

Technická univerzita vo Zvolene

Drevárska fakulta, Katedra ekonomiky, manažmentu a podnikania

Stretnutie ekonomicky zameraných lesníckych a drevárskych katedier z ČR a SR

SYMPÓZIUM: VEDA A VÝSKUM NA EKONOMICKÝCH KATEDRÁCH A ÚSTAVOCH LESNÍCKYCH A DREVÁRSKYCH FAKÚLT V ČR A SR 2023

Katedra ekonomiky,
manažmentu a
podnikania,
Drevárska fakulta,
Technická univerzita vo
Zvolene

Katedra marketingu,
obchodu a svetového
lesníctva,
Drevárska fakulta,
Technická univerzita vo
Zvolene

Katedra ekonomiky a
riadenia lesného
hospodárstva,
Lesnícka fakulta,
Technická univerzita vo
Zvolene

Katedra lesnícké
a dřevarařské ekonomiky,
Fakulta lesnická a dřevarařská,
Česká zemědělská univerzita v Praze

Ústav lesnické
a dřevarařské ekonomiky a politiky,
Lesnická a dřevarařská fakulta,
Mendelova univerzita v Brně

ZBORNÍK ABSTRAKTŮ

Nemecká, Slovenská republika, 13.9. – 14.9. 2023

Zostavil: Ing. Katarína Marcineková, PhD. et Ph.D.

**SYMPÓZIUM: VEDA A VÝSKUM NA EKONOMICKÝCH
KATEDRÁCH A ÚSTAVOCH LESNÍCKYCH A DREVÁRSKYCH
FAKÚLT V ČR A SR 2023**

Zborník abstraktov

**NÁZOV: SYMPÓZIUM: VEDA A VÝSKUM NA EKONOMICKÝCH
KATEDRÁCH A ÚSTAVOCH LESNÍCKYCH A DREVÁRSKYCH FAKÚLT
V ČR A SR, ZBORNÍK ABSTRAKTOV 2023**

Zostavovateľ: Ing. Katarína Marcineková, PhD. et Ph.D.,

Vydanie: I. - 2023

Vydané: elektronicky na CD

Náklad: 30 ks

Rok vydania: 2023

Rozsah: 33 strán

Grafická úprava: doc. Ing. Marek Potkány, PhD., Ing. Katarína Marcineková, PhD. et Ph.D.

© 2023, Technická univerzita vo Zvolene

Vydavateľ: Technická univerzita vo Zvolene, Ul. T. G. Masaryka 24, 960 01 Zvolen, SR

Za odbornú úroveň tejto publikácie zodpovedajú autori a recenzenti. Obsah zborníka neprešiel jazykovou úpravou.

Publikované príspevky prešli recenzným konaním. Všetky práva sú vyhradené. Žiadna časť textu ani ilustrácií nemôže byť použitá pre ďalšie šírenie akoukoľvek formou bez prechádzajúceho súhlasu autorov alebo vydavateľa.

ISBN 978-80-228-3392-9

SYMPÓZIUM: VEDA A VÝSKUM NA EKONOMICKÝCH KATEDRÁCH A ÚSTAVOCH LESNÍCKYCH A DREVÁRSKYCH FAKÚLT V ČR A SR

ZBORNÍK ABSTRAKTOV

Sympóziu, ktoré sa konalo v dňoch 13. a 14. septembra 2023 v príjemnom prostredí Penziónu Hradisko v Nemeckej, vytvorilo príležitosť pre zdieľanie poznatkov, skúseností a vízií odborníkov z katedier a ústavov zameraných na ekonómiu, manažment a podnikanie lesníckych a drevárskych fakúlt v Českej republike a Slovenskej republike.

Veľké poďakovanie za množstvo podnetných prezentácií vybraných problémov a riešení v oblasti ekonómie, manažmentu a ekosystémových služieb v praxi lesnícko-drevárskeho komplexu, patrí všetkým účastníkom stretnutia. Všetci sa postarali o vysoký stupeň odbornosti prostredníctvom prezentácie nových poznatkov, perspektív a riešení aktuálnych výziev v predmetnej oblasti. Konštruktívne diskusie a výmeny názorov, prispeli k bohatšiemu porozumeniu komplexným výzvam a možnostiam, ktoré pred nami stoja.

Témy prezentované jednotlivými katedrami boli veľmi širokospektrálne, pričom jednotlivé príspevky boli zamerané na analýzy, predikcie surovínovej základne, trendov vývoja inovácií v oblasti lesného hospodárstva a drevospracujúceho priemyslu, otázok a výziev cirkulárnej ekonomiky a bioekonomiky, ale aj životného cyklu lesa, hodnotenia výkonnosti odvetví, otázok lesníckej politiky, identifikácie faktorov vplyvu ekonomických a finančných nástrojov na lesné hospodárstvo, stanovenie faktorov úspechu podnikov využívajúcich rekreačný potenciál lesov až po podniky vyrábajúce nábytok a zaoberajúce sa prvostupňovým spracovaním dreva.

Program podujatia obsahoval aj čas venovaný prezentácii posterov, na ktorých boli prevažne predstavené výsledky výskumu z doktorských prác jednotlivých katedier/ústavov.

Touto cestou by sa kolektív zamestnancov Katedry ekonomiky, manažmentu a podnikania (KEMP) chcel úprimne poďakovať všetkým účastníkom, prednášajúcim, recenzentom, organizátorom a sponzorom, ktorí prispeli k uskutočneniu tohto sympózia. Dúfame, že zborník bude pre Vás cenným zdrojom informácií a inšpirácie. Veríme, že stretnutie splnilo účel utužovania existujúcich a vytvárania nových priateľstiev a výziev spolupráce do budúcnosti..

Katedra ekonomiky, manažmentu a podnikania

Drevárska fakulta

Technickej univerzity vo Zvolene

Nemecká, 13. 9. 2023 – 14. 9. 2023

OBSAH

Forest Ecosystems Valuation: A Systematic Review of Methods	4
SEUN BOLUWATIFE AJALA	
Criteria and Indicators of Environmental Reporting	5
BORIS BARTALSKY	
Analysis and Prediction of the Development of the Forest Dendromass Raw Material Base Available for Technological and Energy Purposes in the Czech Republic	6
DAVID BŘEZINA	
Proposal of Forest Management Approach According to Identified Trade-Offs and Synergies Between Forest Ecosystems Services: A Literature Review	7
ALEX BUMBERA, DANIEL HALAJ	
Neglect of Mandatory Care in Forest Protection in Light of Court Decision-Making Practices in the Czech Republic.....	8
MARTIN CEMPIREK, MICHAL HRIB	
Success Factors of Scientific Knowledge Transfer – Increasing Recreational Function of Forest in Bratislava Region	9
ZUZANA DOBŠINSKÁ, JÁN MATÚŠ URBANČÍK, JAROSLAV ŠÁLKA	
Aspects of Wood Trade from Stands with Pioneer Species in the Czech Republic	10
ROMAN DUDÍK, PETRA PALÁTOVÁ	
Model of Implementation of Green Growth Indicators in Forestry Enterprises	11
SAMUEL FEKIAČ, IVETA HAJDÚCHOVÁ	
Approaches, Methods, and Tools of Quality Management in the Context of Performance and Comparison of Selected Industries in Slovakia.....	12
PAVOL GEJDOŠ	
Decisive Parameters of Consumer Buying Behavior When Buying Furniture	13
MILOŠ GEJDOŠ, MILOŠ HITKA, ANDREJ MIKLOŠÍK, PETER ŠTARCHOŇ	
The Impact of the Green Economy on the Sustainability of Employment in Forestry	14
IVETA HAJDÚCHOVÁ, IVAN STRACHOŇ	
Assessment of Silviculture and Timber Harvesting Using a Life Cycle Assessment Approach	15
MIROSLAV HÁJEK, KAREL PULKRAB, RATNA CHRISMIARI PURWESTRI, MARIE TICHÁ, MARTINA PADUCHOVÁ	
Agility of the Wood-Processing Industry Businesses.....	16
MARTIN HALÁSZ, ANDREA JANÁKOVÁ SUJOVÁ	
International-National Forest Policy Nexus: The Case of Slovakia.....	17
LENKA HALUŠKOVÁ, JAROSLAV ŠÁLKA	
Updating the Investment Multiplier Value for the Evaluation of Annual Planting Expenditures Within the Slovak Forestry.....	18
JÁN HOLÉCY	
Support for Small Forest Owners in the Czech Republic.....	19
VILÉM JARSKÝ	

Analysis of Program Statements of the Government of the Slovak Republic for Forestry	20
PETER KICKO, ZUZANA DOBŠINSKÁ, JAROSLAV ŠÁLKA	
Strategy for the Development and Sustainability of Family Business in the Woodworking and Furniture Industry in the Slovak Republic	21
MAREK KOSTÚR, MARIANA SEDLIAČIKOVÁ	
Key Competitiveness Factors of Enterprises Within Wood Processing Industry	22
PETRA LESNÍKOVÁ, KORNÉLIA JANOTKOVÁ	
Corporate Culture: A Comparison Between Slovakia and the Czech Republic	23
SILVIA LORINCOVÁ	
Trend in the Development of Innovation Activity in Wood Processing Industry Enterprises in Slovakia	24
ERIKA LOUČANOVÁ	
Critical Success Factors for Furniture Manufacturing Companies	25
KATARÍNA MARCINEKOVÁ	
A Mathematical Model of Forest Insurance Against Multiple Risk Occurrence of Extreme Damages	26
JAKUB MEDEK, JÁN HOLÉCY	
A Consumer Perspective for Venison Market in the Czech Republic Context	27
MARTIN NĚMEC, MARCEL RIEDL, VILÉM JARSKÝ	
Rebirth of Resources: Production from Waste Wood and Plastic	28
MÁRIA OSVALDOVÁ, MAREK POTKÁNY	
Assessment of Economic Impacts of Forest Management in Protected Areas in SR on Forest Industries	29
JÁN PAROBEK, HUBERT PALUŠ, MICHAL DZIAN	
Economic and Financial Instruments Within the Forestry Sector in the Czech Republic	30
MICHAELA PERUNOVÁ, JARMILA ZIMMERMANNOVÁ	
The Use of Controlling in Family Businesses of the Woodworking and Furniture Industry	31
NATÁLIA POLÁKOVÁ, MARIANA SEDLIAČIKOVÁ	
The Influence of Natural Drying on Logistic Processes of Supply in Enterprises of the Wood Processing Industry	32
ĽUBICA SIMANOVÁ	
Basis for Determining the Economics of Forest Protection Emergency in the Czech Republic	33
ROMAN SLOUP, ROMAN DUDÍK	

FOREST ECOSYSTEMS VALUATION: A SYSTEMATIC REVIEW OF METHODS

SEUN BOLUWATIFE AJALA

Abstract

Forest ecosystem services provide benefits to human beings; however, it is after the economic assessment, when such services become more relevant. Designing suitable policies, defining strategies, and managing ecosystems all depend on the economic valuation of ecosystem services. Researchers employ a variety of techniques to assess ecosystem services. The methodological approaches used to value forest ecosystem services are evaluated and reviewed in this research. There are numerous methods used by researchers to evaluate ecosystem services. The most widely used methods are the monetary valuation methods, they are often deemed to be the most pragmatic. A quantitative review was carried out through a bibliometric analysis to identify the main drivers of this line of research and its development trends, also a qualitative review was conducted through a systemic review focusing on the commonly used valuation techniques in relation to the characteristics of the service, the geographical scope and the ecosystem analyzed. Both well-known strategies and lesser-known techniques, such the willingness to sell approach and the Delphi method, were included in this study. The study of these techniques found several nomenclature errors and sporadic conceptual difficulties. In the interest of methodological clarity, it is crucial to overcome these flaws. This evaluation also emphasizes the need for continued development and improvement of the monetary assessment of ecosystems and environmental services.

Keywords: Forest ecosystem services, monetary valuation, methodology.

Authors' address

SEUN BOLUWATIFE AJALA, *Czech University of Life Sciences Prague, Faculty of
Forestry and Wood Sciences, Kamycka 1281, Suchdol Praha, 165 00, Prague, Czech Republic,*
ajala@fld.czu.cz

CRITERIA AND INDICATORS OF ENVIRONMENTAL REPORTING

BORIS BARTALSKY

Abstract

Criteria and indicators are generally recognized as a valuable scientifically based tool for defining the entire spectrum of values associated with forests management and measurable goals to measure progress towards sustainable forestry. In general, we define criteria as conditions that must be met to fulfil the goal. Indicators represent measurable states that allow assessing whether a given criterion has been met. National-level criteria define the range of forest values to be addressed and the basic elements or principles of forest management against which forest sustainability can be assessed. Each criterion relates to a key element of sustainability. The indicators measure specific quantitative and qualitative attributes and help monitor trends in the sustainability of forestry over time. The aim of the paper is to present the results of the collection of criteria and indicators. The main object of the research was national and international indicator reports. These were forestry sector reports, environmental reports, reports focused on a specific topic related to forestry issues such as biodiversity and indicator reports regarding sustainable forest management (SFM) models. The result of the collection was 35 sector reports, in which we recorded 1742 indicators and 205 criteria. From the point of view of SFM models, the collection results represented 8 models, the criteria, and indicators of which were classified based on the UN reference framework for SFM. The models themselves contained a total of 60 criteria and 447 indicators.

Keywords: Environmental indicator, criteria of SFM, forestry report.

Acknowledgments: *Supported by the grant KR:EK:IN - Landscape Economy for an Innovative and Sustainable Interdisciplinary University Education in Slovakia.*

Authors' address

BORIS BARTALSKY, Ing., *Technical University in Zvolen, Department of Forest Economics and Policy, T. G. Masaryka 24, 960 01 Zvolen, Slovakia, xbartalsky@is.tuzvo.sk*

ANALYSIS AND PREDICTION OF THE DEVELOPMENT OF THE FOREST DENDROMASS RAW MATERIAL BASE AVAILABLE FOR TECHNOLOGICAL AND ENERGY PURPOSES IN THE CZECH REPUBLIC

DAVID BŘEZINA

Abstract

The article provides an analysis of the model of development of the overall raw timber stock and felling in the Czech Republic based on the outputs of the 2014 National Forest Inventory II and comprehensive forest management plans. The performed analysis was used to forecast the raw material base of dendromass (forest logging residues) available for technological and energy purposes in 2021–2061. The article also offers an educated estimate of whether the Czech Republic is able to meet the targets for the use of energy from renewable sources contained in the binding documents of the European Union. It is possible to state that, currently, the share of forest biomass from primary production in the energy mix of the Czech Republic is at its maximum available limit. Hence, if we want to preserve the quality of forests in the Czech Republic in the future, we must focus on other resources that could be used to fulfil the goals that our country, as one of the EU Member States, has set for itself. A potential option can be found in the waste generated at sawmills, paper mills, or the construction industry, i.e., wherever unprocessed wood waste remains.

Keywords: Dendromass, energy potential, logging residues, growing stock, national climate targets.

Acknowledgments: *Thanks are also due to the contract research entitled: “Analysis and prediction of the development of raw timber stocks in forest areas of the Czech Republic and the development of the available raw material base of forest dendromass for technological and energy purposes in the Czech Republic”; prepared for the Forestry and Timber Chamber of the Czech Republic. The Institute for Forest Management in Brandy’s nad Labem CR also participated in the study.*

Authors' address

DAVID BŘEZINA, *Ing., Ph.d., Mendel University in Brno, Faculty of Forestry and Wood Technology, Zemědělská 3, Czech Republic, Brno, david.brezina@mendelu.cz*

PROPOSAL OF FOREST MANAGEMENT APPROACH ACCORDING TO IDENTIFIED TRADE-OFFS AND SYNERGIES BETWEEN FOREST ECOSYSTEMS SERVICES: A LITERATURE REVIEW

ALEX BUMBERA, DANIEL HALAJ

Abstract

This paper explores the trade-offs and synergies between forest ecosystem services (FES) by reviewing scientific literature. The focus is primarily on research in European forests, including other countries with boreal and temperate forests. Through content analysis, we reviewed 167 articles from the licensed Web of Science database using specific keywords, from which 38 articles discussed relationships between forest ecosystem services. The research study shows that using one service often affects others due to the complexity of the ecosystem. Wood provisioning with other services often presents a trade-off relationship. However, wood provisioning can coexist with other forest ecosystem services when appropriately managed. It can even positively impact carbon sequestration, water retention and recreation. Based on these findings, the paper offers possible forest management approaches for reducing the number of trade-offs and increasing the share of synergy relationships with an assumed positive impact on the economy of the forest enterprise.

Keywords: Forest management, ecosystem services, trade-offs, forest enterprises, synergy.

Acknowledgments: *This work is supported by the VEGA project [1/0271/22] under the Ministry of Education, Science, Research and Sport of the Slovak Republic.*

Authors' address

ALEX BUMBERA, *Ing.*, Technical University in Zvolen, Faculty of Forestry, Slovak Republic,
T.G. Masaryka 24, Zvolen, 96001, Slovakia, xbumbera@is.tuzvo.sk

DANIEL HALAJ, *doc. Ing., PhD.*, Technical University in Zvolen, Faculty of Forestry, Slovak
Republic, T.G. Masaryka 24, Zvolen, 96001, Slovakia, halaj@tuzvo.sk

NEGLECT OF MANDATORY CARE IN FOREST PROTECTION IN LIGHT OF COURT DECISION-MAKING PRACTICES IN THE CZECH REPUBLIC

ZANEDBÁNÍ POVINNÉ PÉČE V OCHRANĚ LESA VE SVĚTLE
ROZHODOVACÍ PRAXE SOUDŮ V ČESKÉ REPUBLICE

MARTIN CEMPÍREK, MICHAL HRIB

Abstract

The extreme increase in salvage logging, the sharp oversupply of wood on the market, the associated sales crisis, and the lack of processing capacity in forestry operations have forced legislators to respond. The changes characterised by the extensive decay and dying of forests have resulted in the modification or changes of existing legal regulations governing the area of forest law. In 2019, two amendments to the Forestry Act were adopted, thus responding to this new situation by amending legal regulations. In this paper, the authors present examples of several "representative" court decisions, dealing with neglect of forest care by the owner due to bark beetle calamity. Based on the court decisions, we can formulate principles and measures, for the violation of which the forest owner can be fined by an administrative authority. The discussed court decisions dealt with the owners' neglect of the forest, which occurred mainly as a result of poor communication between the professional forest manager and the forest owner. The owners of the forest resigned from their legal obligation to take care of the forest. Still, they did not try to seek the help of a professional forest manager to provide them with support in finding the appropriate commercial company that would carry out the remediation of the bark timber, possibly offering assistance in the form of forest economic records.

Keywords: Kůrovcová kalamita, odborný lesní hospodář, ohrožení lesa, rozsudky soudů.

Acknowledgments: *Príspevok vznikl v rámci řešení projektů NAZV QK21020371 „Udržitelné hospodaření v lesích drobných vlastníků“ a NAZV QK21010198 „Adaptace lesního hospodářství pro udržitelné využívání přírodních zdrojů“ s podporou finančních prostředků poskytnutých Ministerstvem zemědělství ČR.*

Authors' address

MARTIN CEMPÍREK, *JUDr., Ph.D., Mendelova univerzita v Brně, Lesnická a dřevařská fakulta, Zemědělská 3, Czech Republic, Brno, martin.cempirek@mendelu.cz*

MICHAL HRIB, *Mgr., Ing., Ph.D., Česká zemědělská univerzita v Praze, Fakulta lesnická a dřevařská, Kamýcká 1176, Czech Republic, Praha 6 - Suchbátka, hrib@fld.czu.cz*

SUCCESS FACTORS OF SCIENTIFIC KNOWLEDGE TRANSFER – INCREASING RECREATIONAL FUNCTION OF FOREST IN BRATISLAVA REGION

ZUZANA DOBŠINSKÁ, JÁN MATÚŠ URBANČÍK, JAROSLAV ŠÁLKA

Abstract

In present day there is growing need for scientifically based political decision, which can resolve problems tied to usage of forests. This trend is even more occurring in places with high attention from citizens, especially in close vicinity of urbanised areas. In these places needs of public have to be acknowledged. In our case, forests in Bratislava region, scientific bases for political solution was provided by team of scientists from different departments of forestry faculty of technical university of Zvolen. This scientific bases aimed to find balance between timber production and other ecosystem services. For analysis of this process of scientific knowledge transfer we used RIU model, which we applied to specific situation of change of management of urban forests in close proximity to capital city. Results have shown that scientific knowledge created baseline for political negotiations between municipal government and state forest enterprise. Agreement was signed after concessions from all involved sides, but these did not fully reflected scientific advice, as in compensation calculations.

Keywords: RIU, knowledge transfer, forest management, scientific knowledge transfer.

Acknowledgments: *Supported by the grant APVV-20-0429 funded by the Slovak research and development agency.*

Authors' address

ZUZANA DOBŠINSKÁ, *Mgr., JUDr, PhD., Technical university in Zvolen, Forestry faculty, T. G. Masaryka 2117/24, Zvolen, Slovakia, Zuzana.dobsinska@tuzvo.sk*

JÁN MATÚŠ URBANČÍK, *Ing., Technical university in Zvolen, Forestry faculty, T. G. Masaryka 2117/24, Zvolen, Slovakia, jan.urbancik@tuzvo.sk*

JAROSLAV ŠÁLKA, *prof. Dr. Ing., Technical University in Zvolen, Faculty of forestry, T. G. Masaryka 24, Zvolen, Slovak republic, salka@tuzvo.sk*

ASPECTS OF WOOD TRADE FROM STANDS WITH PIONEER SPECIES IN THE CZECH REPUBLIC

ROMAN DUDÍK, PETRA PALÁTOVÁ

Abstract

The initial situation and reasons for the use of pioneer trees (mainly birch, alder and aspen) in forest restoration in the Czech Republic are a reaction to the calamity situation in the Czech Republic. Between 2015 and 2020 (2021), there was a 100% increase in harvesting (87-95% of which was salvage felling and about 95% of which was conifer tree species). This essentially led to a 100% increase in the areal extent of forest regeneration. The lack of planting stock of fir and broadleaved "economic trees" has led to the use of the pioneering abilities of "pioneer trees" and the use of natural and artificial regeneration of birch, alder and aspen. The low proportion of birch (2.8%), alder (1.4%) and aspen (up to 1%) in the forests of the Czech Republic also means that there is no market for their raw wood, as we know it for spruce, pine or beech. There is not enough information available on the volumes of harvested timber by species, as these under-represented species are part of the 'other broadleaved species' group. In the absence of major processors of quality timber (roundwood) from these species, most of the produced assortments are then pulpwood or fuelwood. Part of the research is to investigate the possibilities of (future) traditional use of wood raw material from pioneer trees in the Czech Republic and neighbouring countries. There is also a focus on the prices of raw wood assortments. At the same time, the potential for (future) non-traditional use of wood raw material from these trees is also being investigated, e.g. in the food, pharmaceutical, clothing and other industries. The possibilities of substitution of the use of individual tree species will be also taken into consideration.

Keywords: Birch, alder, aspen, utilization, timber trade.

Acknowledgments: *Supported by the grant NAZV QK22020008 (Komplexní vyhodnocení plnění produkčních a mimoprodukčních funkcí lesa u porostů přípravných dřevin/Comprehensive assessment of wood-producing and non-wood-producing functions of pioneer tree species stands) and by the grant NAZV QK21020371 (Udržitelné hospodaření v lesích drobných vlastníků/Sustainable management in small-owner forest estates), both funded by the Ministry of Agriculture of the Czech Republic.*

Authors' address

ROMAN DUDÍK, *doc. Ing., Ph.D., Czech University of Life Sciences Prague, Faculty of Forestry and Wood Sciences, Kamýcká 129, Prague, Czech Republic, dudik@fld.czu.cz*

PETRA PALÁTOVÁ, *Ing., Bc., Ph.D., Czech University of Life Sciences Prague, Faculty of Forestry and Wood Sciences, Kamýcká 129, Prague, Czech Republic, palatovap@fld.czu.cz*

MODEL OF IMPLEMENTATION OF GREEN GROWTH INDICATORS IN FORESTRY ENTERPRISES

SAMUEL FEKIAČ, IVETA HAJDÚCHOVÁ

Abstract

Forestry businesses play a pivotal role in sustainable development, making it essential to devise frameworks that integrate green growth indicators seamlessly into their operations. This dissertation ambitiously sets out with the primary aim of constructing a detailed and comprehensive model to meet this need. Grounded in meticulous research, the proposed model emphasizes the adjustments of existing indicators, ensuring they resonate with the distinctive requirements and peculiarities of forest management. One cannot understate the significance of such adaptations, especially when gauging their potential to reshape and enhance the prevailing economic policies. These policies, when influenced by the calibrated indicators, can champion the optimum utilization of invaluable forest ecosystem services. An integrated methodology, as proposed, does more than just theoretical alignment. It promises tangible outcomes in promoting sustainable economic growth within the realm of forest management. Furthermore, it's not just about economic proliferation; the approach underscores a dual benefit of bolstering performance metrics and creating employment opportunities within the sector. A noteworthy segment of this study is the assessment derived from a meticulously curated questionnaire survey. This survey offers insights into the nuances of green growth indicators as applied to diverse business legal structures. It piques curiosity by examining the correlation between a business's legal form, its inclination towards green growth indicators, and the scale of forest land ownership. To add robustness to these claims, the research employs a rigorous binomial test, ensuring the validity of presented hypotheses.

Keywords: Green growth, sustainable development, forestry, green growth indicators.

Acknowledgments: *The project APVV 18-0520 Innovative methods of analyzing the performance of the forestry-timber complex using the principles of green growth is financed by the Research and Development Support Agency in Bratislava, www.apvv.sk.*

Authors' address

SAMUEL FEKIAČ, *Mgr.*, Technical university Zvolen, Faculty of Forestry, T. G. Masaryka 2117/24, Zvolen, Slovakia, xfekiac@is.tuzvo.sk

IVETA HAJDÚCHOVÁ, *prof. Ing., PhD.*, Technical university Zvolen, Faculty of Forestry, T. G. Masaryka 2117/24, Zvolen, Slovakia, hajduchova@tuzvo.sk

**APPROACHES, METHODS, AND TOOLS OF QUALITY
MANAGEMENT IN THE CONTEXT OF PERFORMANCE AND
COMPARISON OF SELECTED INDUSTRIES IN SLOVAKIA**
PRÍSTUPY, METÓDY A NÁSTROJE MANAŽÉRSTVA KVALITY V
KONTEXTE VÝKONNOSTI A KOMPARÁCIE VYBRANÝCH ODVETVÍ
PRIEMYSLU NA SLOVENSKU
PAVOL GEJDOŠ

Abstract

The aim of the paper is to compare the effect of implementing a larger scope of methods and quality management approaches of the enterprises in wood processing, automotive and engineering industry in Slovakia. The automotive and engineering industries have been selected for comparison because there is a significant difference in the approach of the state support and incentives of these industries as well as they are important manufacturing industries with a significant GDP share and export rate in Slovakia. At the same time, there is a presumption of several common determinants of the implementation of quality management systems and the circular economy potential in comparison with the wood-processing industry. The results of performed analyses revealed the existence of significant relations among capital structure and the complexity of the use of quality management methods, tools and approaches.

Keywords: Kvalita, metódy, nástroje a prístupy manažérstva kvality, drevospracujúci priemysel.

Acknowledgments: *This contribution is a part of the work on the project VEGA no. 1/0093/23 “Research of the potential of the circular economy in the Slovak business environment in the production of innovative products based on recycled materials wood - rubber – plastic”.*

Authors' address

PAVOL GEJDOŠ, *Ing., PhD., Technical university Zvolen, Faculty of Wood Sciences and Technology, T. G. Masaryka 2117/24, Zvolen, Slovakia, gejdosp@tuzvo.sk*

DECISIVE PARAMETERS OF CONSUMER BUYING BEHAVIOR WHEN BUYING FURNITURE

MILOŠ GEJDOŠ, MILOŠ HITKA, ANDREJ MIKLOŠÍK, PETER
ŠTARCHON

Abstract

A properly chosen bed plays a large part in the quality of sleep, and the quality of sleep plays a large part in a person's psychological and physical well-being. In this work, we define the parameters of consumer purchasing behavior when purchasing furniture for users with higher weight and height. Based on the current statistical characteristics of the body dimensions of the current adult population of Slovakia, the dimensions of a single bed were determined. Descriptive statistics of bariatric respondents in Slovakia point to a growing trend of increasing population weight. Based on the opinions of 1000 respondents, we define the opinions on the purchasing behavior of consumers from the point of view of gender, education, and financial income of consumers on the need to increase the dimensions and strength characteristics of bed furniture..

Keywords: Veľkosť lôžkového nábytku, preferovanie domácich produktov, certifikované produkty, online nákup.

Acknowledgments: *This research was supported by APVV-20-0004 The effect of an increase in the anthropometric measurements of the Slovak population on the functional properties of furniture and the business processes, VEGA 1/0161/21 Dependence of the type of corporate culture on the industries of Slovak enterprises and selected socio-demographic factors, VEGA 1/0379/20 Socio-economics aspects of rail transport market services deregulation in the context of EU legal framework and sustainable mobility, KEPA 012UCM 4/2022 Human Resources Management in a Digital World – A Bilingual (Slovak-English) Course Book with E-learning Modules based on Multimedia Content, APVV-22-0001 Optimization of main health and safety risks in the use of forest biomass for energy purposes and KEPA 004TU Z-4/2023 Innovative methods for assessing the quality potential of forest stands.*

Authors' address

MILOŠ GEJDOŠ, *doc. Ing., PhD., Technical university Zvolen, Faculty of Forestry, T. G. Masaryka 2117/24, Zvolen, Slovakia, gejdos@tuzvo.sk*

MILOŠ HITKA, *prof., Ing., PhD., Technical university Zvolen, Faculty of Wood Sciences and Technology, T. G. Masaryka 2117/24, Zvolen, Slovakia, hitka@tuzvo.sk*

ANDREJ MIKLOŠÍK, *doc. Ing., PhD., Comenius University in Bratislava, Faculty of Management, Odbojárov 10, P.O.BOX 95, 820 05 Bratislava 25, Slovakia, andrej.miklosik@fm.uniba.sk*

PETER ŠTARCHON, *prof., Mgr., PhD., Comenius University in Bratislava, Faculty of Management, Odbojárov 10, P.O.BOX 95, 820 05 Bratislava 25, Slovakia, peter.starchon@fm.uniba.sk*

THE IMPACT OF THE GREEN ECONOMY ON THE SUSTAINABILITY OF EMPLOYMENT IN FORESTRY

IVETA HAJDÚCHOVÁ, IVAN STRACHOŇ

Abstract

The aim of the research will be analysis of development of employment in forestry and an option to increase by application of principles of the green economy in the field of production and ecosystem services of forests. Expected changes in the field of energetic sources attach importance to wood as a raw material, which will become a permanent part of the energetic mix. On the land of SR and ČR, wood material is used as a really significant material source. The present emphasizes on using local material stocks and sources. Economical usage of sources is directed to recycling, circular economy and intense usage of sources. The process of this work will be done by the method of market research. Based on this, sales opportunities and prices of products will be considered. The investment project will be evaluated in terms of static and dynamic efficiency indicators. For the default method we can consider comparison which allows consideration of each researched phenomena and situations. The primary source of information for this research will be survey research, which allows to collect an increased number of opinions in a relatively short period of time. We expect that the conclusions will offer new acknowledgements in theoretical and practical equality about the possibilities of using efficiency analysis methods in assessing the impact of the use of new technologies in the field of forest production and ecosystem services. Also as their more intensive usage for securing permanent growth and increase of employment in mountain and foothill regions. We expect that results of the research can be applied in fields such as building, automotive industry, food industry and chemical industry.

Keywords: Sustainability, employment, recycling, ecosystem services, wood as a material.

Acknowledgments: *Project APVV 18-0520 Innovative methods of analysis of performances forestry-wood complex usage of principles of green growth is financed by "Agency for supporting researches and development in Bratislava", www.apvv.sk.*

Authors' address

IVETA HAJDÚCHOVÁ, *prof., Ing, PhD., Technical University in Zvolen, Faculty of forestry, T. G. Masaryka 24, Zvolen, Slovak republic, hajduchova@tuzvo.sk*

IVAN STRACHOŇ, *Ing., Technical University in Zvolen, Faculty of forestry, T. G. Masaryka 24, Zvolen, Slovak republic, ivan.strachon@seznam.cz*

ASSESSMENT OF SILVICULTURE AND TIMBER HARVESTING USING A LIFE CYCLE ASSESSMENT APPROACH

MIROSLAV HÁJEK, KAREL PULKRAB, RATNA CHRISMIARI
PURWESTRI, MARIE TICHÁ, MARTINA PADUCHOVÁ

Abstract

Human intervention stands as a significant contributor to forest disruption, given that the manner in which forests are handled dictates their vitality and health. However, the rotation period when managing the forest does not make it possible to carry out a life cycle assessment (LCA) in a short time as in other sectors. Bridging these issues requires knowledge of forestry management operations and the related information system. The aim of the paper is to investigate environmental impacts of the forestry sector in the Czech Republic according to the value chain corresponding to silvicultural and harvesting processes, without any further wood use options. The methodological procedure is based on the ISO 14040 and 14044 standards, using SimaPro. Three scenarios have been defined that differ in the method of harvesting. Scenario I - chainsaw felling, horse extraction. Scenario II - chainsaw (90% of hours worked) and harvester (10% of hours worked), tractor extraction. Scenario III - chainsaw (23 % of hours worked) and harvester (77 % of hours worked), extraction by a tractor with a winch. The results show that the maintenance of the forest road network holds a significant share of the overall environmental impact of forest management. Other significant consequences are associated with timber harvesting. These impacts vary considerably depending on the mechanical equipment used. The highest impact was recorded for the third scenario, still, it is practically the most often applied, as it is the most cost-effective. The results show the need to optimize forest management practices in the future both from an economic and environmental point of view. The work on the life cycle assessment was particularly challenging because the silviculture and harvesting of raw timber involve 20 production operations. Further analysis of other forest ecosystem services can be pursued.

Keywords: Harvesting technology, life cycle assessment, production chain, silviculture, timber harvesting, forest management.

Acknowledgments: Supported by the grant NUMBER funded by the AGENCY with the NAME of grant. Supported by the grant number No. CZ.02.1.01/0.0/0.0/16_019/0000803 by the Operational Program Research, Development and Education, the Ministry of Education, Youth and Sports of the Czech Republic [EVA4.0].

Authors' address

MIROSLAV HÁJEK, *doc. Ing., Ph.d., Czech University of Life Sciences Prague, Faculty of Forestry and Wood Sciences, Kamýcká 129, 165 00 Praha, Czech Republic, hajek@fld.czu.cz*

KAREL PULKRAB, *prof. Ing., CSc., Czech University of Life Sciences Prague, Faculty of Forestry and Wood Sciences, Kamýcká 129, 165 00 Praha, Czech Republic, pulkrab@fld.czu.cz*

RATNA CHRISMIARI PURWESTRI, *Ir., MSc., Dr.sc.agr., Czech University of Life Sciences Prague, Faculty of Forestry and Wood Sciences, Kamýcká 129, 165 00 Praha, Czech Republic, purwestri@fld.czu.cz*

MARIE TICHÁ, *Jan Evangelista Purkyně University, Faculty of the Environment, Pasteurova 3544/1, 400 96 Ústí nad Labem, Czech Republic, marie.ticha@lca-cz.cz*

MARTINA PADUCHOVÁ, *Bc., Czech University of Life Sciences Prague, Faculty of Forestry and Wood Sciences, Kamýcká 129, 165 00 Praha, Czech Republic, paduchova@lesy.czu.cz*

AGILITY OF THE WOOD-PROCESSING INDUSTRY BUSINESSES

MARTIN HALÁSZ, ANDREA JANÁKOVÁ SUJOVÁ

Abstract

Business Agility is a critical competitive advantage in today's business landscape, particularly during periods of rapid and unpredictable changes in the business environment. This study focuses on researching agility in the context of the wood processing industry and its significance for the sustainability and competitiveness of businesses within this sector. The primary objective of this contribution is to develop a comprehensive methodology for assessing the level of agility and a managerial model for building and maintaining agility in wood processing industry businesses. The research will concentrate on identifying key factors influencing the level of agility in the business environment and creating a managerial framework to help companies better adapt and respond to continually changing market conditions. This evaluation methodology and managerial model will serve as tools to enhance companies' ability to timely react to changes in technology, regulatory environments, and customer preferences. The research will result in a thorough analysis of agility in the wood processing industry and subsequently propose specific steps and measures to achieve a higher level of agility in individual businesses. Additionally, we will examine the impact of agility on the overall performance and competitiveness of companies in this industry. The development of this managerial model and the concept of agility on both strategic and operational levels will have a significant impact on the long-term sustainability and ability of wood processing industry businesses to thrive in a rapidly changing environment. This research will also serve as a template for other industrial sectors facing similar challenges associated with rapid changes and the need to develop their ability to effectively adapt to these changes. In summary, business agility is a significant factor for success and sustainability in today's dynamic business environment, and this research will contribute to a better understanding and implementation of agility within the wood processing industry and beyond.

Keywords: Agility, flexibility, change management, enterprise, business.

Acknowledgments: *This research is a partial result of the grant scientific project VEGA no. 1/0333/22 titled Business Agility.*

Authors' address

MARTIN HALÁSZ, *Ing.*, Technical University in Zvolen, Faculty of Wood Sciences and Technology, T. G. Masaryka 24, Zvolen, Slovak republic, xhalasz@tuzvo.sk

ANDREA JANÁKOVÁ SUJOVÁ, *doc. Ing., PhD.*, Technical University in Zvolen, Faculty of Wood Sciences and Technology, T. G. Masaryka 24, Zvolen, Slovak republic, sujova@tuzvo.sk

INTERNATIONAL-NATIONAL FOREST POLICY NEXUS: THE CASE OF SLOVAKIA

LENKA HALUŠKOVÁ, JAROSLAV ŠÁLKA

Abstract

The international forest policy is characterized by a fragmented and multi-sectoral nature. Biodiversity and climate change policies enforce demands on forests in line with their environmental interests. The United Nations Forum on Forests (UNFF) acts as the only global political process having forests as the main area of interest. The attempts to adopt a legally binding convention at the UNFF and its predecessors failed. Subsequently, the goals, principles and tools adoption and implementation depend largely on the actions of individual member states. The aim of the paper is to examine the UNFF from the perspective of national forest policy in Slovakia. In regard to the nature of research, the theoretical framework Policy Arrangement Approach is supplemented by the dimension of international-national mutual interaction from two perspectives, uploading and downloading. Slovakia is represented at the global level by a governmental delegate. As the personnel and financial support of the participation of the country are being undersized at the national level, the rate of activity in the process is highly connected to the personnel abilities and skills of representing agents. The Slovak delegation was responsible for presenting the European Union's positions in the final negotiations of the global strategic document and afterwards presided over the UNFF in a 2-year period from 2018. Despite the activity and success of Slovak representation, the reflection of the process in the national forest policy conditions is at a low rate. The information flow being the greatest potential of the UNFF at the national level impinges on misinterpretations in the context of the forestry sector and nature protection ongoing conflict.

Keywords: Interactions, Policy Arrangement Approach, Slovakia, United Nations Forum on Forests.

Acknowledgments: *We thank to Slovak Research and Development Support Agency for supporting the paper as a part of APVV-20-0429 project implementation.*

Authors' address

LENKA HALUŠKOVÁ, *PhDr., PhD., Technical University in Zvolen, Faculty of forestry, T. G. Masaryka 24, Zvolen, Slovak republic, lenka.halusкова@tuzvo.sk*

JAROSLAV ŠÁLKA, *prof. Dr. Ing., Technical University in Zvolen, Faculty of forestry, T. G. Masaryka 24, Zvolen, Slovak republic, salka@tuzvo.sk*

UPDATING THE INVESTMENT MULTIPLIER VALUE FOR THE EVALUATION OF ANNUAL PLANTING EXPENDITURES WITHIN THE SLOVAK FORESTRY

JÁN HOLÉCY

Abstract

The objective of the analysis carried out was to compare the change of a multiplicative effect generated by capital investments to afforestation under conditions of Slovakia in years 2019-2021. For this purpose, the time series of data about expenditures for new cultures planting and tending for the period 2009-2021 and data concerning the income of population in the same period divided to consumption and savings were analysed and evaluated. For the point estimate of Keynes multiplier mean value calculation, the observed values of marginal propensity to consume and marginal propensity to save have been used. The mean annual value of capital investments necessary for afforestation approaches amount $I = 66\,437\,000$ EUR. The observed value of multiplier for the period 2009-2019 adjusted by deflators was estimated on the level $M = 13.306648$ what means that the investment to afforestation obviously increased the income of population by the amount of $\Delta Y = 884\,043\,000$ EUR. The economic depression 2020-2021 brought about hyperinflation what decreased the marginal propensity of population to save, substantially. This resulted in increasing the multiplier up to the value $M = 25.960370$ what, at the same assumed investment to afforestation, induced the increment of population income up to the incredible amount $\Delta Y = 1\,724\,729\,000$ EUR, during the period 2009-2021.

Keywords: Multiplicative effect, Keynes multiplier, economic depression.

Acknowledgments: *This work was supported by the Slovak Research and Development Agency under the Contract no. APVV-19-0612.*

Authors' address

JÁN HOLÉCY, *prof. Ing., CSc., Technical University in Zvolen, Faculty of forestry, T. G. Masaryka 24, Zvolen, Slovak republic, holecy@tuzvo.sk*

SUPPORT FOR SMALL FOREST OWNERS IN THE CZECH REPUBLIC

PODPORA DROBNÝCH VLASTNÍKŮ LESŮ V ČR

VILÉM JARSKÝ

Abstract

Podpora hospodaření v lesích se na národní úrovni odvíjí od znění lesního zákona a je dále specifikována v Nařízení vlády č. 30/2014 Sb. Vedle příspěvků existuje na národní úrovni celá řada dalších podpor, například formou služeb, daňová podpora, podpora adaptace na klimatickou změnu nebo či prostřednictvím povinných plateb vlastníkům lesů. Cílem výzkumu v rámci projektu NAZV QK 21020371 bylo zjistit, nakolik je národní podpora poskytovaná ministerstvem zemědělství reálně směřována drobným vlastníkům lesů (DVL). Proto byl na MZe vznesen požadavek na zprostředkování dat, které by zaměřené na DVL obsahovalo, a to podle regionálního členění a dotačních titulů v letech 2018 – 2021. Dodané údaje byly následně transferovány k analýze do MS Access a vizualizovány v MS Excel. Data ukázala, že nelze přímo identifikovat velikost majetku konkrétního žadatele a tudíž jedinou možností bylo samostatně vyčlenit skupinu žadatelů, pro něž jsou zpracovány lesní hospodářské osnovy pro vlastníky do 50 ha (LHO). Vlastní analýza proběhla pro standardní příspěvky (Imise, Obnova, Ekologické technologie a Ochrana) a specifickou kompenzační platbu na zmírnění dopadů kůrovcové kalamity, která byla od roku 2019 vyplácena v souladu s Rámcovým programem pro řešení rizik a krizí v zemědělství. Z výsledků vyplývá, že 75 % všech příspěvků za sledované období směřovalo na kůrovcový příspěvek, přičemž DVL obdrželi 11 % z celkové částky. Největší podíl směřovaný DVL byl u příspěvku na obnovu, a to 12,4 %. Takový podíl odpovídá struktuře vlastnictví, na druhou stranu analýza ukázala, že DVL nejsou analyzovanými dotačními tituly nijak zvýhodněni.

Keywords: Podpora hospodaření, MS Access, MS Excel, ekologické technologie.

Authors' address

VILÉM JARSKÝ, *prof. Ing., Ph.D.*, Czech University of Life Sciences Prague, Faculty of Forestry and Wood Sciences, Kamýcká 129, Prague, Czech Republic, jarsky@fld.czu.cz

ANALYSIS OF PROGRAM STATEMENTS OF THE GOVERNMENT OF THE SLOVAK REPUBLIC FOR FORESTRY

PETER KICKO, ZUZANA DOBŠINSKÁ, JAROSLAV ŠÁLKA

Abstract

According to Article 113 of the Constitution of the Slovak Republic, the Government of the Slovak Republic is obliged to appear before the National Council of the Slovak Republic within 30 days of its appointment, present its program and request a vote of confidence. The content of the program statement of the government also includes a part dealing with agriculture and especially forestry. The main goal of the article is to find out how individual political parties from different political spectrum approach the creation of forestry policy. The methodology of the work was based on the analysis of documents, as a qualitative method used in social sciences. In the article, we analyze the government's program statements from 1992 to 2023. We discussed a total of 10 government program statements, three of which were prepared by HZDS and one by OĽANO as all-people's parties, two left-oriented parties SĽS and SMER SD, three right-wing parties focused on national policy SMK, MOST-HÍD and SNS and finally one program statement of the government implemented by the administrative government of the Slovak Republic. The most important priority of the political parties was the need to protect and improve forests and manage them in a sustainable way. The second most frequent priority was the support of the domestic woodworking industry, followed by ensuring the fulfillment of all forest ecosystem services, compensations for the restrictions of property rights, afforestation of non-forest areas and improving of anti-flood measures in forests. The article contributes to the scientific discourse on how individual political parties, considering their affiliation to the political spectrum, emphasize the forest policy which could lead to a better understanding of their interests and contribute to a better-informed decision making.

Keywords: Program statement, government, political party, forest policy, political ideology, forestry.

Acknowledgments: *We wish to thank the Agency for Research and Development for providing the funding under the contract no. APVV-20-0429.*

Authors' address

PETER KICKO, *Ing.*, Technical University in Zvolen, Faculty of forestry, T. G. Masaryka 24, Zvolen, Slovak republic, p.kicko@gmail.com

ZUZANA DOBŠINSKÁ, *Mgr., JUDr., PhD.*, Technical University in Zvolen, Faculty of forestry, T. G. Masaryka 24, Zvolen, Slovak republic, dobsinska@tuzvo.sk

JAROSLAV ŠÁLKA, *prof. Dr. Ing.*, Technical University in Zvolen, Faculty of forestry, T. G. Masaryka 24, Zvolen, Slovak republic, salka@tuzvo.sk

STRATEGY FOR THE DEVELOPMENT AND SUSTAINABILITY OF FAMILY BUSINESS IN THE WOODWORKING AND FURNITURE INDUSTRY IN THE SLOVAK REPUBLIC

MAREK KOSTÚR, MARIANA SEDLIAČIKOVÁ

Abstract

Based on the recently adopted legal definition of a family business in Slovakia, the objective of the research is to map and evaluate the current state of family business in the woodworking and furniture industry in Slovakia and to propose a comprehensive framework strategy for its development and sustainability. Mapping of the issue will be carried out in the form of empirical research. The results will be evaluated with mathematical-statistical methods. The output of the research will be used for a comprehensive framework development strategy with a focus on the sustainability of family business within the strategy of sustainability in industry, succession and sustainability of ecological character. The achieved results will be a prerequisite for the increase of the market competition of family businesses in the analysed sectors. The results of the research will apply an appropriate scientific level and it will be possible to use its results in theoretical and practical area, at the corporate as well as national level.

Keywords: Family business, family enterprises, woodworking and furniture industry, development strategy, sustainability.

Acknowledgments: *Supported by the Slovak Research and Development Agency, projects number APVV-21-0051, APVV-22-0238, and also project VEGA no. 1/0011/24.*

Authors' address

MAREK KOSTÚR, Ing., *Technical University in Zvolen, Faculty of Wood Sciences and Technology, T. G. Masaryka 24, Zvolen, Slovak republic, xkosturm@is.tuzvo.sk*

MARIANA SEDLIAČIKOVÁ, prof. Ing., PhD., *Technical University in Zvolen, Faculty of Wood Sciences and Technology, T. G. Masaryka 24, Zvolen, Slovak republic, sedliacikova@tuzvo.sk*

KEY COMPETITIVENESS FACTORS OF ENTERPRISES WITHIN WOOD PROCESSING INDUSTRY

PETRA LESNÍKOVÁ, KORNÉLIA JANOTKOVÁ

Abstract

Competitiveness is considered as the key to prosperity as well as to raising the standard of living. From the point of view of the business world, if an enterprise wants to be successful, it must gain competitive advantages before its competitors. The enterprise should create such competitive advantages which increase the competitiveness of the offered products and the competitiveness of the company on the given market. The aim of the paper is to identify the key competitiveness factors of enterprises within wood processing industry in the Slovak Republic. These factors are divided into macroeconomic, sectoral, and internal area. At the same time, emphasis is placed on current trends such as business agility, circular economy, and digital transformation. Business agility, as the ability to anticipate changes in the surrounding environment and respond effectively to them in today's world, is the key to success. Digital transformation also contributes to business success. The circular economy, focused on the use of available resources in an environmentally and economically sustainable manner, also currently plays an extremely important role. Competitiveness factors were analyzed by conducting a questionnaire survey on a sample of Slovak companies. The paper contains two research questions. The results show the existence of slight differences in the perception of the importance of competitiveness factors within individual sectors of wood processing industry. The conclusion provides a summary with highlight on current trends with potential of using in business world and for wood processing industry.

Keywords: Competitiveness, factors, agility, circular economy, wood processing industry.

Acknowledgments: *We wish to thank the project VEGA no. 1/0093/23 Research of the potential of the circular economy in the Slovak business environment in the production of innovative products based on recycled materials wood - rubber – plastic and scientific project VEGA 1/0333/22 Business agility - the ability to effectively adapt to unpredictable changes in the environment in the context of corona crisis during the COVID-19 pandemic.*

Authors' address

PETRA LESNÍKOVÁ, *Ing., PhD.*, Technical University in Zvolen, Faculty of Wood Sciences and Technology, T. G. Masaryka 24, Zvolen, Slovak republic, lesnikova@tuzvo.sk

KORNÉLIA JANOTKOVÁ, *Ing.*

CORPORATE CULTURE: A COMPARISON BETWEEN SLOVAKIA AND THE CZECH REPUBLIC

SILVIA LORINCOVÁ

Abstract

The aim of the research is to compare the perception of corporate culture in Slovakia and the Czech Republic. Emphasis is placed on identifying the opinions of employees working in the forestry-wood complex. Cameron and Quinn's model is used. It allows defining the content of corporate culture in terms of the degree of flexibility versus control and the degree of internal versus external focus. The Organizational Culture Assessment Instrument questionnaire is used. The questionnaire allows defining the corporate culture in a total of six areas. These are dominant characteristics, organizational leadership, management of employees, organization glue, strategic emphases, and criteria of success. Based on the methodology chosen, the level of corporate culture in partial areas is defined in the first step. Subsequently, the type of corporate culture that is applied in Slovakia and the Czech Republic is defined. At the same time, employee preferences for the future direction of individual areas of corporate culture are identified. The preferred type of corporate culture which should be applied in the horizon of 5 to 10 years in Slovakia and the Czech Republic is defined. The mathematical and statistical methods are used to verify the assumption that there exist differences in the perception of the current and preferred type of corporate culture in Slovakia and the Czech Republic. The results obtained are compared with previous research, which provides a comprehensive view of the perception of corporate culture.

Keywords: Corporate culture, Slovakia, Czech Republic, OCAI.

Acknowledgments: *Supported by the grant VEGA 1/0161/21 Dependence of the type of corporate culture on the industries of Slovak enterprises and selected socio-demographic factors, KEGA 012UCM-4/2022 Human Resources Management in a Digital World – A Bilingual (Slovak-English) Course Book with E-learning Modules based on Multimedia Content, and APVV-20-0004 The effect of an increase in the anthropometric measurements of the Slovak population on the functional properties of furniture and the business processes.*

Authors' address

SILVIA LORINCOVÁ, *doc. Ing., PhD., Technical University in Zvolen, Faculty of Wood Sciences and Technology, T. G. Masaryka 24, Zvolen, Slovak republic, silvia.lorincova@tuzvo.sk*

TREND IN THE DEVELOPMENT OF INNOVATION ACTIVITY IN WOOD PROCESSING INDUSTRY ENTERPRISES IN SLOVAKIA

TREND VÝVOJA INOVAČNEJ AKTIVITY PODNIKOV DREVOSPRACUJÚCEHO PRIEMYSLU NA SLOVENSKU

ERIKA LOUČANOVÁ

Abstract

The paper is aimed at the evaluation of the innovation activity of the wood processing industry in Slovakia. The situation is assessed from the point of view of innovation activity concentrating on three areas: Wood processing, Furniture production and Wood, pulp, paper and paper products production. The primary raw material of the wood processing industry is wood, which is the basic commodity of the forestry sector and thus represents the key element within the forestry-wood complex. The paper analysis the state of innovation activity of the wood processing industry in Slovakia compared to other industries. We analyze the comparative development of the innovative activity of the woodworking industry in Slovakia in the period from 2014 to 2020. The results identify to the state of innovation activity of the wood processing industry in Slovakia and its favorable and critical areas through the analysis.

Keywords: Innovation, innovation activity, wood processing industry, Slovakia.

Acknowledgments: *Autori ďakujú Vedeckej grantovej agentúre Ministerstva školstva, vedy, výskumu a športu SR a Slovenskej akadémii vied, grant číslo 1/0475/22 „Environmentálny spotrebiteľ a environmentálny občan“, grant číslo 1/0495/22, „Udržateľnosť hodnotových dodávateľských reťazcov a jej vplyv na konkurencieschopnosť podnikov lesnícko-drevárskeho komplexu“ a grant číslo 1/0494/22 „Komparatívne výhody odvetvia spracovania dreva pod rastúcim vplyvom princípov zelenej ekonomiky“.*

Authors' address

ERIKA LOUČANOVÁ, *doc. Ing., PhD., Technical University in Zvolen, Faculty of Wood Sciences and Technology, T. G. Masaryka 24, Zvolen, Slovak republic, loucanova@tuzvo.sk*

CRITICAL SUCCESS FACTORS FOR FURNITURE MANUFACTURING COMPANIES

KATARÍNA MARCINEKOVÁ

Abstract

Wooden furniture manufacturing is a vibrant and ever-evolving industry, marked by its complexity and the need for precise orchestration of various elements to ensure sustained success. In this exploration, we delve into the Critical Success Factors (CSFs) that serve as the linchpin for companies within this sector, each of which contributes significantly to their overall achievements. This article explores the key CSFs that play a pivotal role in the achievements of companies in this sector. Using a methodology that involves analyzing the company's mission and vision, we identified these CSFs. Subsequently, we determined the categories of key performance indicators (KPIs), allowing us to develop practical recommendations for industry professionals to enhance their operational performance and establish a strong market presence. We delve into the importance of sustainable relations with suppliers, high-quality input materials, zero-waste innovative design, efficient production processes, and process digitalization through Information and Communication Technology (ICT). By dissecting these CSFs, we unearth invaluable insights that empower wooden furniture manufacturers to enhance product quality, control costs, and seamlessly adapt to dynamic customer demands within the fiercely competitive market. This article thus provides a reservoir of actionable recommendations for industry professionals, catalyzing their journey towards operational excellence and a formidable presence within the industry.

Keywords: Critical Success Factors, Key Performance Indicators, Furniture manufacturing, Iron Triangle.

Acknowledgments: *We wish to thank the project VEGA no. 1/0093/23 Research of the potential of the circular economy in the Slovak business environment in the production of innovative products based on recycled materials wood - rubber – plastic and scientific project VEGA 1/0333/22 Business agility - the ability to effectively adapt to unpredictable changes in the environment in the context of corona crisis during the COVID-19 pandemic.*

Authors' address

KATARÍNA MARCINEKOVÁ, *Ing., PhD., Ph.D., Technical University in Zvolen,
Faculty of Wood Sciences and Technology, T. G. Masaryka 24, Zvolen, Slovak republic,
xmarcinekovak@tuzvo.sk*

A MATHEMATICAL MODEL OF FOREST INSURANCE AGAINST MULTIPLE RISK OCCURRENCE OF EXTREME DAMAGES

JAKUB MEDEK, JÁN HOLÉCY

Abstract

In context of ongoing climate change, destructive natural events on the forest lands occur more frequently than in the past. The consequences of ongoing climate change might significantly influence the economic productivity of forest enterprises. The forest property insurance is one of the effective economic actions facing the growing risk of the natural events occurrence. No mathematical model has been proposed to effectively cover the insurer against the climatic extremes so far. The main goal of the dissertation thesis is the mathematical formulation and testing of the forest property insurance model against the climatic extremes risk occurrence, which subsequently can cause extreme damages and the insurer insolvency. The solution working tools are the methods and procedures of actuarial mathematics and the extreme values theory. Information about the destructive natural events risk occurrence will be provided by a statistical analysis of data time series. The design and economic analysis of forestry projects for the commercial trees silviculture will be supported by the SIBYLA TRIQUETRA tree growth simulator results. The dissertation thesis results can contribute to the financial stability strengthening of the enterprises that manage forest land under the specific risk of management presence during the ongoing climate change conditions. Research results into forest insurance options against the risk of extreme damages occurrence can also serve as a basis for the forestry policy decision-making. The statistical model of extreme destructive events occurrence can be used as an input for an insurance model, which, among other economic measures, can become an effective tool for forestry adaptation to the growing specific management risk.

Keywords: Extremes, insurance, destructive natural events, risk.

Acknowledgments: *This work was supported by the Slovak Research and Development Agency under the Contract no. APVV-19-0612.*

Authors' address

JAKUB MEDEK, *Ing.*, Technical University in Zvolen, Faculty of forestry, T. G. Masaryka 24, Zvolen, Slovak republic, xmedek@is.tuzvo.sk

JÁN HOLÉCY, *prof. Ing., CSc.*, Technical University in Zvolen, Faculty of forestry, T. G. Masaryka 24, Zvolen, Slovak republic, holecy@tuzvo.sk

A CONSUMER PERSPECTIVE FOR VENISON MARKET IN THE CZECH REPUBLIC CONTEXT

MARTIN NĚMEC, MARCEL RIEDL, VILÉM JARSKÝ

Abstract

This paper provides insights into the evolving landscape of game meat consumption in the Czech Republic between 2021 and 2023. Drawing from empirical research, it analyses consumer preferences, market segments, and factors constraining game meat consumption. The introduction highlights the significance of game meat as an integral component of forest management, emphasising its role in mitigating harm to forest regeneration caused by overbrowsing. Hunting is presented as a potential solution, albeit one hindered by economic challenges, primarily low purchase prices for game meat. The study calls for examining the game meat production value chain to optimise economic incentives, especially for forest owners and hunting associations. The results section presents a comprehensive analysis of consumer attitudes and behaviours, highlighting trends in cost concerns and availability challenges. Socio-economic segmentation demonstrates increased non-consumption among higher-income classes. The middle-income group is the most price-sensitive, while even the highest-income classes exhibit substantial non-consumption. In conclusion, the study underscores the complexity of factors influencing game meat consumption, calling for tailored marketing strategies. It identifies three distinct market segments based on consumer preferences: Luxury Goods, Commodity Goods, and Inferior Goods. These findings provide valuable insights for stakeholders in the game meat industry to adapt their strategies and promote sustainable consumption..

Keywords: Venison, game meat, value chain, venison marketing, market segmentation.

Acknowledgments: *We wish to thank the kind financing of the IGA 2022 Project ID A_33_22, provided by the University of Life Sciences Prague.*

Authors' address

MARTIN NĚMEC, *Ing. et Ing.*, Czech University of Life Sciences Prague, Faculty of Forestry and Wood Sciences, Kamýcká 129, Prague, Czech Republic, nemecmartin@fld.czu.cz

MARCEL RIEDL, *RNDr., CSc.*, Czech University of Life Sciences Prague, Faculty of Forestry and Wood Sciences, Kamýcká 129, Prague, Czech Republic, riedl@fld.czu.cz

VILÉM JARSKÝ, *prof. Ing., Ph.D.*, Czech University of Life Sciences Prague, Faculty of Forestry and Wood Sciences, Kamýcká 129, Prague, Czech Republic, jarsky@fld.czu.cz

REBIRTH OF RESOURCES: PRODUCTION FROM WASTE WOOD AND PLASTIC

ZNOVUZRODENIE ZDROJOV: VÝROBA Z ODPADOVÉHO DREVA A PLASTU

MÁRIA OSVALDOVÁ, MAREK POTKÁNY

Abstract

The production of three-layer chipboard from waste plastic and waste spruce chips is an innovative approach to the circular economy that could improve the sustainability of the woodworking industry. The paper deals with the production process of wood-plastic boards in the laboratory conditions of the Technical University in Zvolen from waste materials. The aim of the work was to achieve the required values of the STN EN standard for P1 type boards. It also examined the influence of the type of plastic waste on the selected physical-mechanical properties of the investigated composite. The production methodology was designed and implemented based on STN EN chipboard standards. The production involves a mixture of waste plastic from end-of-life vehicles and spruce wood chips, followed by pressing and carving of boards. Selected physical and mechanical properties of these boards were measured and compared with STN standards. The results of the measurements showed that the produced three-layer wood-plastic boards met STN EN standards regarding required parameters. The assumption that the type of plastic waste is not a significant factor in physical and mechanical properties was confirmed. This research demonstrates the potential for sustainable innovation in the woodworking industry. It supports the transition to a circular economy through the efficient use of waste materials. Such an approach can help reduce the environmental impact of industry and support the principles of circular economy and sustainable development.

Keywords: Circular economy, wood-plastic composite, wood waste, polymer waste.

Acknowledgments: *This contribution is a part of the work on the project VEGA no. 1/0093/23 “Research of the potential of the circular economy in the Slovak business environment in the production of innovative products based on recycled materials wood - rubber – plastic“, and project UNIVNET “University Research Association for Waste Recovery, especially from the Automotive Industry”.*

Authors' address

MÁRIA OSVALDOVÁ, *Ing.*, Technical University in Zvolen, Faculty of Wood Sciences and Technology, T. G. Masaryka 24, Zvolen, Slovak republic, xosvaldova@is.tuzvo.sk

MAREK POTKÁNY, *doc. Ing., PhD.*, Technical University in Zvolen, Faculty of Wood Sciences and Technology, T. G. Masaryka 24, Zvolen, Slovak republic, potkany@tuzvo.sk

ASSESSMENT OF ECONOMIC IMPACTS OF FOREST MANAGEMENT IN PROTECTED AREAS IN SR ON FOREST INDUSTRIES

JÁN PAROBEK, HUBERT PALUŠ, MICHAL DZIAN

Abstract

The main objective of the study is to evaluate the economic impacts of forest management in protected areas of the Slovak Republic on forestry and related industries that use forest products. Using new knowledge and procedures to assess the development of forest ecosystems in protected areas and proposals for their differentiated management, the project quantifies a number of economic, social and environmental impacts of applying bans and restrictions in forest ecosystems of protected areas. As part of the study, an evaluation of the current state and development of the structure of forest stands in the protected areas will be elaborated using quantitative indicators suitable for the assessment of biodiversity based on data from summary information on forest condition, statistical national forest inventory and remote sensing methods. The next section proposes the principles of differentiated forest management in protected areas with regard to selected criteria and carbon balance in forest ecosystems and quantifies the impacts of forest use restrictions, specifically the effects of changes in wood volume, production structure, wood flows, carbon balance in forests and wood products, depending on the type of management, on the forestry and forest based sector and the society. Based on economic methods for evaluating and statistical testing of the effectiveness of management of individual types of protected areas, their optimal area and management will be proposed. The study proposes specific research solutions for the issues that need to be solved in order to gradually eliminate the existing differences in opinions and contradictions regarding the care of the forests in protected areas. The results of the project will contribute to the creation of the desired balance between nature protection and nature-friendly forest management in protected areas, to the preservation and improvement of their biodiversity.

Keywords: Forest management, economic impacts, forest ecosystems, forestry and forest based industry.

Acknowledgments: *Supported by the grant APVV-20-0294 funded by the Slovak Research and Development Agency.*

Authors' address

JÁN PAROBEK, *doc. Ing., PhD., Technical University in Zvolen, Faculty of Wood Sciences and Technology, T. G. Masaryka 24, Zvolen, Slovak republic, parobek@tuzvo.sk*

HUBERT PALUŠ, *doc. Ing., PhD., Technical University in Zvolen, Faculty of Wood Sciences and Technology, T. G. Masaryka 24, Zvolen, Slovak republic, palus@tuzvo.sk*

MICHAL DZIAN, *Ing., PhD., Technical University in Zvolen, Faculty of Wood Sciences and Technology, T. G. Masaryka 24, Zvolen, Slovak republic, dzian@tuzvo.sk*

ECONOMIC AND FINANCIAL INSTRUMENTS WITHIN THE FORESTRY SECTOR IN THE CZECH REPUBLIC

MICHAELA PERUNOVÁ, JARMILA ZIMMERMANNNOVÁ

Abstract

Greenhouse gas concentrations in the atmosphere have been increasing over time and are negatively disrupting the ecological limits of the planet. The ongoing process to reach a more sustainable performance of economy and society implies multiple agendas, such as circular economy and bioeconomy. The forest bioeconomy has an important task to serve in mitigating climate change. The principal purpose of this contribution is to carry out an assessment of the role of economic and financial instruments of climate change policy within the forestry sector in the Czech Republic. The authors used the following methods to meet the research targets: literature review, data analysis, correlation analysis and regression analysis. Firstly, forest land models were created and run. Regarding the results, a statistically significant negative relationship between forest land and subsidies under the Rural Development Programme and the price of European Union Allowances were observed. On the other hand, a statistically significant positive relationship was found between forest land and environmental investments in biodiversity. Secondly, wood biomass production models were created and run. According to results, a statistically significant positive relationship was detected between wood biomass production and various instruments, especially the price of European Union Allowances, revenues from environmental taxes in the forestry sector, financial obligations of the state under the Forestry Act, financial contributions and subsidies under the Rural Development Programme. An effective financial promotion is a significant element for the future growth and development of the Czech bioeconomy, not just in forestry. At the same time, finding innovative ways to manage forest resources sustainably is one of the most pressing challenge.

Keywords: Financial and economic instruments, forestry, circular economy, forest bioeconomy, Czech Republic.

Acknowledgments: *This contribution would not have been possible without the support of the Czech University of Life Sciences Prague, Faculty of Forestry and Wood Sciences.*

Authors' address

MICHAELA PERUNOVÁ, *Ing.*, Czech University of Life Sciences Prague, Faculty of Forestry and Wood Sciences, Kamýcká 129, Prague, Czechia, perunova@fld.czu.cz

JARMILA ZIMMERMANNNOVÁ, *doc. Ing., Ph.D.*, Palacký University, Faculty of Health Sciences, Science and Research Centre, Hnevotínská 976/3, Olomouc, Czechia, jarmila.zimmermannnova@upol.cz

THE USE OF CONTROLLING IN FAMILY BUSINESSES OF THE WOODWORKING AND FURNITURE INDUSTRY

NATÁLIA POLÁKOVÁ, MARIANA SEDLIAČIKOVÁ

Abstract

A survey into the field of the utilization of controlling in family businesses operating in the woodworking and furniture industry in Slovakia, as a unique connection of these three areas, has not been carried out yet. The aim of the paper is to identify the state of the utilization of controlling in family businesses operating in the woodworking and furniture industry in comparison with non-family businesses. The mapping of the issue was carried out by a questionnaire-based inquiry method. The assumed hypotheses were evaluated by Test a hypothesis about a population proportion and Test a hypothesis about two population proportions. Based on the findings, it can be concluded, that most of the woodworking and furniture enterprises in Slovakia belong to family businesses and they tend to use controlling to a lesser extent compared to non-family businesses. On the other hand, majority of them agreed in the opinion, that a framework concept of controlling as well as method of its implementation can help these enterprises to improve their competitiveness, performance, financial health and consequently sustainability. The paper presumes to make both theoretical and practical contributions. The study identified the state of the utilization of controlling in Slovak family businesses within the woodworking and furniture industry compared to non-family businesses. This knowledge can be valuable for practitioners and researchers in the field.

Keywords: Controlling, family businesses, non-family businesses, woodworking and furniture industry.

Acknowledgments: *We wish to thank Slovak Research and Development Agency, projects number APVV-21-0051, APVV-22-0238, and also project VEGA no. 1/0011/24.*

Authors' address

NATÁLIA POLÁKOVÁ, *Ing.*, Technical University in Zvolen, Faculty of Wood Sciences and Technology, T. G. Masaryka 24, Zvolen, Slovak republic, xpolakovan@is.tuzvo.sk

MARIANA SEDLIAČIKOVÁ, *prof. Ing., PhD.*, Technical University in Zvolen, Faculty of Wood Sciences and Technology, T. G. Masaryka 24, Zvolen, Slovak republic, sedliacikova@tuzvo.sk

THE INFLUENCE OF NATURAL DRYING ON LOGISTIC PROCESSES OF SUPPLY IN ENTERPRISES OF THE WOOD PROCESSING INDUSTRY

ĽUBICA SIMANOVÁ

Abstract

The aim of the article is the summarization of scientific and practical knowledge from the logistics of supply and storage processes in the enterprises of the wood processing industry. The specifics of wood raw material and the characteristics of its types of place increased demands on the logistics processes of wood processing enterprises and on determining the number of technological stocks of individual wood assortments. The research part presents a more comprehensive view of the process of natural drying of sawn wood, time, and volume non-uniformity of dried sawn wood in individual months of the year and their impact on other processes such as supply, storage, and distribution of sawn wood. The article used the methodologies for calculating individual types of stocks according to Rosová et. al. (2010), methodology for determining the length of natural drying of oak lumber for the calculation of technological (seasonal) stock according to Trebula and Klement (2002) and mathematical regulation. The process of natural drying of sawn wood is time and economically demanding, influenced by climatic conditions and requirements for its further use.

Keywords: Logistic process, supply, natural drying, wood processing industry.

Acknowledgments: *We wish to thank VEGA Grant, No. 1/0333/22 Business agility - the ability to effectively adapt to unpredictable changes in the environment in the context of corona crisis during the COVID-19 pandemic and The Slovak Research and Development Agency, No. APVV-20-0004 The Effect of an Increase in the Anthropometric Measurement of the Slovak Population on the Functional Properties of Furniture and the Business Processes.*

Authors' address

ĽUBICA SIMANOVÁ, *Ing., PhD., Ph.D., Technical University in Zvolen, Faculty of Wood Sciences and Technology, T. G. Masaryka 24, Zvolen, Slovak republic, simanova@tuzvo.sk*

BASIS FOR DETERMINING THE ECONOMICS OF FOREST PROTECTION EMERGENCY IN THE CZECH REPUBLIC

ROMAN SLOUP, ROMAN DUDÍK

Abstract

This issue is a response to the ongoing bark beetle calamity in the Czech Republic and the high risk of forest disturbance related to climate change. The aim is to create a system of interdependent measures capable of responding to the risks of a calamity situation in a timely, targeted and effective manner, considering individual forest owners' capabilities. At the same time, it will assess one of the realistic options for state involvement, the so-called 'forest protection alert', in terms of its effectiveness and its impact on existing forestry linkages. It will propose alternative models of a system that would allow the mobilization of state-owned harvesting capacities in the event of a calamity emergency. Different levels of centralization or decentralization of the system, a combination of state and private resources, etc. will be considered. Formulating the basis for a "forest protection standby", i.e. a flexible and efficient combination of the existing public procurement system for the use of harvesting technologies and state-owned and operated capacities. Several organizational scenarios will be formulated, including the economic impacts of each option. The creation of standby harvester hub capacities only at state-owned enterprises is considered. Creating standby harvester capacities for non-state owners seems problematic (even with the use of, let alone subsidies). The results of the solution will serve as a basis for the strategic decision of the state on whether and how many emergency harvester nodes to acquire.

Keywords: Forest protection standby, standby harvester capacities, forest protection emergency.

Acknowledgments: *Supported by the grant QK23020039 funded by the NAZV with the NAME of grant Basis for determining the economics of forest protection emergency in the Czech Republic.*

Authors' address

ROMAN SLOUP, *doc. Mgr. Ing. Ph.D.*, Czech University of Life Sciences Prague, Faculty of Forestry and Wood Sciences, Kamýcká 129, Praha – Suchbát, Czech Republic, sloup@fld.czu.cz

ROMAN DUDÍK, *doc. Ing. Ph.D.*, Czech University of Life Sciences Prague, Faculty of Forestry and Wood Sciences, Kamýcká 129, Praha – Suchbát, Czech Republic, dudik@fld.czu.cz