour: An integrative review and research agenda. Journal of environmental psychology, vol. 29(3), 2009, pp. 309-317.
- 33) WRAP/GA (2015a) Employment and the circular economy job creation in a more resource efficient Britain, Julian Morgan (Green Alliance) and Peter Mitchell (WRAP)
- 34) Zaman A. U. A comprehensive review of the development of zero waste management: lessons learned and guidelines. Journal of Cleaner Production, vol. 91, 2015, pp. 12-25.

Specific national policies or strategies that were included in the text as a source are the following documents:

- Annual Programme of Statistical Surveys (LPSR)
- EUROPE 2020 A strategy for smart, sustainable and inclusive growth (COM(2010)2020
- European Union, Directive 2003/4/EC on public access to environmental information
- European Union, EU eGovernment Action Plan 2016-2020 Accelerating the digital transformation of government COM(2016) 179 final
- European Union, INSPIRE Directive 2007/2/EC
- Eurostat 2013: Manual on Waste Statistics, A handbook for data collection on waste generation and treatment http://ec.europa.eu/eurostat/documents/3859598/5926045/KS-RA-13-015-EN.PDF/055ad62c-347b-4315-9faa-0a1ebcb1313e
- First Macedonian Progress Report on the Promotion and Use of Energy from Renewable Sources, https://www.energycommunity.org/portal/page/portal/ENC_HOME/DOCS/35 90146/Macedonia_RES_Progress_Report_05.02.2015.pdf
- http://drustage.unep.org/unepmap/6-offshore-protocol
- http://unfccc.int/resource/docs/natc/hrvnc4.pdf
- http://www.mzoip.hr/hr/propisi-i-medunarodni-ugovorixxx.html.
- https://inspire.ec.europa.eu/documents/inspire-evaluation-summary-findingseu-member-states
- List of Waste (LoW). It is defined by Commission Decision of 18 December 2014 amending Decision 2000/532/EC on the list of waste pursuant to Directive 2008/98/EC of the European Parliament and of the Council: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32014D0955
- National Programme on Energy efficiency of Public Buildings in Republic of Macedonia, 2012–2018,

- www.economy.gov.mk/ministerstvo/sektori_vo_ministerstvo/sektor_za_energ etika/3093.html
- National Strategy for Clean Development Mechanism 2007, http://www.moepp.gov.mk/wp-content/uploads/2014/12/National-Strategy-Kyoto-Protocol.pdf
- Operational programme competitiveness and cohesion 2014-2020; support for alignment with the EU environmental acquishttp://ec.europa.eu/regional_policy/hr/atlas/programmes/2014-2020/Republic%20of%20Croatia/2014hr16m1op001
- Strategy for Increasing Energy Efficiency in the Republic of Macedonia until 2020,
 http://www.economy.gov.mk/Uploads/files/sektorskiDok/energetika/Strategy_for_IEE_EN.pdf
- Strategy for Sustainable Development in the Republic of Macedonia 2010.
- Strategy for Sustainable Development of the Republic of Croatia http://www.mzopu.hr/doc/Strategy_for_Sustainable_Development.pdf
- Sustainable Development (2010), by the State Statistical Office, http://www.stat.gov.mk/Publikacii/Odrzliv_razvoj_2010.pdf
- The Convention on the Protection and Use of Trans-boundary Waters and International Lakes (OG – International Treaties No. 4/96).
- The European Statistical Classification of Waste (EWC-Stat). Published within Annex 1 of Commission Regulation (EU) No 849/2010 of 27 September 2010 amending Regulation (EC) No 2150/2002 of the European Parliament and of the Council on waste statistics: http://eur-lex.europa.eu/legalcontent/EN/TXT/?uri=CELEX:32010R0849
- UNECE, 1998. Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters
- Waste Act (http://narodnenovine.nn.hr/clanci/sluzbeni/2013_07_94_2123.html
- Waste Collected from Production and Service Activities (ODP-Z survey).
 theme: Environment, sub-theme: Waste.
 http://www.stat.si/StatWeb/glavnanavigacija/metode-in-klasifikacije/porocila-okakovosti

- Waste disposal operations (Operations D). Set out in Annex 1 of Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives: http://eurlex.europa.eu/legalcontent/EN/TXT/?uri=CELEX:32008L0098&qid=1475136 465792
- Waste Management Strategy of the Republic of Croatia (OG No. 130/05) http://narodne-novine.nn.hr/clanci/sluzbeni/289920.html
- Waste Management Strategy of the Republic of Macedonia 2008–2020, http://www.moepp.gov.mk/wp-content/uploads/2014/12/Final-Strategija-za-otpad-mak.pdf



Buy your books fast and straightforward online - at one of the world's fastest growing online book stores! Environmentally sound due to Print-on-Demand technologies.

Buy your books online at

www.get-morebooks.com

Kaufen Sie Ihre Bücher schnell und unkompliziert online – auf einer der am schnellsten wachsenden Buchhandelsplattformen weltweit!

Dank Print-On-Demand umwelt- und ressourcenschonend produziert.

Bücher schneller online kaufen

www.morebooks.de

SIA OmniScriptum Publishing Brivibas gatve 1 97 LV-103 9 Riga, Latvia Telefax: +371 68620455

