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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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"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

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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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УНИВЕРЗИТЕТ У БАЊОЈ ЛУЦИ
ШУМАРСКИ ФАКУЛТЕТ
FACULTY OF FORESTRY
UNIVERSITY OF BANJA LUKA

THEMATIC AREA 3
Let's green, be seen

TEMATSKA OBLAST 3
Ozelenimo, budimo vidljivi



FORS²D
ŠUMARSKA NAUKA ZA ODRŽIVI RAZVOJ

POTENTIAL OF AREAS DEGRADED BY SURFACE COAL MINING FOR BIOMASS PRODUCTION

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ABSTRACT

Adopting the principles of the Kyoto Protocol, many countries have developed a strategy to replace fossil fuels with renewable energy sources, so biomass is becoming a realistic alternative. In Serbia reserves of lignite occupy the area of more than 1000 km². Past experiences show that in the procedure of biological restoration of mine spoil banks, the ratio of forest and agricultural revegetation is mostly 60:40, which means that finally it can be expected that forest ecosystems should establish on about 600 km², and agricultural areas, urban ecosystems and infrastructure - on about 400 km². Also, the deposited tailings in the internal landfills of the mines, which are deposited in layers, are a suitable space for the formation of energy crops. These surfaces last for several years before they have been covered with a new layer of deposols. In the aim of determination of possibilities of biomass production at the disposal sites of barren soil (deposols) the comparative experiment was set with fast-growing plant species, two conifers (*Larix europaea* L. and *Pseudotsuga menziesii* Mirbel. Franco.) and two deciduous species (*Populus x euramericana* I-214 and *Salix* sp.). On the experimental plot the following parameters were monitored: the degree of the survival of the planted plants, dynamics of the height and diameter growth increase, effects of the applied care measures and fertilization. Using different tree species in our research, even under unfavourable soil conditions, the increment was estimated from 5.3 to 19.6 t of dry matter per ha at the age of 4 years. The paper data point to significant, so far unutilised potentials of woody biomass produced on deposols, which could be used for energy production.

Key words: deposols, biological reclamation, open pit mines