

SS. CYRIL AND METHODIUS UNIVERSITY IN SKOPJE





# BOOK OF ABSTRACTS

### INTERNATIONAL SCIENTIFIC CONFERENCE



15–16TH JUNE 2022. SKOPJE, REPUBLIC OF NORTH MACEDONIA





#### Ss. Cyril and Methodius University in Skopje Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering North Macedonia

#### **75 YEAR ANNIVERSARY**

International Scientific Conference: "Better Forestry, for Better Forests, for a Better Planet"

## **BOOK OF ABSTRACTS**

**15 - 16<sup>th</sup> June 2022** Skopje, Republic of North Macedonia





CIP - Каталогизација во публикација Национална и универзитетска библиотека "Св. Климент Охридски", Скопје

378.096:630\*(497.711)"1947/2022"(060.91) 630\*(063)(048.3)

INTERNATIONAL scientific conference: "Better Forestry, for Better Forests, for a Better Planet" (2022 ; Skopje)

Book of abstracts / International scientific conference: "Better Forestry, for Better Forests, for a Better Planet", June 15-16th 2022, Skopje, Republic of North Macedonia; [editor Bozhin Trendafilov]-Skopje: Hans Em Faculty of forest sciences, landscape architecture and environmental engineering, 2022. - [85] ctp.; 25 cm

ISBN 978-9989-132-24-7

а) Факултет за шумарски науки, пејзажна архитектура и екоинженеринг "Ханс Ем" (Скопје) -- 1947-2022 -- Јубилеи б) Шумарство -- Собири -- Апстракти

COBISS.MK-ID 57574661





#### Citation

Book of abstracts of the International Scientific Conference "Better forestry, for better forests, for a better planet", Skopje, 15 – 16<sup>th</sup> June, 2022. Ss. Cyril and Methodius University in Skopje - Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering.

#### Publisher

Ss. Cyril and Methodius University in Skopje Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering Dr. Kiril Sotirovski, Dean

Editor Bozhin Trendafilov, MSc

#### Technical editing and design

Anastazija Dimitrova, MSc Dr. Bojan Simovski Dr. Kiril Sotirovski

#### Cover page

Boris Najdovski, MSc Dr. Kiril Sotirovski

Copies: 150

#### Printed by

Ars Lamina, Skopje

#### Conference web page

http://sf.ukim.edu.mk/75hef.htm

#### Publisher's address

Ss. Cyril and Methodius University in Skopje Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering UI. 16 Makedonska brigada br. 1 (P.O. box 235) MK-1000 Skopje Republic of North Macedonia e-mail: <u>sumarski@sf.ukim.edu.mk</u> e-address: <u>www.sf.ukim.edu.mk</u>





**Scientific committee** of the International Scientific Conference "Better Forestry, for Better Forests, for a Better Planet" - June 15-16th, 2022. Skopje, Republic of North Macedonia

Jürgen Blaser, Bern University of Applied Sciences BFH, Switzerland Sjur Baardsen, Norwegian University of Life Sciences, Oslo, Norway Ivan Iliev, University of Forestry, Sofia, Bulgaria

**Ratko Ristić**, University of Belgrade, Faculty of Forestry, Serbia

**Saša Orlović**, University of Novi Sad, Institute of Lowland Forestry and Environment, Serbia

**Simone Prospero**, Swiss Federal Institute for Forest, Snow and Landscape Research WSL,Birmensdorf, Switzerland

**Tomislav Dubravac**, Croatian Forest Research Institute, Zagreb, Croatia **Milko Milev**, University of Forestry, Sofia, Bulgaria

Andrej Bončina, University of Ljubljana, Biotechnical Faculty, Slovenia Jusuf Musić, University of Sarajevo, Faculty of Forestry, Bosnia and Herzegovina Dijana Vuletić, Croatian Forest Research Institute, Zagreb, Croatia

**Leopold Poljaković-Pajnik**, University of Novi Sad, Institute of Lowland Forestry and Environment, Serbia

Petar Zhelev, University of Forestry, Sofia, Bulgaria

Špela Pezdevšek Malovrh, University of Ljubljana, Biotechnical Faculty, Slovenia Besim Balić, University of Sarajevo, Faculty of Forestry, Bosnia and Herzegovina Ahmet Yeşil, Istanbul University-Cerrahpaşa, Faculty of Forestry, Turkey

Sezgin Ayan, Kastamonu University, Forestry Faculty, Turkey

**Ciprian Palaghianu**, Ştefan cel Mare University of Suceava, Forestry Faculty, Romania

**Ljiljana Došenović**, University of Banja Luka, Faculty of Forestry, Bosnia and Herzegovina

**Mirjana Sekulić**, University of Novi Sad, Faculty of Technical Sciences, Serbia **Marilena Idžojtić**, University of Zagreb, Faculty of Forestry and Wood Technology, Croatia

**Robert Brus**, University of Ljubljana, Biotechnical Faculty, Slovenia **Said Laaribya**, Ibn Tofail University in Kenitra, Morocco

**Igor Poljak**, University of Zagreb, Faculty of Forestry and Wood Technology, Croatia **Ömer Erincik**, Aydın Adnan Menderes University, Turkey

Marin Ježić, University of Zagreb, Faculty of Science, Croatia

Marius Dimitrov, University of Forestry, Sofia, Bulgaria

Marko Lovrić, European Forest Institute, Joensuu, Finland

**Dejan Stojanović**, University of Novi Sad, Institute of Lowland Forestry and Environment, Serbia

Serap Acikgoz, Aydın Adnan Menderes University, Turkey

Hristo Mihailov, University of Forestry, Sofia, Bulgaria

Milorad Danilović, University of Belgrade, Faculty of Forestry, Serbia

Miloš Beuković, University of Novi Sad, Faculty of Agriculture, Serbia

Vladan Ivetić, University of Belgrade, Faculty of Forestry, Serbia





Silvija Krajter Ostoić, Croatian Forest Research Institute, Zagreb, Croatia Duško Cirovic, University of Belgrade, Faculty of Natural Sciences, Serbia Zoran Popović, University of Belgrade, Faculty of Agriculture, Serbia Nataša Lovrić, European Forest Institute, Joensuu, Finland

**Dana Dina Kolevska**, Ss. Cyril and Methodius University in Skopje; Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering; Skopje, North Macedonia

**Makedonka Stojanovska**, Ss. Cyril and Methodius University in Skopje; Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering; Skopje, North Macedonia

**Jasminka Rizovska Atanasovska**, Ss. Cyril and Methodius University in Skopje; Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering; Skopje, North Macedonia

**Irena Papazova-Anakieva**, Ss. Cyril and Methodius University in Skopje; Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering; Skopje, North Macedonia

**Vladimir Maletić**, Ss. Cyril and Methodius University in Skopje; Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering; Skopje, North Macedonia

**Ivan Blinkov**, Ss. Cyril and Methodius University in Skopje; Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering; Skopje, North Macedonia

**Sterja Načeski**, Ss. Cyril and Methodius University in Skopje; Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering; Skopje, North Macedonia

**Nikola Nikolov**, Ss. Cyril and Methodius University in Skopje; Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering; Skopje, North Macedonia

**Pande Trajkov**, Ss. Cyril and Methodius University in Skopje; Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering; Skopje, North Macedonia

**Kole Vasilevski**, Ss. Cyril and Methodius University in Skopje; Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering; Skopje, North Macedonia

**Kiril Sotirovski**, Ss. Cyril and Methodius University in Skopje; Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering; Skopje, North Macedonia

**Jane Acevski**, Ss. Cyril and Methodius University in Skopje; Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering; Skopje, North Macedonia

**Ljupčo Nestorovski**, Ss. Cyril and Methodius University in Skopje; Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering; Skopje, North Macedonia





**Zdravko Trajanov**, Ss. Cyril and Methodius University in Skopje; Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering; Skopje, North Macedonia

**Vlatko Andonovski**, Ss. Cyril and Methodius University in Skopje; Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering; Skopje, North Macedonia

**Nikolčo Velkovski**, Ss. Cyril and Methodius University in Skopje; Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering; Skopje, North Macedonia

**Ivan Minčev**, Ss. Cyril and Methodius University in Skopje; Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering; Skopje, North Macedonia

**Bojan Simovski**, Ss. Cyril and Methodius University in Skopje; Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering; Skopje, North Macedonia

**Mihajlo Risteski**, Ss. Cyril and Methodius University in Skopje; Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering; Skopje, North Macedonia





**Organizing committee** of the International Scientific Conference "Better Forestry, for Better Forests, for a Better Planet" - June 15-16th, 2022. Skopje, Republic of North Macedonia

# From Ss. Cyril and Methodius University in Skopje; Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering:

Dr. Kiril Sotirovski Dr. Makedonka Stojanovska Dr. Pande Trajkov Dr. Ivan Minchev Dr. Bojan Simovski Dr. Mihajlo Risteski Viktorija Brndevska Stipanović, MSc Boris Najdovski, MSc Vladimir Tanovski, MSc Bozhin Trendafilov, MSc Kristijan Cokovski, MSc Anastazija Dimitrova, MSc Blagoj Shurbevski, MSc

Dr. Katerina Bandzo-Oreshkovic (Ss. Cyril and Methodius University in Skopje, Agricultural Institute, North Macedonia) Dejan Mandzuovski, MSc (Department of forestry, hunting and design, PE "National Forests", North Macedonia) Jakob Kiprovski, BSc





#### Contents

Modelling of potential distribution of the atlas cedar ( <i>Cedrus atlantica</i> Manetti) in Morocco
Mycodiversity in the coniferous communities of Shar Mountain - Literature review of macrofungi in coniferous forest on mountain Shar Planina in North Macedonia
Morphological variability of bulbs, fruits, and seeds of the genus <i>Galanthus</i> L. (Amaryllidaceae) in Serbia
First report of <i>Cryphonectria carpinicola</i> in the Balkans and <i>Cryphonectria radicalis</i> in Bulgaria
The role of Tharandt Botanic Garden in search for alternative tree species in climate change
Correct planning and proper landscape design - key to quality urban life Case Study: Macedonia Park, Skopje, North Macedonia
Genetic differentiation of hungarian oak ( <i>Quercus frainetto</i> Ten.) Populations in Serbia based on morphological characteristics of acorns and seedlings
Prevention of Waste-Contaminated Forests by ICT, standards and legislation 19
Accuracy assessment of supervised classification employing the MLC and RF algorithms on Sentinel2 image for the preparation of a vegetation map in the eastern part of the Republic of North Macedonia
Data on Distribution and Habitat Preferences of Edible Truffles in the Republic of North Macedonia
Urban forestry and disaster relief: The importance of urban forestry and greenery in the 1963 post-earthquake reconstruction of Skopje
The role of urban trees in reducing land surface temperature
Conservation strategy targeting priority species of the Balkans: the example of the INTERREG programme CONSE-PP
Collection of experiences from 25 years work on seed propagation of allochthonous dendroflora at the Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering in Skopje and the surrpoundings
Analysis of the influence of CoVid-19 pandemic on residents' perception on the importance of the urban greenery on quality of life
Mapping and evaluation of cultural ecosystem services in City Park Skopje 29





Protected areas: History of their evolution and management practices
Policy support measures in forestry and nature conservation for climate change governance
Importance of NWFPs for good forest governance
Intrapreneurship as a way for employee innovation behaviour in state-owned forest enterprises
Identifying runoff sensitivity in forests and seminatural areas; Case study: Skopska Crna Gora
Development of soil erosion and desertification maps of Republic of North Macedonia
Natural revegetation and overgrowing on forest roads in beech stands and under mountainous conditions
Contribution of forest certification to sustainable development goals
Real growth rate and age structure of Brown hare ( <i>Lepus Europaeus</i> P.) at the Serbian hunting grounds40
The tradition of sustainable management in lowland forests of Croatia
Spatial optimization for forest planning43
Recent changes in the population structure of <i>Cryphonectria parasitica</i> in Turkey
Detected changes of population structure within a <i>Cryphonectria parasitica</i> population at the site Osoj, North Macedonia, during a time-span of over two decades
The effect of temperature on the growth of the phytopathogenic fungus <i>Ophiostoma novo-ulmi</i>
Pedunculate oak ( <i>Quercus robur</i> L.) phenological varieties exhibited a different response and recovery potential to extreme drought in Serbia
Forest resource dynamic in Republic of North Macedonia in the period from 1961 to 2016
Urban hedges–an important green element in the system of landscape design. 50
Criteria for Evaluation of Urban Green Spaces: A Case of Macedonian Cities 52
Soil erosion and Torrential Flood Prevention: Curriculum Development at the Universities of Western Balkan Countries54
Dendroecology analysis of Macedonian pine ( <i>Pinus peuce Gris</i> .) radial growth and climate relationships at National Park Pelister in North Macedonia





Influence of elevation on some structural elements of Macedonian pine ( <i>Pinus peuce</i> Gris.) stands in National Park Pelister in North Macedonia
Human dimension of large carnivores' management and conservation in Serbia60
Spatial structural characteristic of Macedonian pine ( <i>Pinus peuce Gris</i> .) forest in National Park Pelister in North Macedonia61
Analysis of Croatian <i>Ophiostoma novo-ulmi</i> populations – insight into changes occurring over time
The valorization and valuation of historical park - Topcider in Belgrade
Current status of forest soil mapping in Serbia65
Nationwide fuel models structure analysis using discrete ALS data in Portugal . 66
<i>Corythucha arcuata</i> (Say) predilection research results in 70 pedunculate oak clones ( <i>Quercus robur</i> L.)
Growth of scots pine ( <i>Pinus Sylvestris</i> L.) in international provenance tests in Žepče, Bosnia and Herzegovina68
The role of site ecology into planning and designing of the conifers seed orchards in Serbia
Diversity of pedunculate oak ( <i>Quercus robur</i> L.) in Serbia based on phenotypic traits
Possibilities of hybrid drives of forest vehicles71
Cooperation and networking of non-wood forest products-based enterprises in the Topličko and Moravsko forest region
Forests in women's hands: Activities on the development of the National action plan for Serbia73
In situ conservation of rare and endangered forest tree species at the locality "Jelovarnik" - National Park "Kopaonik" in Serbia
Influence of tree crown status on the growth of common beech ( <i>Fagus sylvatica</i> L.) in Croatia
Interrelations of various tree vitality indicators on a common beech ( <i>Fagus sylvatica</i> L.) plot
Conservation of forest fruit trees gene pool in the protected area "Košutnjak forest" (Serbia)
Climate changes' impact on management and activities in protected areas: Managers' and Stakeholders' attitudes79





The impact of pest insects and fungal diseases on the dieback of pine forests ir the R. of N. Macedonia	
Bioecological characteristics of two mass outbreaks of <i>Altica Querceorum</i> foud in the R of N. Macedonia	
Effect of Wildfire on Forest Soils in Maleshevo–Pijanec Region	83





## Cooperation and networking of non-wood forest products-based enterprises in the Topličko and Moravsko forest region

Jelena Nedeljković<sup>1</sup>\*, Mihajlo Dimitrijević<sup>1</sup>, Zoran Poduška<sup>2</sup>, Dragan Nonić<sup>1</sup>

<sup>1</sup> University of Belgrade - Faculty of Forestry, Belgrade, Serbia

<sup>2</sup> Institute of Forestry, Belgrade, Serbia

\* Corresponding author: jelena.nedeljkovic@sfb.bg.ac.rs

#### Abstract:

Mutual cooperation and networking are crucial for small and medium enterprises (SMEs) to achieve a competitive advantage in each economic sector. Cooperation is a particularly important for small and medium enterprises involved in non-wood forest products (NWFPs) business, due to its specifics (e.g. dependence on natural resources and weather conditions; perishable products, etc.). This research aims to investigate the respondents' attitudes towards the cooperation with NWFPs pickers, other enterprises and institutions, business networking, and benefits expected from membership in business associations. A study was conducted in the Topličko and Moravsko forest regions (both located in the region of Southern and Eastern Serbia). Data collection was conducted using face to face survey with representatives of 28 NWFPs-based enterprises in March 2022. The research results indicate that almost all enterprises (96.3%) have cooperation with the local community. Respondents are mostly satisfied with the cooperation with NWFPs pickers (92.8%) and local community (92.3%). All SMEs cooperate with other enterprises. The most common forms of cooperation with other enterprises are buying raw materials (57.1%) and selling products (92.9%). The majority of respondents (85.7%) stated that they cooperate with public institutions in charge of NWFPs in Serbia, mostly regarding permits for NWFPs collection and export. Around  $\frac{1}{2}$  of them (56.5%) rate this cooperation as "good" and "very good". Only 32.1% of analysed enterprises are a member of a business association. Still, 77.8% of those who are not a member, are interested in joining an association. Almost all respondents (96.4%) see the association as one of the opportunities to improve their business. They expect several benefits from membership in a business association and the most common benefits they expect are: "joint selling on domestic market", "joint export" and "NWFPs market information". All respondents believe that networking with other enterprises can bring financial benefits to their business.

**Keywords**: small and medium enterprises; non-wood forest products; cooperation; business networking



SS. CYRIL AND METHODIUS UNIVERSITY IN SKOPJE

HANS EM FACULTY OF FOREST SCIENCES LANDSCAPE ARCHITECTURE AND ENVIRONMENTAL ENGINEERING

ILIYMAPCKN HAYKN FACULTY ENVRONMENTAL ENGINEERING KOOTJE XAHC ENGINEERING FOREST SCIENCES BAKYATED FOREST SCIENCES BAKYATED FOREST SCIENCES BAKYATED ENVIRONMENT INFORMERING INFORMATION MARCAN HAYKN INFORMATION INFORMATION