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FORS²D

FORESTRY SCIENCE FOR SUSTAINABLE DEVELOPMENT

BOOK OF ABSTRACTS

**"Perspectives of forestry and related sectors
as drivers of sustainable development in the post-Covid era"**

**Banja Luka, the Republic of Srpska / Bosnia and Herzegovina
29–30 September 2022**

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BOOK OF ABSTRACTS

International Scientific Conference

FORESTRY SCIENCE FOR SUSTAINABLE DEVELOPMENT - FORS2D

Perspectives of forestry and related sectors as drivers of sustainable development in the post-Covid era

Publisher

Faculty of Forestry, University of Banja Luka

Stepe Stepanovića 75A, 78 000 Banja Luka, the Republic of Srpska / Bosnia and Herzegovina

Tel/Fax: +387 51 460 550

<http://www.sf.unibl.org>

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CIP - Каталогизacija у публикацији
Народна и универзитетска библиотека
Републике Српске, Бања Лука

630(048)

502.131.1(048)

INTERNATIONAL Scientific Conference "Forestry Science for Sustainable Development - FORS2D". Perspectives of forestry and related sectors as drivers of sustainable development in the post-Covid era (2022 ; Banja Luka)

Book of Abstracts / International Scientific Conference "Forestry Science for Sustainable Development - FORS2D", Perspectives of forestry and related sectors as drivers of sustainable development in the post-Covid era, Banja Luka, the Republic of Srpska / Bosnia and Herzegovina 29–30 September 2022 ; [editors Marijana Kapović-Solomun ... [et al.]]. - Banja Luka : Faculty of Forestry, University of Banja Luka, 2022 ([S. l. : s. n.]). - 173 crp. ; 25 cm

ISBN 978-99938-56-51-1

COBISS.RS-ID 136776705

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FORESTRY SCIENCE FOR SUSTAINABLE DEVELOPMENT

"Perspectives of forestry and related sectors as drivers of sustainable development in the post-Covid era"

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Foreword

Dear participants and friends,

The International Scientific Conference "**Forestry science for sustainable development FORS²D – Perspectives of forestry and related sectors as drivers of sustainable development in the post-Covid era – FORS²D**" in Banja Luka is held on the occasion of important Jubilee (30 years) of the Faculty of Forestry, University of Banja Luka, and 30 years of PFE "Šume Republike Srpske" a.d. Sokolac, in cooperation with FAO (*United Nations Food and Agriculture Organization*). Considering global changes that we are facing, the importance of forests cannot be underestimated. We depend on forests for our survival, from the air we breathe to the wood we use, but without education and scientific research we cannot promise sustainable development or sustainable forestry. Besides basic functions of forests needed for humans, forests also offer climate change mitigation, watershed protection, prevent soil erosion and torrential floods that we are frequently facing in recent decades. Unfortunately, despite our dependence on forests, we are still allowing them to disappear.

This Conference will give an opportunity for participants to address important issues related to forestry, exchange recent research, knowledge and experiences in forestry and related fields, to establish functional international cooperation among institutions, to improve cooperation between forestry science and practice and finally to forestry as important sector for human well-being at local, national and global level.

The Conference is organized in nine sessions along different themes. Together there are five plenary lectures, 64 oral presentations and 64 poster contributions, with more than 120 participants.

As announced, authors, the reviewed and accepted papers are going to be published in the Bulletin of the Faculty of Forestry, University of Banja Luka (<http://glasnik.sf.unibl.org>).

We wish you a very successful Conference and pleasant stay in Banja Luka.

Chair of the Organization Committee
Marijana Kapovic Solomun

Predgovor

Dragi učesnici i prijatelji,

Međunarodna naučna konferencija „Šumarska nauka za održivi razvoj FORS²D – Perspektive šumarstva i povezanih sektora kao pokretača održivog razvoja u post-kovid eri – FORS²D” se održava u Banjoj Luci povodom značajnog jubileja (30 godina) Šumarskog fakulteta Univerziteta u Banjoj Luci i 30 godina JPŠ “Šume Republike Srpske” a.d. Sokolac, u saradnji sa FAO (Organizacija Ujedinjenih nacija za hranu i poljoprivredu). Imajući u vidu globalne promjene kojima se suočavamo, značaj šuma mora biti posebno istaknut. Opstanak čovječanstva zavisi od šuma od vazduha koji udišemo do drveta koje koristimo kao materijal, ali bez obrazovanja i naučnog istraživanja ne možemo obećati održivi razvoj ili održivo šumarstvo. Pored osnovnih funkcija šuma potrebnih čoveku, šume takođe nude ublažavanje klimatskih promjena, zaštitu riječnih slivova, sprječavanje erozije zemljišta i bujičnih poplava sa kojima se često suočavamo poslednjih decenija. Nažalost, uprkos činjenici da zavisimo od šumskih ekosistema, mi i dalje dozvoljavamo da one nestaju.

Ova Konferencija će pružiti priliku učesnicima da se pozabave važnim pitanjima vezano za šumarstvo, razmijene novija istraživanja, znanja i iskustva u šumarstvu i srodnim oblastima, da uspostave funkcionalnu međunarodnu saradnju među institucijama, da unaprijede saradnju šumarske nauke i struke i konačno da istaknu šumarstvo kao važan sektor za ljudsko blagostanje na lokalnom, nacionalnom i globalnom nivou.

Konferencija je organizovana u devet sesija na različite teme. Učesnicima će se obratiti pet eminentnih plenarnih predavača, 64 usmenih izlaganja i 64 poster priloga, sa više preko 120 učesnika. Kako je najavljeno, recenzirani i prihvaćeni radovi biće objavljeni u Glasniku Šumarskog fakulteta Univerziteta u Banjoj Luci (<http://glasnik.sf.unibl.org>).

Želimo Vam uspješnu Konferenciju i ugodan boravak u Banja Luci.

Predsjednica Organizacionog odbora

Marijana Kapović Solomun

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1. Forest and sustainable development in light of climate change
2. Nature-based solutions
3. Let's green, be seen
4. A modern and competitive forestry sector
5. Innovative value chains and sociological aspects in forestry and related sectors

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APPLICATION OF LYSIMETERS IN SOIL SOLUTION MONITORING IN FOREST ECOSYSTEMS IN SERBIA

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ABSTRACT

As part of the multifunctional research of the ICP program for forests (international cooperation program for monitoring the state of forests in Europe) since 2003, continuously is conducting lysimetric method of monitoring the state of soil solution in forest ecosystems in Serbia. This method covers several forest communities in different ecological conditions. Certain amounts of atmospheric sediment that seep through the soil are collected in gravity lysimeters, which are placed in the vertical front wall of the existing pedological profiles, at a constant depth below the humus horizon. As a filter in a plastic container, there is annealed quartz sand for the purpose of purifying soil solution from soil particles. Sampling is done once a month. Based on these samples, the analysis of soil solution determines the presence of certain nutrients (K, Ca, Mg, Na, N-NO₃, S-SO₄, N-NH₄, Cl) and changes in their concentrations in solution, in order to define the existing vitality of forest complex, as well as in noticing differences in the resistance of certain tree species to the lack of these nutrients. One of the goals is to determine the trend of soil acidification, and the quality of water circulating through a forest ecosystem. In that way, it is possible to determine the buffer capacity of the soil and the extent to which acidification occurred. Monitoring with this method should be extended to other important forest communities in Serbia, primarily oak communities, in order to gain better insight into the impact of forest cover composition on the characteristics of the soil solution, as well as the state of soil damage.

Key words: lysimeters, soil, soil solution, forest ecosystems