

IUFRO 2022

Interconnecting Forests, Science and People

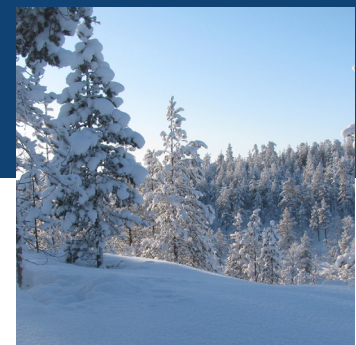
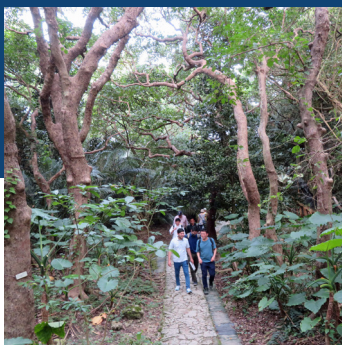
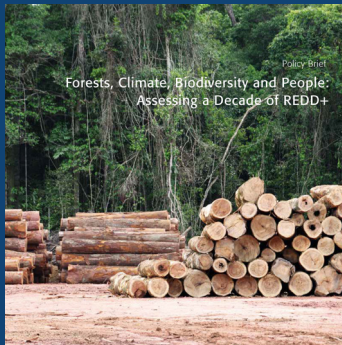
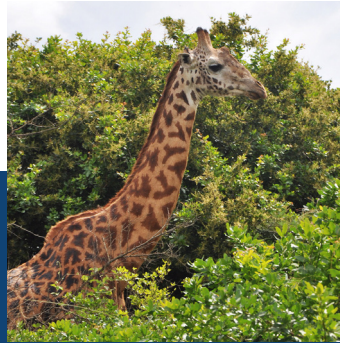




Photo IUFRO, N. Grima

The vision of IUFRO is to be
The Global Voice of Forest Science Promoting a
Sustainable Future of Forests and Society.

IUFRO's mission is to advance research excellence and knowledge sharing,
and to foster the development of science-based solutions to
forest-related challenges for the benefit of
forests and people worldwide.



Table of Contents

Strategic Focus Areas of IUFRO	4
A Message from the President and Executive Director	5
All-IUFRO Conference	7
Thematic Focus Areas of IUFRO	8
Forests for People	9
Forests and Climate Change	13
Forests and Forest-based Products for a Greener Future	17
Biodiversity, Ecosystem Services and Biological Invasions	21
Forest, Soil and Water Interactions	26
Publications	28
IUFRO Structure and Meetings	29
IUFRO Honours and Awards	30
IUFRO Thanks Donors	30
IUFRO Welcomes New Members	31



A note from the editor:

This IUFRO Annual Report follows the design initiated in 2021. After a joint message by the IUFRO President and the Executive Director you will find **selected activities from Divisions, Task Forces, Special Programmes and Projects presented under thematic clusters**. This approach has been taken to minimize the reporting burden for IUFRO Units, to use the information collected for the Strategy Action Plan, and to move away from a mere documentation format towards a communication format. The electronic version provides hyperlinks to more information about activities, IUFRO Units and more. **For the calendar of 2022 meetings please click: [Calendar](#)**

A short electronic Annual Report was published before this version and can be accessed at: [2022 in a Nutshell](#)

*IUFRO Annual Report 2022: Copyright by IUFRO, Vienna, 2023
Edited and published by IUFRO Headquarters, Marxergasse 2,
1030 Vienna, Austria, www.iufro.org - office@iufro.org*

Texts related to IUFRO activities have either been provided by IUFRO Officeholders or have been taken from IUFRO meeting webpages, flyers and reports for IUFRO News.

Please note that in the IUFRO context the term “to sponsor” a meeting does not imply any financial assistance. It means that IUFRO Officeholders are prominently involved in a meeting and that IUFRO supports the promotion of the event in its media.

Photo credits cover page (from top left to bottom right):

Alessandro Panasolo, John Parrotta, FAO, IUFRO-GFEP, Gerda Wolfrum, Berny Ortega, Kai Bödeker, mimikama on Pixabay, Gerda Wolfrum, Ikuo Ota, Jose Bolaños, Nelson Grima

Photo credits - Table of Contents (from top to bottom)
Sarangib on Pixabay, Gerda Wolfrum (both)

Strategic Focus Areas of IUFRO

- Achievements and Challenges -

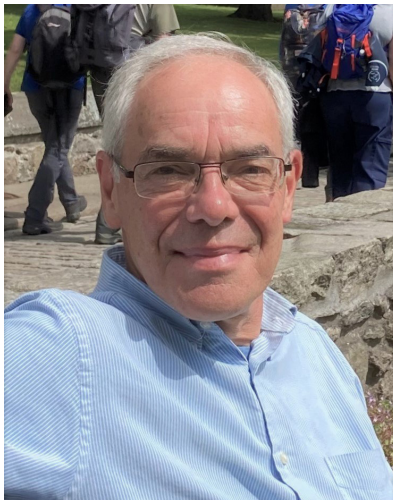
IUFRO's institutional goals reflect the organization's core values of excellence, networking, diversity and integrity. Thus, IUFRO strives at quality, relevance and synergies, aims to improve communication and embrace diversity, and to enhance visibility, outreach and education.



(Illustration: Board report on Division activities by Daniela Kleinschmit, IUFRO Vice-President for Divisions)

A Message from the IUFRO President and the Executive Director

2022 was an important and, in many ways, transitional year for the IUFRO extended family. After two full years during which our global networking was constrained by the limitations imposed by the COVID-19 pandemic, IUFRO held several significant in-person and hybrid conferences and made major contributions to other international meetings. These conferences complemented our ongoing organization of virtual networking events which have proven to be an effective means to engage a wider diversity and larger number of colleagues and students from around the world in IUFRO activities.



John Parrotta, IUFRO President

Notable among these events was the **All-IUFRO Conference Forests in a Volatile World – Global Collaboration to Sustain Forests and Their Societal Benefits**, a hybrid conference held in Vienna in September that brought together more than 160 participants on-site and almost 580 registered participants online from 85 countries across all IUFRO Divisions. The event also marked the 130th anniversary of IUFRO and the 50th anniversary of Austria as host country of IUFRO Headquarters. [Conference landing page](#)



Alexander Buck, IUFRO Executive Director

Earlier in the year, IUFRO played a major role in the **15th World Forestry Congress** held in Seoul, Republic of Korea.

During this highly publicized event, IUFRO demonstrated the importance of forest science and global research collaboration towards a green, healthy, and resilient future with forests, and our contributions to the Sustainable Development Goals, the UN Decade on Ecosystem Restoration, the Post-2020 Global Biodiversity Framework, and a green recovery from the COVID-19 pandemic. [WFC landing page](#)

During this past year, we expanded and deepened our partnerships, which are a key element of IUFRO's strategy to further the reach of our network and the impact of our research through engagement with other international organizations, the private sector, policymakers and students.

The meetings and activities organized by the IUFRO-Mondi Partnership "**Teaming Up 4 Forests**" confirmed the importance of structured dialogue and cooperation between

forest science and business for addressing climate change and other major global challenges and provided clear encouragement to further expand this innovative [platform](#).

The boundaries of IUFRO's collaborations will be expanded also through a new project awarded to IUFRO and FAO by the Government of Austria in December 2022 which focuses on **scientific exchange and global and regional dialogues on wood policies**.

Collaboration with Youth continued to be a central feature of IUFRO's work in the past year. IUFRO and the International Forestry Students' Association (IFSA) jointly organized an IFSA-IUFRO Summer School as a webinar series on *Forest Policy for an EU-fit Ukraine* for undergraduate and PhD forestry students, with emphasis on individuals studying in Ukraine.

The importance of locally relevant and inclusive forest education was highlighted also at a special session organized during the **World Forest Week** in October 2022 at which IUFRO, FAO and ITTO presented the results of a *Global Assessment of Forest Education*.

In summary, IUFRO made notable progress in addressing interrelated challenges related to diversity, inter-Divisional collaboration, partnerships and youth involvement, as well as social networks and media.

Efforts in 2023 and beyond will be geared towards attainment of the goals set out in IUFRO's Strategy post-2020 and laying the foundations for a successful [XXVI IUFRO World Congress in June 2024 in Stockholm, Sweden](#).

We thank all our members, partners and donors, and the many individuals serving our network in a voluntary capacity for their continued support in connecting forests, science and people.

*John Parrotta, IUFRO President
Alexander Buck, Executive Director*

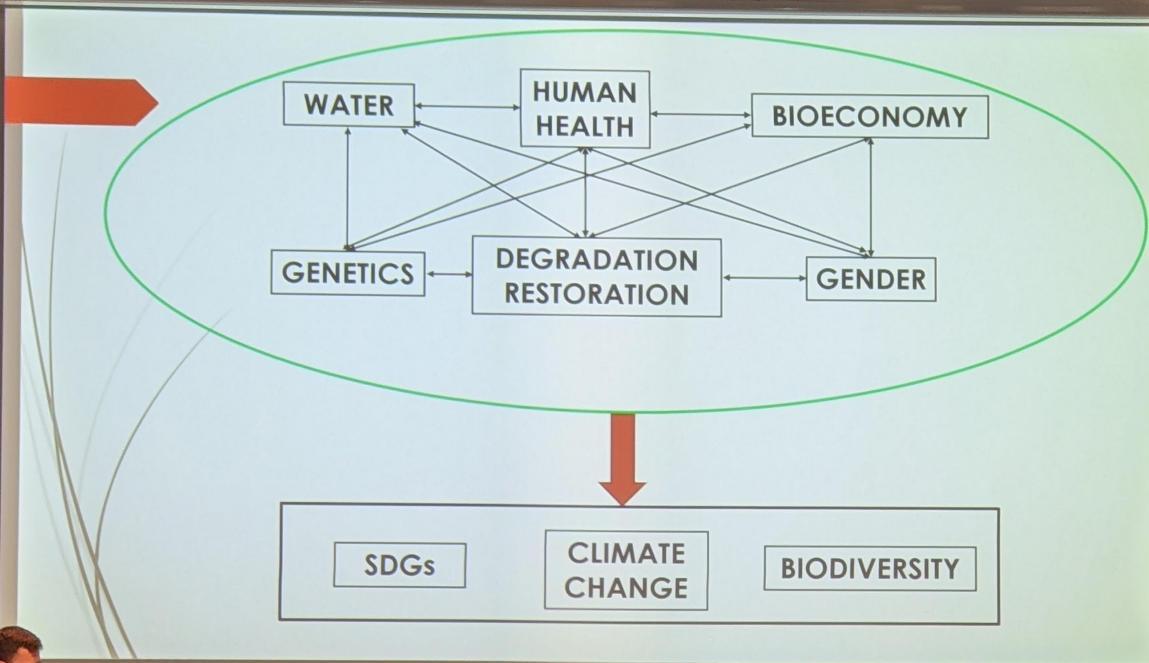


Photo IUFRO, N. Grima



Photo IUFRO, G. Wolfrum

All-IUFRO Conference

- Forests in a Volatile World - Global Collaboration to Sustain Forests and Their Societal Benefits

The first ever All-IUFRO hybrid conference took place from 21-23 September in Vienna, Austria, under the title “Forests in a Volatile World – Global Collaboration to Sustain Forests and Their Societal Benefits”. The event brought together more than 160 participants on site and almost 580 participants online, representing 85 countries. *Session recordings, abstracts, presentations, etc. are available at the [Conference landing page](#).*

The Conference, which was preceded by the IUFRO Board Meeting and a field trip to two forest sites south of Vienna, was kindly supported by the Austrian Federal Ministry for Agriculture, Forestry, Regions and Water Management (BML), the National Institute of Forest Science of the Republic of Korea (NIFoS), the University of Natural Resources and Life Sciences (BOKU), Eva Mayr-Stihl Stiftung, and the Federal Ministry for Economic Development and Cooperation of Germany (BMZ). In addition to the exchange of scientific knowledge and experience, the event offered ample opportunities for mentoring and networking - and a great field trip and dinner!

The All-IUFRO Conference 2022 addressed the critical roles of research on forest management, conservation and sustainability under dynamic economic, social and environmental conditions. Themes covered by the impressive number of submissions presented cut across several topics such as:

Forests and human health, which shared preliminary findings from the Global Forest Expert Panel (GFEP) on Forests and Human Health;

Bio-economy as a strategy to reduce dependence on fossil fuels by using woody biomass more efficiently;

Forest degradation and restoration, which addressed successful and failed projects on forest productivity and rejuvenation;

Gender (un) equal networking of IUFRO, which discussed the gender roles and functions in forest research and the IUFRO network;

Forest genetics resources for future resilient forests, including the sustainable use and conservation of forest genetic resources; and

Forest and water, which addressed three SDGs (SDG 1: No Poverty; SDG 6: Clean Water and Sanitation; and SDG 13:

Climate Action) in terms of the impacts of forest management on water supplies and people, and likely co-benefits and trade-offs.



Don Hodges, Congress Organizing Committee Chair. Photo IUFRO, G. Wolfrum



Maria Patek (BML, Austria), IUFRO Host Country Representative. Photo IUFRO, N. Grima

This event was jointly developed by IUFRO Divisions, Task Forces, Special Programmes and Projects.

Opening remarks were delivered by IUFRO President *John Parrotta*, IUFRO Host Country Representative *Maria Patek* (BML) and Conference Scientific Committee (CSC) Chair *Don Hodges*, followed by two inspiring keynote speeches:

IUFRO Vice-President *Daniela Kleinschmit*, University of Freiburg, Germany, took the audience on a time travel through the jungle of international political negotiations from the 1970s to the Sustainable Development Goals, especially SDG 15 - Life on Land. She made it clear that the slogan ‘Plant a tree and heal the world!’, which seems to be all over the place these days, does not come out of the blue, and nor do the SDGs.

Florian Kraxner, principal research scholar at the International Institute for Applied Systems Analysis (IIASA), focused his keynote talk on the future of forests, global challenges and local opportunities. He pointed out that all forests are at risk, citing a newly published climate risk analysis of the world’s forests. But there are also opportunities such as citizen science, which is an excellent and cost-effective tool to collect important data.

zen science, which is an excellent and cost-effective tool to collect important data.



The All-IUFRO Conference offered a great opportunity for promoting the [XXVI IUFRO World Congress 2024](#) to be held from 23 to 29 June 2024 in Stockholm, Sweden. Members of the Congress Organizing Committee provided Conference delegates with ample information at the Congress booth and invited them most cordially to become “Congress Ambassadors” by telling all their colleagues and interested audiences about the Congress. Also, the Congress logo was officially presented.

Members of the Congress Organizing Committee provided Conference delegates with ample information at the Congress booth and invited them most cordially to become “Congress Ambassadors” by telling all their colleagues and interested audiences about the Congress. Also, the Congress logo was officially presented.

[Click for IUFRO News Conference Coverage](#)

Thematic Focus Areas of IUFRO

IUFRO, the only *global network for forest science*, continues to improve the scientific knowledge base that supports our efforts to tackle threats to sustainable development and human well-being.

To react to the most pressing challenges and risks that affect both forests and society, the work and collaboration in IUFRO is focused on five thematic areas, which are closely interconnected as described in the [Post-2020 Strategy](#):

- Forests for People
- Forests and Climate Change
- Forests and Forest-Based Products for a Greener Future
- Biodiversity, Ecosystem Services and Biological Invasions
- Forests, Soil and Water Interactions

All of them are also strongly linked to the Sustainable Development Goals (SDGs) of the 2030 Agenda, a global framework guiding the forest-related policy processes in the coming years.

Forests for People

The impact of global challenges and threats on the social, cultural, ecological and economic functions of forests can result in consequences for people's livelihoods, health and the quality of life. There is a growing need to harness the potential of forests and trees to contribute to sustainable development while avoiding and mitigating the threats affecting these forests. IUFRO addresses the important role of *Forests for People* by focusing on the relationship between forests and society as individuals or communities, as well as on the institutional arrangements supporting people's livelihoods and quality of life. *Here are some of the activities in the IUFRO network with a specific focus on health, gender equality, education and decision-making:*

Forests and Human Health

There is a need for a much better integration of health aspects in forest and other policies, and a need for society to better connect to nature, because healthy forests are necessary for people to be healthy as well. This was one of the take-away messages of the All-IUFRO Conference session on "Forests and Human Health".

Panelists discussed the many close relationships between forests and human health, from providing urban residents with restorative spaces and cool spots during heatwaves to the role forests play in the livelihoods of rural and forest-dependent communities. Forest-human health relationships also relate to e.g., management of zoonotic diseases, health risks resulting from forest degradation and forest fires, and the importance of spiritual values of forests, for example.

The session took a One Health perspective in the understanding that the health of all living beings is interconnected. It was jointly organized by members of IUFRO Divisions 6 [Social Aspects of Forests and Forestry](#) and 7 [Forest Health](#), and the Global Forest Expert Panels (GFEP) Programme. [More...](#)

Furthermore, as the preparation of an assessment by the [Global Forest Expert Panel \(GFEP\) on Forests and Human Health](#) advanced towards its conclusion, Expert Panel members convened in Vienna, Austria, in September for a final meeting. The assessment to be launched in early 2023 aims to provide reliable and synthesized scientific information that is crucial to address the complex relationship between forests and human health in changing global conditions. It includes robust evidence required to efficiently utilize the synergies and achieve optimal trade-offs between human health and the conservation, restoration, and sustainable management of forest ecosystems, their biodiversity (including wildlife), as well as trees in other land uses.

Gender (Un-)Equal Networking of IUFRO: Creating New Spaces and Thinking



*Task Force Coordinator Gun Lidestav.
Photo IUFRO, G. Wolfrum*

Gender equality - not restricted to binary - is a task and challenge for everybody! Everyone in IUFRO should engage in issues of equality, inclusion, and, more broadly, in strengthening geographic and cultural diversity. This is one of the main conclusions of the All-IUFRO Conference session in September titled "Gender (un-)equal networking of IUFRO: Creating new spaces and thinking". The session also presented the work of the IUFRO Task Force on

[Gender Equality in Forestry](#), which is aimed at fostering the growth and professional development of unrepresented voices and perspectives in forestry. In line with this, the Task Force wants to make gender equality a cornerstone of the program of the IUFRO World Congress in 2024. [More...](#)

In connection with the All-IUFRO Conference, participants were invited to answer a survey regarding their opinions and experience about gender balance and inclusion in the IUFRO network. The results of the survey will provide valuable additional inputs to the organizational analysis report. Furthermore, the preparation for a Massive Open Online Course (MOOC) on Gender Equality and Diversity progressed. A partnership with FutureLearn (through the University of Padova) was established.

Members of the Global Forest Expert Panel on Forests and Human Health met in Vienna. Photo IUFRO, J. Bolaños



Extension and Forest Knowledge Exchange

Extension plays a key role in empowering individuals and communities to take action. A virtual conference titled “Knowledge Exchange for the Modern Era: Empowering People / Providing Solutions” organized by IUFRO Working Party 9.01.03 [Extension and knowledge exchange](#) in spring 2022 offered opportunities to learn from each other and build strong partnerships from local to international. The meeting conducted over three sessions, celebrated the successes of what extensionists do every day in their ‘extension’ lives. [More...](#)

Including Socio-economic Aspects in Forest Science Curricula

The involvement of local communities in forest planning and management is crucial. In this sense, forest professionals need to understand basic concepts of social science that help them to better understand the relationship between humans and the forests and thus contribute to creating better-informed policies and enhancing forest governance.

The online workshop in Spanish titled “Introducción a los métodos de investigación social y su aplicación en las ciencias forestales” on November 28 and 29 and December 1 attracted 180 participants from all over Latin America. It was organized by the Joint IUFRO-IFSA Task Force on [Forest Education](#) and supported by Universidad Autónoma de Chihuahua, Reforestamos México and WRI. Participants were satisfied with the workshop and there was a notable demand for more workshops that include social research methods. [More...](#)

During the workshop participants acknowledged the need for the tools presented to be applied in their working life. 73% of participants stated to be forestry professionals who worked in the field with communities, the rest are forestry and forestry-related professionals who are conducting postgraduate programs.

Are Today's Graduates Prepared for the Future of the Forest Sector?

The final event of the EFI-IFSA-IUFRO Global Student Networking and Green Jobs in the Forest Sector Project addressed a series of important questions: What impacts do globalization, digitalization, changing societal demands and climate change have on forest-related employment? What skills are essential for future land managers and decision-makers? What motivates people to pursue forest-related studies? The spectrum of forest-related jobs is broadening and there are emerging green job opportunities.

With the new opportunities come new demands for skills. The most demanded forest-related skills include forest economics, forest management and planning. Meanwhile generic skills are increasingly in demand, especially com-

munication, creativity, and problem-solving. Doing beneficial work, job satisfaction and working conditions (i.e., outdoor work) were the top motivating factors for students and recent graduates to pursue forest-related studies and careers. [More...](#)

IFSA-IUFRO Summer School 2022 “Forest Policy for an EU-fit Ukraine”

In July 2022 three webinars on EU Forest Policy were specifically held for students from Ukraine. Experts from different universities, research organizations, the private sector and the EU Commission supported the event with presentations on EU forest-related policies, the EU Forest strategy and possible future pathways. Participants from Ukraine were eligible for a competition at the end of the summer school. The prize was the participation at the All-IUFRO Conference and was kindly supported by the German Eva Mayr-Stihl Stiftung. The winners were Krot Oleksandr, Krasnyk Tetiana Valentinovna, Ganna Lobchenko and Kvashnytska Kateryna.

Mentoring Program: “Soft Skills” for Graduate Students

The health and sustainability of the world’s forest ecosystems depend on the existence of an educated workforce to manage this resource. Graduate students represent a talent pool that increasingly will provide the intellectual capital needed for scientific innovation. As a result, they occupy a central role in current and future knowledge economies. Trends of economic globalization, changing climate and ageing populations have created increases in the need for skilled professionals and expansion of higher education systems. As a result, the need to train and promote young researchers has never been higher.

In addition to becoming subject matter experts, young researchers must acquire a suite of “soft skills” (e.g., communication, networking, time management, conflict resolution) to get jobs and be successful once they do. While many graduate programs excel in training and graduating subject matter experts, few explicitly address the acquisition of these soft skills. The objective of the mentoring program developed by IUFRO WP 7.03.16 [Behavioral and chemical ecology of forest insects](#) was to help graduate students working in the fields of the behavioural and chemical ecology of forest insects develop some of these soft skills. [Link to the webinar series](#)

Socio-Ecological Conflicts in Forest Management: Risks of (Not) Adapting?

The international conference of IUFRO Working Party 4.04.07 [Risk analysis](#) held in Nancy, France, was kindly supported by INRAE, Labex ARBRE, BETA lab (Bureau of Theoretical and Applied Economics) and AgroParisTech. It focused on potential conflicts emanating from the divergences in terms of expectations that various actors have

of the forest. Participants concluded that most of the nature-based solutions involving forests are not based on scientific findings and quantitative results, but mostly on agreements between supply and demand parties. Novel technologies and modelling approaches can support better decision-making processes regarding forest resources especially when dealing with the risks and uncertainties inherent in long term forest decision-making. [More...](#)

Publication: Global Assessment of Forest Education



Education is essential for safeguarding natural resources, including forests, for future generations.

This is a key messages from the report “Global Assessment of Forest Education” presented by the Food and Agriculture Organization of the United Nations (FAO), the International Tropical Timber Organization (ITTO) and IUFRO on 4 October 2022 at the 26th Session of

the FAO Committee on Forestry / World Forest Week in Rome.

The report is based on the results of the 2020 Global Forest Education Survey, supplemented by findings of six regional assessment reports on forest education, carried out under the project, “Creation of a Global Forest Education Platform and Launch of a Joint Initiative under the aegis of the Collaborative Partnership on Forests”.

The study addresses education and training related to forests, trees outside forests and other wooded land and covers all levels of formal education: primary, secondary, technical and vocational education and training, universities and colleges. It identifies an urgent need for locally relevant, appropriate and inclusive solutions that take into account digital divides, language barriers and a gender and racial/ethnic balance in forest education programs and the workforce. One of the main areas for improvement is to grant students at all levels better access to forests and outdoor training experience. [More...](#)

Seasonal Migration in the Forest Sector: Workshop with Journalists

Forest Europe in collaboration with IUFRO, Migrapreneur and 2811 organized a workshop in Berlin on 27 October 2022 that brought together three experts on forest employment and education and 11 journalists from Austria, France, Germany, Greece, Romania, Serbia, Spain and Sweden. The goal was to identify the challenges faced by seasonal forest migrants, evaluate the communicational

and informative impact of the topic for the media in Europe, and build a network of trained journalists on seasonal migration.

Among other things, the need for forest workers to be equipped with the right skills was stressed. One of the keynote speakers, Mika Rekola, University of Helsinki, Finland, and Coordinator of IUFRO Research Group 6.09.00 [Forest education](#), pointed out that the need for inclusivity in forest education to cater for different groups was one of the recommendations from the Global Assessment of Forest Education, of which he was an author. [More...](#)

Managerial Forest Economics and Accounting as a Base for Decision-making in a Changing World

The forestry sector is significantly affected by climate change, ongoing losses of forest area and habitats and intensified land-use competition, and the pressure and demands on forests and forestry are strong. To face these challenges, forest owners, scientists, administrative staff and politicians on all levels must make informed choices of future forest management activities. Managerial economics and accounting are important analytical instruments for identifying and evaluating forest management action alternatives and for supporting knowledge-building and decision-making.

The conference of IUFRO Research Group 4.05.00 [Managerial economics and accounting](#) on 5-7 September 2022 in Hamburg, Germany, was targeted at researchers and practitioners engaged in managerial, social, and environmental forest economics and accounting, management of forest enterprises, forest ecosystem services, land-use, resource policy, social innovation, decision-making support, and related fields under the bioeconomy paradigm. The conference aimed to foster the scientific exchange on recent developments, research and best practices from managerial economics and accounting on regional, national, and international levels. [More...](#)

Field trip in the course of the 4.05.00 meeting. Photo by L. Rosenkranz





Photo IUFRO, G. Wolfrum

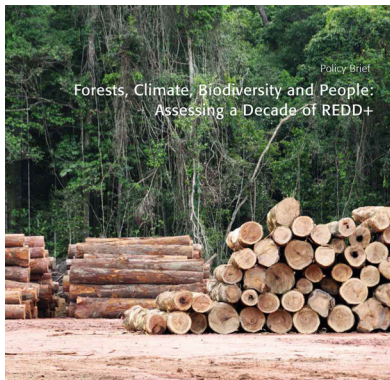
Forests and Climate Change

Climate change is a global challenge neglecting national borders and affecting every forest on every continent. Global temperatures are increasing and, regionally, more extreme and intense weather events are occurring, coupled with increased stress and disturbances. More than ever, the world needs to take action to move away from the fossil-based economy towards renewable resources and nature-based solutions. This theme focuses on the impacts of climate change on forests and how to increase their resilience and adaptive capacity. *The following selection of IUFRO events reflects the role of forests in regulating climate change, challenges of climate change to forest management and resources supply, as well as tree mortality and tree resilience.*

Publication

World Series Vol. 40 – Forests, Climate, Biodiversity and People: Assessing a Decade of REDD+

[This report](#) revisits the questions examined in the earlier 2012 assessment on REDD+ by the Global Forest Expert Panels initiative (GFEP). Forests play a pivotal role in regulating our global climate and represent a cornerstone of our strategy to tackle climate change. REDD+ was conceived as a mechanism to compensate low- and middle-income countries for the conservation of their forests. The GFEP assessment on REDD+ evaluates the actual on-the-ground impacts of REDD+ activities on forests, climate, biodiversity and people. It revisits the issues and questions examined in the earlier 2012 GFEP assessment on REDD+, analyzing and synthesizing scientific information published in the last decade, along with lessons learnt since then. In addition to the report, a [Policy Brief](#) titled *Forests, Climate, Biodiversity and People: Assessing a Decade of REDD+* was published.



Back-to-back with the GFEP assessment, stakeholder consultations were carried out in Asia and Latin America. These consultations helped to identify a number of factors that, from the point of view of the stakeholders, need to be improved in future REDD+ activities. The resulting publication [“A Decade of REDD+: Stakeholder Perceptions of its Implementation”](#) synthesizes the responses and

comments from the nearly 200 stakeholders interviewed that provided their opinion on REDD+ implementation on the ground. [More...](#)

REDD+ and Forest Landscape Restoration (FLR): Stakeholder Views and Potential Synergies

IUFRO held a hybrid session on 11 November 2022 at the Global Landscapes Forum (GLF) alongside COP27 in Sharm El-Sheik, Egypt. Speakers Stephanie Mansourian (IUFRO/Consultant), Pablo Pacheco (WWF/IUFRO-WFSE), Michael Kleine (IUFRO-SPDC) and Nathália Nascimento (University of São Paulo) highlighted linkages between REDD+ and FLR and shared insights on stakeholder views. Discussions were based on the recent publications “Forest, Climate, Biodiversity and People: Assessing a Decade of REDD+” and “A Decade of REDD+: Stakeholder Perceptions of its Implementation”. [More...](#)

Fir and Pine Management in a Changeable Environment: Risks and Opportunities

Fir and pine forests are widely represented around the world and play important ecological, economic and social roles. There are several risks and opportunities to be addressed when managing these forests. Furthermore, climate change is expected to affect fir and pine forest dynamics (regeneration, growth and mortality), requiring adaptive management strategies. The management of fir and pine nowadays represents a challenge for the silviculturists and forest managers bearing in mind that it is necessary to consider potential risks and opportunities for improving management practices. Science has provided useful guidance for the management of these coniferous species. More research needs to be pursued at regional and global levels to help address this challenge.

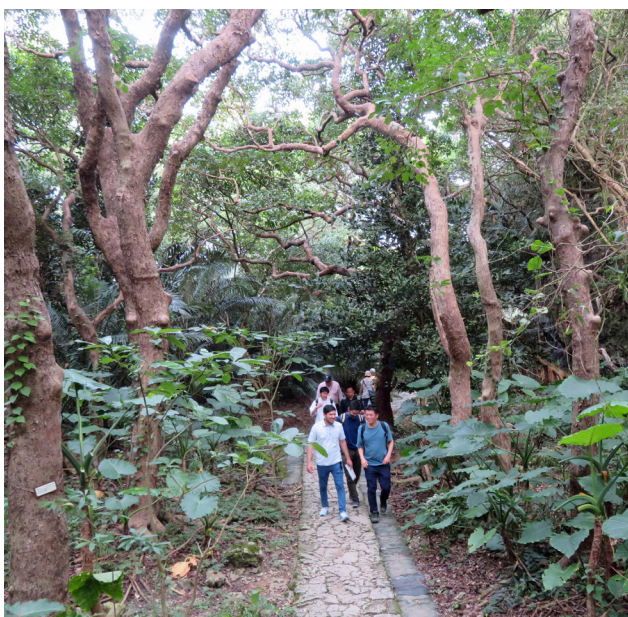


Visit to the protected landscape of Trebević
Photo credit: University of Sarajevo

The international IUFRO Abies & Pinus 2022 conference titled “Fir and pine management in a changing environment: risks and opportunities” was organized with the aim of reviewing past experiences and improving the management of fir and pine in a changing environment while recognizing the risks and opportunities for sustainable management of these types of forests. This conference in Sarajevo, Bosnia and Herzegovina was the first joint conference of IUFRO Working Parties 1.01.09 [Ecology and silviculture of fir](#) and 1.01.10 [Ecology and silviculture of pine](#). [More...](#)

Progress in Small-scale Forestry beyond the Pandemic and Global Climate Change

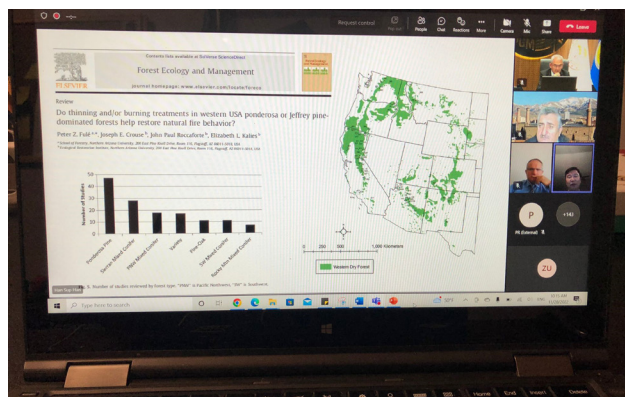
Family, community and other small-scale forests play a crucial role in the wider society. For many forested countries they significantly contribute to the economy through forest-based businesses, providing rural livelihoods and ecosystem services. In October 2022, the IUFRO Research Group 3.08.00 [Small-scale forestry](#) hosted the “Small-scale Forestry International Conference 2022” in Okinawa, Japan, together with the University of the Ryukyus and the Japanese Forest Economic Society, and in cooperation with IUFRO RG 9.06.00 [Forest law and environmental legislation](#).



Field trip. Photo by Ikuo Ota

The theme for the conference was “Progress in Small-scale Forestry beyond the Pandemic and Global Climate Change”. In the previous three years, preexisting problems such as climate change have become more serious, and the circumstances surrounding small-scale forestry have changed greatly amid the COVID-19 pandemic and the recent upheavals caused by the wider global situation. The conference featured 55 presentations, including two keynote speeches, discussing these issues. [More...](#)

3rd International Hybrid Symposium of Forest Engineering and Technologies (FETEC 2022): Forest Transportation Solutions and IT Applications for Natural Disaster Management



In recent years, natural disasters caused by abiotic factors resulted in serious biological and ecological damage of forest ecosystems and threatened human lives. The most severe natural disasters include forest fires, winter storms, floods, landslides and avalanches. In order to minimize the detrimental effects of natural disasters, advanced information technologies (ITs) such as GIS, RS, ICT, IoT, etc. should be used in planning and implementing natural disaster management activities. In addition, the design and construction of forest roads should consider natural disasters.

The 3rd International Symposium of Forest Engineering and Technologies (FETEC 2022) “Forest Transportation Solutions and IT Applications for Natural Disaster Management” involved IUFRO Division 3.00.00 [Forest Operations Engineering and Management](#) and Research Group 3.01.00 [Harvesting and transportation engineering](#). It was organized as a hybrid symposium by the Space Agency of the Republic of Azerbaijan (Azercosmos) in the city of Baku, Azerbaijan. The aim of the symposium was to discuss the most recent scientific research and professional work related to forest transportation solutions and IT applications for natural disaster management. [More...](#)

Advances in Biomass Remote Sensing - Special Emphasis on Boreal Forests

A webinar series supported by IUFRO Working Party 8.01.06 [Boreal and Alpine forest ecosystems](#) was launched leading towards the 2023 Conference of the International Boreal Forest Research Association (IBFRA) themed “Climate Resilient and Sustainable Forest Management”. This first episode presented major datasets related to forest biomass and discussed recent advances in forest biomass remote sensing, including challenges and uncertainties. Speakers provided a review of recent freely available global datasets on forest extent, forest biomass and canopy

height, and talked about the strengths and limitations of boreal forest biomass maps derived from radar satellite observations, among other things. [More...](#)

The Future of Pan-European Forests in a Changing Climate – How to Balance Wood, Carbon, Biodiversity and Energy?

As part of the IUFRO-Mondi Partnership [“Teaming up 4 Forests”](#) the first Stakeholder Dialogue Meeting was held from 9-10 June 2022 in Vienna, Austria, with 24 participants. The meeting was comprised of a half-day workshop followed by a half-day field trip to the forest. Here are the key messages from the event:

- Demands on forests have never been higher and more diverse. The discussion on how forest management can be adapted to meet these requirements in the future at times of climate change is essential.
- There is “no-one-size-fits-all” management strategy. There seems to be agreement that forest management should follow the principle of multifunctionality, to be achieved through site-specific forest stand management taking into account local circumstances and management objectives.
- Policies, incentives and regulations, particularly at the national and European levels, are major drivers of future forest management and significantly influence the provision of services from forests and trade-offs among them (wood production, carbon, biodiversity, energy).
- Reconciling the different perspectives and jointly defining future forest policy and management strategies are major challenges. Formats such as the IUFRO-Mondi Stakeholder Dialogue are valuable for sharing diverse perspectives, identifying common ground and making this information clearly visible. Science plays an important role in supporting a more rational dialogue by providing scientific evidence and presenting options for action. [More...](#)

Teaming up for Forests: Forests and the Forest-based Industry in a Volatile World

Science has a major role to play in embracing the complexity of the challenge of meeting future and diverse demands on forests. This includes the development of management strategies in the local context and the communication of the latest evidence and data for diverse audiences. The 2nd Think Tank Meeting of the IUFRO-Mondi Partnership held on 3 November 2022 addressed the question: “What are appropriate response measures to address future and diverse demands on forests?” At the meeting the plan for a study that aims to provide a comprehensive synthesis of existing scientific and technical information on the future supply of goods and services from European forests was introduced. [More...](#)



2nd Think Tank Meeting group. Photo IUFRO, J. Bolaños

Tree Mortality Webinar Series

The IUFRO Task Force [Monitoring Global Tree Mortality Patterns and Trends](#) held several successful webinars throughout the year. The first one in January discussed “Recipes for Climate-Induced Bark Beetle-Caused Tree Mortality” and listed ingredients for bark beetle population success in future climates. The February webinar focused on “Climate variability, extremes, and attribution of high-impact ecological events: challenges and ways forward”. Two other episodes in the series addressed the question: “How does sensitivity to climate change vary across Amazon forests?” and presented insights from ecophysiology, forest dynamics, remote sensing and modelling. [More...](#)

Forest Genetic Resources for Future Resilient Forests

At the All-IUFRO Conference, IUFRO Division 2 [Physiology and Genetics](#) and Division 7 [Forest Health](#), together with the Task Force [Strengthening Mediterranean Nursery Systems for Forest Reproductive Material Procurement to Adapt to the Effects of Climate Change](#), organized a session with a focus on making forests more resilient and maintaining their functions. This requires rapid and focused efforts based on the sustainable use and conservation of forest genetic resources and deployment of forest reproductive material.

This session presented best practices and identified research gaps, linking disciplines such as genetics, forest health, silviculture and modelling, while ensuring that transformative change to achieve SDGs 13 (Climate Action) and 15 (Life on Land) is implemented in a socially responsible manner. The session also discussed the role of tree breeding, which is considered as a very useful tool not only for wood production, but also for the adaptation to stressful environments, and breeding trees of high resistance to diseases to improve forest resilience, for example. [More...](#)



Photo IUFRO, G. Wolfrum

Forests and Forest-based Products for a Greener Future

The forest sector is in a unique position to be at the forefront of an inclusive, low-carbon bioeconomy. Climate change mitigation is increasing the demand for solutions based on renewable raw materials. This includes the use of forests as a source of renewable energy and the potential for new and innovative forest-based products in the future. Research therefore needs to address questions regarding the sustainable provision of wood and forest-based products and how the environmental performance of existing bio-based forest products can be improved. *Here are some of the activities in the IUFRO network with a specific focus on bioeconomy, wood research and biotechnology, among others:*

A Forest-based Bioeconomy

The Task Force [Unlocking the Bioeconomy and Nontimber Forest Products](#) organized a session at the All-IUFRO Conference. Bioeconomy has emerged as a progressive economic model to mitigate climate change, address biodiversity loss, and alleviate poverty - three global challenges. The primary focus of bioeconomy strategies has been to reduce dependence on fossil fuels by using woody biomass more efficiently. A forest-based bioeconomy is more than that! This session explored the nuances of what entails a forest-based bioeconomy that integrates all forest products - timber and non-timber. Presentations had a focus on social, cultural, economic, gender, silviculture, and other aspects of forestry within a context of the economy.

Throughout 2022, the Task Force also organized a successful webinar series which included webinars on “Transitioning to a Forest-Based Bioeconomy: The Argentina Experience”, “The Importance of NTFPS in Mexico and Their Potential for the Bioeconomy”, and “Non-wood Forests Products in Agroforestry: Farmer’s Perceptions in Europe”, for example. [More...](#)

International Day of Forests 2022: The Role of Forests in Ensuring Sustainable Production and Consumption

The forest sector already contributes significantly to reaching SDG12 and related SDGs, acknowledging that trade-offs between ecology and economy are required to achieve goals related to climate, biodiversity and land degradation. This is one of the key messages for policy and decision makers from a high-level event held on the International Day of Forests 2022 on 21 March titled “Inspire for the future: the role of forests in ensuring sustainable production and consumption” and jointly organized by FAO, IUFRO and IUFRO World Congress 2024 | SLU. The key messages highlight the vast potential that renewable forest products hold to contribute to the transition

towards carbon-neutral societies and towards building inclusive, resilient and sustainable economies. [More...](#)



World Wood Day

The 2022 World Wood Day Online Symposium & The 4th IUFRO Forest Products Culture Colloquium on 21 and 22 March focused on the theme “Trees and Non-Wood Forest Products: Challenges, Opportunities and Sustainability”.

IUFRO President John Parrotta delivered a keynote presentation titled “Bridging the gap between public and professional perceptions of forests and trees: enhancing social and cultural literacy in education and research”. The event was hosted by the International Wood Culture Society and World Wood Foundation. IUFRO Units 5.00.00 [Forest Products](#), 5.15.00 [Forest products culture](#) and 9.03.02 [Forest culture](#) co-sponsored the meeting.

The multiple uses of wood products from different tree species have satisfied people’s needs for useful materials for centuries. Historical records show the cultural attachment to wood and non-wood forest products and artifacts throughout different human civilizations. Many more novel wood and non-wood forest products are being developed and will serve unique cultural purposes. However, forest management, timber trade and markets are facing the challenge of ensuring that trees and forests will continue to fulfill global needs for a greener society in the face of climate change. [More...](#)

2022 Wood Anatomy Meetings

The 2022 International Youth Forum for Wood Anatomy and the 9th IAWA – China Group Annual Meeting were held online on December 10-11 from Guangzhou, China, and involved IUFRO RG 5.16.00 [Wood identification](#) and

RG 5.06.00 [Properties and utilization of plantation wood](#). They were hosted by the International Association of Wood Anatomists (IAWA) and the South China Agricultural University (SCAU), with support from the International Academy of Wood Sciences (IAWS) and the International Wood Culture Association (IWCS). The overall theme was “Wood Anatomy and Wood Utilization – Future for Ecozoic Era and Community”. The Coordinator of IUFRO Division 5 [Forest Products](#), Dr. Pekka Saranpää, delivered opening remarks. [More...](#)

4th World Teak Conference 2022

The 4th World Teak Conference with the theme “Global Teak Market; Challenges and Opportunities for Emerging Markets and Developing Economies” was successfully organized in Accra, Ghana from 5-8 September 2022, for the first time in an African country. The Conference was jointly organized by the Forestry Commission of Ghana, International Teak Information Network (TEAKNET), International Tropical Timber Organization (ITTO), Japan, the IUFRO Teakwood Working Party 5.06.02 [Utilisation of planted teak](#), with the technical support of the Food and Agriculture Organization of the United Nations (FAO), Rome.



Teak plantation. Photo Sarangib on Pixabay

The main topics deliberated during the WTC 2022 included value addition and livelihood enhancement of smallholder teak plantations, promoting responsible teak trade and marketing, tree improvements, management and community forestry and family farming. It facilitated the transfer of knowledge and technology among teak growing countries. [More...](#)

22nd International Nondestructive Testing and Evaluation (NDTE) of Wood Symposium

The goal of this NDTE of Wood Symposium was to disseminate information on the latest research advances and improvements in the field of wood quality and non-destructive testing and bridge the gap between research and practical applications. This event brought together a variety of interest groups that span from wood formation,

structure, physics and chemistry to wood utilization. All, however, share the common goal of understanding the fundamental properties of wood materials, examining how environment, silviculture, genetics and other factors affect these properties, and how the property changes and variations influence the utilization of wood resources. The meeting at Université Laval in Quebec City, Quebec, Canada involved IUFRO Units 5.01.00 [Wood and fiber quality](#), and 5.01.04 [Wood quality modeling](#). [More...](#)

Natural Resources, Green Technology and Sustainable Development/4 - GREEN2022

After the great success of the GREEN2014, GREEN2016 and GREEN2018 conferences and a break due to the pandemic, leading experts from all over the world gathered in Zagreb, Croatia, again from 14-16 September 2022 for the fourth International Scientific & Expert Conference “Natural resources, green technology and sustainable development - GREEN/4”. The conference was opened with a plenary presentation titled “Strategic roadmap to assess forest vulnerability under air pollution and climate change” by Alessandra De Marco from ENEA, Italy. She presented the work that was outlined in the framework of IUFRO Research Group 8.04.00 [Impacts of air pollution and climate change on forest ecosystems](#). The five Conference sessions addressed the following topics: Environment and Climate Change; Plant Extracts - Value-added Products; Biomass for Bio-Based Industry; Green Technologies; and Ecosystem Management and Modeling. The conference was supported by IUFRO Divisions 5, 8 and 9. [More...](#)

One Big Family – Shaping Our Future Together

The joint conference of IUFRO Division 3 [Forest Operations Engineering and Management](#), the 44th Council on Forest Engineering (COFE) and the 54th International Symposium on Forestry Mechanization (FORMEC) was kindly hosted by Oregon State University, Corvallis, Oregon, U.S.A., on October 4-7, 2022. The meeting, which was supported by BOKU, Vienna, Austria, brought together more than 150 enthusiasts in the field of forest engineering to foster knowledge exchange across the world.

The event was preceded by the 2nd IUFRO Division 3 Doctoral Student Conference “Connecting Knowledge and Minds”. This unique conference was designed for young and energetic students. Attendees had ample opportunity to present their research work, discuss a variety of forest operations and engineering topics and receive feedback from peers in a friendly and constructive atmosphere. Field trips to private forests and local logging businesses provided opportunities to learn about working forests and sustainable forest management in Oregon, while overnight stays in central Oregon and lots of social events helped students to build close relationships, understand different perspectives and engage other cultures. The goal of the IUFRO Division 3 Doctoral Conference was to foster



Field trip. Photo by Christian Kanzian

a global community and network among future research scientists in the Division 3 research fields. [More...](#)

Systems Analysis in Forest Resources

The 19th Symposium on Systems Analysis in Forest Resources (SSAFR) brought together researchers and practitioners that develop and apply methods of optimization, simulation, management science and systems analysis to forestry problems. It reported the state of the art on the development and use of operations research and systems analysis to enhance forest management planning. The Symposium was organized by Prof. Yu Wei from the Warner College of Natural Resources of Colorado State University (CSU). It was co-sponsored by IUFRO Units 4.04.04 [Sustainable forest management scheduling](#) and 3.04.00 [Forest operations management](#), as well as by the project DecisionES - Decision Support for the Supply of Ecosystem Services under Global Change, and the Department of Forest and Rangeland Stewardship, CSU. [More...](#)

Forest Mensuration and Modelling Chats

Research Group 4.01.00 [Forest mensuration and modelling](#) organized a very successful webinar series. The series highlighted forest mensuration and modelling research across a variety of research areas and allowed for scientific exchange across the globe, while ongoing travel restrictions related to COVID-19 made the organization of in-person meetings challenging. The webinars addressed a variety of topics, including, for example, “Growth and yield modeling of fast-grown intensively managed forest plantations in Chile”, “Forest carbon modelling: challenges and examples from Canada”, or a “Field Study on Critical Height Sampling and its Antithetic Variants”. [More...](#)

IUFRO Tree Biotechnology Conference

The IUFRO Tree Biotechnology Conference is the biennial meeting on genomics, molecular biology and biotechnology of forest trees, associated with IUFRO Working Party 2.04.06 [Molecular biology of forest trees](#). The 2022 meeting was held online in coordination with the 2nd Forest Tree Molecular Biology and Biotechnology Conference on July 6 to 9 and was hosted by Dr. Vincent

Chiang, Dr. Chuanping Yang and Dr. Wei Li (Northeast Forestry University and North Carolina State University).

In addition to a robust scientific program, the meeting celebrated the first awardees of the newly created *IUFRO WG 2.04.06 Award: Excellence in Forest Molecular Biology and Genomics*, which was presented to Dr. Jacqueline Grima-Pettenati. Dr. Jack Wang was the recipient of the associated *Early Career Award*.

The scientific presentations at the conference highlighted cutting-edge advancements in many facets of forest biotechnology research, including applications of genomic selection in forest genetics and breeding, tree physiology, stress response, molecular breeding, wood development, “omics” technologies, and the social and economic impacts of genetically modified (GM) trees. [More...](#)

Managing Mixtures vs. Monocultures: What Do We Know?

Planted forests represent an essential nature-based solution to meet the growing demand for sustainable wood while contributing to climate change mitigation and ecosystem restoration. More diverse planted forests can meet broader societal goals by enhancing resilience and ecosystem services compared to monoculture plantations. However, there is often a gap in the information, experience, and genetic material necessary to implement mixed-species planted forests at scale.

To address this knowledge gap, the UN Food and Agriculture Organization (FAO), the TreeDivNet network, and the International Commission on Poplars and Other Fast-Growing Trees Sustaining People and the Environment (IPC) organized a workshop aimed at reviewing the state of the art in the management of mixed and pure planted forests. The workshop was hosted by the IUFRO Task Force [Resilient Planted Forests Serving Society and Bioeconomy](#) and was titled “Management of mixed and pure planted forests: Stock-taking of science and practice”. [More...](#)

Let's Talk About Planted Forests: Clearcutting

On 25 November 60 participants attended the webinar organized by the IUFRO Task Force [Resilient Planted Forests Serving Society and Bioeconomy](#) and hosted by the European Institute Of Planted Forest (IEFC). This webinar of the “Let's Talk About Planted Forests” series addressed the subject of clearcutting and its impact on plantations following the collective “CREFF Expertise”, led by the GIP Ecofor and the RMT AFORCE since March 2021 with the aim to draw up the state-of-knowledge on clearcutting and forest stand renewal, and an analysis of renewal methods in a climate change context. The event offered an opportunity to invite three experts to share their views and exchange with the participants. [More...](#)



Photo IUFRQ, J. Burns

Biodiversity, Ecosystem Services and Biological Invasions

Forests cover more than 30% of the world's land base and provide numerous ecosystem services that are vital for human well-being and livelihoods. However, forests, forest landscapes and their biodiversity are under pressure from the loss and degradation of forest area and conversion to other land uses, as well as environmental and climate change. This theme focuses on how the loss of biodiversity and ecosystem services may be prevented or mitigated and how management regimes could be adapted to enhance biodiversity and control biological invasions. *Here are some of the activities in the IUFRO network with a specific focus on forest landscape restoration, forest ecosystem management, threats to biodiversity and tree health:*

Forest Degradation and Restoration

Forest degradation is a global phenomenon aggravated by global change. The session on "Forest Degradation and Restoration" at the All-IUFRO Conference brought together people working on issues related to forest degradation, including substantial tree mortality, failed forest rejuvenation, and loss of forest productivity and their implications both at the stand and the landscape level. The session was organized by the IUFRO Task Force [Transforming Forest Landscapes for Future Climates and Human Well-Being](#) together with the IUFRO Task Force [Monitoring Global Tree Mortality Patterns and Trends](#).

Discussions centered on questions such as: What can we learn from each other from the forest mortality and forest restoration fields? How can we make forest landscape restoration more successful? A major challenge identified was how to involve landowners and other stakeholders in restoration activities. To this end, context, communication and terminology are essential. [More...](#)

Forest Restoration Talks

The first of the new "Monthly Forest Restoration Talks" hosted by SUPERB (forest-restoration.eu) in partnership with the IUFRO Task Force [Transforming Forest Landscapes for Future Climates and Human Well-Being](#) featured forest restoration specialist John Stanturf. He spoke on the topic "If nature is the solution, what is the problem? A perspective from forest landscape restoration". Targeting researchers, practitioners, NGOs, policy makers and other interested stakeholders, the webinar series aims to investigate forest restoration questions from diverse scientific perspectives, with alternating focus on the global and European levels. This includes exploring practical forest restoration approaches, experiences and challenges worldwide. [More...](#)

Forest and Landscape Restoration in Ethiopia

The Ethiopian Forestry Development (EFD) and IUFRO's [Special Programme for Development of Capacities](#) (SPDC) led a forest landscape restoration (FLR) workshop in Adama, Ethiopia, on 28-30 November 2022. The Ethiopian government and many communities have invested substantial efforts into restoring degraded landscapes. In fact, the country's Climate Resilient Green Economy Strategy includes forest landscape restoration as a key element. Ethiopia made one of the largest global pledges for restoration under the New York Declaration on Forests and the Bonn Challenge. The workshop considered the local context and existing experiences in the country. The aim was to strengthen the capacities of FLR facilitators across relevant stakeholder organizations including government forest organizations, agricultural extension offices, academia, research organizations as well as NGOs. [More...](#)



Photo by Ethiopian Forestry Development (EFD)

Landscape Restoration Education in Southeast Asia

Educators from Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka and Thailand gathered to discuss forest and landscape restoration education in a three-day virtual workshop in October 2022. This came about in response to globally increasing demand for knowledge and expertise in landscape restoration. The aim was to share knowledge and experiences about existing natural resources management education systems and explore opportunities for closer regional collaboration. The Indian Council of Forestry Research and Education (ICFRE) and Indira Gandhi Natio-

nal Forest Academy (IGNFA) hosted this workshop in collaboration with [IUFRO-SPDC](#), the Global Landscapes Forum (GLF), and Wageningen University and Research (WUR). [More...](#)

Implementing Forest Landscape Restoration in Malawi

[IUFRO-SPDC](#) and its local partner, the Centre for Applied Systems Analysis (CASA), implemented a three-year project (September 2019 - August 2022) to develop capacities on forest landscape restoration (FLR) in Malawi. The aim of the project was to scale up FLR through developing a critical mass of well-trained practitioners. It was funded by the Audemars-Watkins Foundation and additional financial contributions were provided by the Ministry of Foreign Affairs of Finland, as well as in-kind contributions by CASA. [More...](#)

Launch of GLFx South Coast Guatemala Chapter

The GLFx South Coast Guatemala chapter presented in June 2022 aims at promoting forest landscape restoration in the Pacific lowlands of Guatemala and sharing experiences regionally and globally. It is an initiative of the ICC, INAB, and IUFRO through its [Special Programme for Development of Capacities](#) (SPDC) that communicates the activities that are carried out by the South Coast Restoration Network in the Pacific lowlands of Guatemala to contribute to the restoration of the forest landscape of the country. The Chapter is part of GLFx, the Global Landscapes Forum's network of community-led chapters and online communities of practice (CoPs) to accelerate local action towards more sustainable landscapes. [More...](#)



*Tree planting activity in Santa Lucía Cotzumalguapa, Guatemala.
Photo by Berny Ortega*

Forest Restoration – A Feasible Pathway for Sustainable Development?

Ambitious forest restoration targets have been set by organizations, governments and other national parties. Different initiatives emphasize different goals, like mitigating climate change, restoring ecosystem integrity and functionality, and benefits to rural dwellers.

The session of IUFRO's [Special Project on World Forests, Society and Environment \(IUFRO-WFSE\)](#) held at the World Forestry Congress in Korea took a critical look at the global forest restoration project by addressing some fundamental questions.

How feasible are the proposed forest restoration goals and targets? What are the links between forest restoration, biodiversity and ecosystem services? Who benefits from forest restoration and how and who bears the costs? How can environmental justice principles be upheld in profoundly different political, social and cultural settings? How will the complex interplay of ecological, social and economic factors that determine restoration feasibility, changing global environmental priorities, and the anticipated increasing impact of climate change influence alternative forest restoration pathways and scenarios? The session was based on the forthcoming book by IUFRO-WFSE: *Restoring forests and trees for sustainable development - Policies, practices, impacts and ways forward.* [More...](#)

Innovative Tools to Analyze Species-Environment Relationships

A Training School was organized within the framework of the COST Action CA18207 "Biodiversity Of Temperate forest Taxa to Orient Management Sustainability by Unifying Perspectives" (Bottoms-Up) on 4-5 October 2022 in Grenoble, France, involving IUFRO Working Party 8.02.01 [Key factors and ecological functions for forest biodiversity.](#)



Venue at INRAE, Grenoble

The Action challenge is to increase the degree of sustainability of European temperate forest management for overall ecosystem (multi-taxon) biodiversity. The Training School in Grenoble was the third of a set of Training Schools aimed at providing theoretical and practical tools for analyzing multi-taxon biodiversity data in forest ecosystems with an emphasis on bridging the gap between theory and practice. [More...](#)

Payment for Ecosystem Services in Costa Rica

The Spanish webinar "Pago por servicios ambientales: el caso de Costa Rica" by IUFRO Working Party 4.05.03

[Managerial economics and accounting in Latin America](#) was kindly hosted by Centro Universitario Regional (CENUR) Noreste, Sede Tacuarembó, Universidad de la República. It was part of a cycle of seminars started in 2019 by professors of the Forestry Engineering Department of the Northeast CENUR (Regional University Center) of the University of the Republic, Uruguay.

The presentations were broadcast live and are available on the Forestry Seminars YouTube channel. The webinar focused on an impact analysis of public policy related to protected areas and payments for protection. How effective have the policies been? And what if nothing had been done? Do these policies have an impact on poverty and deforestation? [More...](#)

7th IUFRO International Workshop on the Genetics of Tree-Parasite Interactions in Forestry: Understanding Forest Tree-Antagonist Interactions in a Changing World

Managed and natural forests provide essential ecosystem services worldwide, but sustainability of forests is currently at unprecedented risk. Large range expansions of pests and diseases, as well as sudden shifts to naïve host species can be observed. Due to the freedom of movement of people and goods across biogeographical zones, tree species are increasingly challenged by emergent invasive biotic threats.

Moreover, climate change is also increasing abiotic tree stresses, which synergistically interact with tree resistance leading to negative effects on tree survival and forest resilience. The scientific community is pushing for an urgent multidisciplinary and coordinated effort to solve these challenges, making use of current and new knowledge, strategies and technologies. Geneticists, evolutionary biologists, ecologists, phytopathologists, entomologists, plant physiologists, breeders and managers are all involved in this challenge.

The workshop involving Working Parties from IUFRO Division 2 [Physiology and Genetics](#) and Division 7 [Forest Health](#) (Working Parties 2.02.15, 7.03.11, 2.02.20, 7.02.05,

7.02.09) provided the ideal forum for updating knowledge, evidences, solutions and failures between scientific, academic and practical approaches. It also offered an opportunity to enhance the dialogue of long experienced expertise with the new generations of scientists, which will provide creative and new solutions in the near future. [More...](#)

Forest Health, Pathology and Entomology

From September 6-9, 2022, approximately 350 delegates (290 in-person and 60 remote) from 41 countries and five continents attended the IUFRO [All-Division 7 Conference](#) in Lisbon, Portugal. This meeting was the first joint meeting of the Pathology and Entomology Research Groups since the All-Division 7 sessions at the IUFRO 125th Anniversary Congress in Freiburg in 2017. The conference was kindly hosted by the University of Lisbon and supported by WSL, FABI, The Navigator Company and Pensoft.

There were four plenary presentations:

- “On the long-distance train to Green Deal – next stop: Insect Semiochemicals”
- “The role of fungi in shaping the ecology and behavior of bark and ambrosia beetles”
- “Preparedness and response to introduced tree pests and pathogens in Britain”
- “Global tree health in the future: A world of challenges and opportunities”

The winners of the “Soft Skills” mentoring programme for graduate students (see page 10) of IUFRO WP 7.03.16 [Behavioral and chemical ecology of forest insects](#) were supported to attend the All-Division 7 Conference.

The following Division 7 awards were presented:

The **George Varley Award** for Achievement in Forest Insect Ecology was presented to Prof. Manuela Branco.

The **Forest Health Achievement Award** was presented to Dr. Eckehard Brockerhoff.

A new award, the **Hartig-Patterson Award** for Excellence in Forest Pathology, was presented individually to two recipients, Prof. Mike Wingfield and Prof. Brenda Wingfield.

All-Division 7 Conference participants. Photo by Márcia Campana



Forest Diseases During Global Crises

Invasive forest pathogens and climate change are threatening the health and sustainability of our forest ecosystems. Promising disease management techniques are being developed to control forest diseases which include breeding, genetics, nanotechnologies and silviculture. Plant pathogens do not recognize boundaries, therefore, maintaining a global perspective when it comes to forest health protection is essential.

IUFRO Working Parties 7.02.02 [Foliage, shoot and stem diseases](#) and 7.02.05 [Rusts of forest trees](#) held a meeting titled “Foliar, Shoot, Stem and Rust Diseases of Trees - Forest Diseases During Global Crises” kindly hosted by USDA Forest Service (USFS) and supported by UNH, USFS, New Hampshire Division of Forests and Lands. This international conference meets every 2 to 4 years and provides a great opportunity for discussion among colleagues working globally with rust, foliage and stem diseases of forest trees. [More...](#)



Field trip. Photo by Tod Ramsfield

New IUFRO Task Force: Precision Pest Management (PPM) in Forest Ecosystems

There are numerous new and emerging technologies that allow for novel opportunities and greater precision in forest pest management. These include genomic and chemical analyses, data collection through smart technologies, sensing technologies for surveillance and integration, analysis and sharing of data across fields. These technologies allow for the development of much more accurate tools for pest management than has ever before been possible and have led to the emergence of an approach defined as Precision Pest Management (PPM).

This Task Force will explore and develop the concept of PPM across the continuum of forest ecosystems (e.g., natural, planted, urban forests). In addition, capacity in PPM varies geographically and within regions among groups. The Task Force will serve as a platform to: i) attempt to mitigate variation in capacity by connecting researchers

and practitioners working on pest management in forest ecosystems; ii) identify barriers to inclusivity in PPM; and iii) mentor early career researchers, providing them with opportunities to develop skills, networks and to engage with IUFRO. [More...](#)

Photo by Johannes Joubert



10th International Symposium Forest and Sustainable Development

Carpathian forests provide important economic, environmental and social services. Covering a large swath of land, it is natural that the issues and challenges faced by European forestry are also present in Romania. The conference supported by IUFRO Working Party 4.03.02 [Machine learning and computational ecology](#) in Brasov, Romania, aimed to foster the exchange of ideas among scientists from different disciplines who are actively involved in solving some of the issues currently faced by forestry.

A special focus was placed on modeling, with emphasis on the relationships between remote sensing, image analysis, and estimation. The symposium had the following five themes: forest ecosystem management, forest engineering, wildlife management, remote sensing and geomatics, and forest modeling. [More...](#)

Forest Expansion, Landscape Dynamics and Ecosystem Services in Europe

The goal of a symposium organized by IUFRO Working Party 8.01.02 [Landscape ecology](#) at the IALE (International Association for Landscape Ecology) 2022 European Landscape Ecology Congress was to address forest expansion in Europe and its impacts on landscape patterns, functioning and the wellbeing of society at several scales.

The symposium aimed to provide a science-based background for Europe to debate: i) the role of forests in the process of increasing socioecological and climate resilience, ii) the processes of transformation in forest cover and their relations to landscape sustainability and resilience, and iii) the participation of forest and landscape scientists and practitioners in forest landscape change. [More...](#)



Photo IUFRO, N. Grima

Forest, Soil and Water Interactions

Forests play an integral role in the supply of clean water for a range of uses, and also have critical interactions with climate. Much of the world's freshwater is provided through forested catchments and forests protect soil, water quality, flow regime and aquatic systems. Better managing forests and water will, directly and indirectly, support all 17 UN2030 Sustainable Development Goals (SDGs). The theme "Forest, Soil and Water Interactions" addresses the contribution of forests, especially natural forests, to the resilience of water supply for humans and the delivery of related ecosystem goods and services.

Here are some events and activities in 2022 that particularly addressed this topic:



All-IUFRO Conference field trip. Photo IUFRO, J. Bolaños

Forests and Water

The Task Force [Forests and Water Interactions in a Changing Environment](#) together with IUFRO Division 8 [Forest Environment](#) organized a session at the All-IUFRO Conference in September 2022. The [session](#) started with a presentation by Professor Irena Creed, Department of Physical & Environmental Sciences, University of Toronto Scarborough, Canada, who highlighted the role of forests for fresh water supply.

She pointed out that tensions over fresh water supply were rising, and severe water shortages were anticipated in the next few years in many regions of the world. Water availability per person will decrease considerably in many areas. She also referred to the global assessment report on forest and water interlinkages published by the [Global Forest Expert Panel on Forest and Water](#) in 2018, which also confirms that the management of forest-water relations directly and indirectly affects various Sustainable Development Goals, including SDG 1: No Poverty; SDG 6: Clean Water and Sanitation; and SDG 13: Climate Action, in terms of the impacts of forest management on water supplies and people, and likely co-benefits and trade-offs.

The session also presented case studies from around the world that demonstrated the close connections between forest-water management and each of the three SDGs under a changing environment and emphasized practical forest management strategies and policy implications.

Field trip to the "Emperor's Well"

Participants of the All-IUFRO Conference had the chance to visit "Kaiserbrunn", which literally translates as "Emperor's Well", the place where Vienna's drinking water originates.

It is located south of Vienna in the Rax-Schneeberg region at the border between the states of Lower Austria and Styria at the edge of the Eastern Austrian Limestone Alps. The region experiences mountain climate with a lot of rain and snowfall in winter, which provides excellent conditions for drinking water. During the 19th century Vienna recorded a strong population growth, which resulted in a shortage of water especially for poor people. Thus, Emperor Francis Joseph decided to have the First Vienna Mountain Spring Pipeline built. The 95km-long pipeline was opened in 1873 after a construction period of roughly four years. In 1910 a second water pipeline of ca. 180km was opened. The water flows at a speed of 5km/h by gravitational energy only. It takes about 36 hours for the water to reach the city of Vienna from the Rax-Schneeberg region. The forest in the water catchment is owned and managed by the City of Vienna with a focus on ensuring high-quality drinking water for Vienna's about two million inhabitants. [More...](#)

Managing Forests for Water

One of the side events of the World Forestry Congress in Seoul, Korea, focused on the forest-water nexus. Forests and trees are an integral component of the water cycle regulating water quantity, quality and timing, as well as providing protective functions, such as soil and coastal erosion, flood and avalanche control.

Forest and mountain ecosystems serve as source areas for more than 75 percent renewable water supply, providing water to 90 percent of urban centers globally. Therefore, forests are vital for water security. However, as tree cover on landscapes change, so does the hydrology of the landscape.

Understanding this close relationship between forests and water is fundamental for forest and natural resource

managers and policy makers to have a holistic view of the consequences of their management practices and policies. Science should inform management strategies for the world's forests, especially considering the ongoing climatic crisis and its impact on forest resources and people.



Photo IUFRO, G. Wolfrum

Under the umbrella of The Global Forest Resources Assessment (FRA) 2020 a thematic study on managing forests for water was conducted through a collaboration with U.S. Department of Agriculture (USDA), IUFRO and other international organizations, research centers and universities. The publication "[A Guide to Forest-Water Management](#)" aims at improving the information base on water ecosystem services of forests through monitoring, and at providing guidance on how to manage forests for these services, including protective functions.

Webinar: Humusica 2022 - Soil and Climate Warming

The purpose of the webinar organized by IUFRO Working Party 8.02.03 [Humus and soil biodiversity](#) was to spread the idea that something can be done to stop climate change and the loss of biodiversity on our planet; and that everybody can do something, individually and collectively. The meeting was related to the final congress of a research program called ALBA (Albarella Biodiversity Environment Laboratory). Albarella is an island near Venice, and the University of Padua, in collaboration with the inhabitants of the island gathered in the "Associazione Comunione Isola di Albarella", financed this research, which aims to promote the sustainable development of the island. [More...](#)

Eighth International Poplar Symposium (IPS VIII)

The Eighth International Poplar Symposium (IPS VIII) "Poplars and Willows in the Era of Global Change: Agroforestry, Environmental Improvement and Ecosystem Services to Enhance Livelihoods" was held online from Novi Sad, Serbia in October. It was jointly organized by IUFRO Working Party 2.08.04 [Poplars and willows](#) and the Institute of Lowland Forestry and Environment (ILFE). The IUFRO

Working Party works closely with the International Commission on Poplars and Other Fast-Growing Trees Sustaining People and the Environment (IPC) of the Food and Agriculture Organization (FAO) of the United Nations. Presenters talked about potential contributions of poplars to a circular bioeconomy, or the added value of willows, for example, for agroforestry systems, or soil stabilization.

Several presentations referred to water and soil topics, including water use efficiency related to the growth of poplars and willows, performance of these tree species growing on soil irrigated with wastewater, and soil stabilization effects, for example. A Book of Abstracts is available. [More...](#)

Short Rotation Woody Crops International Conference

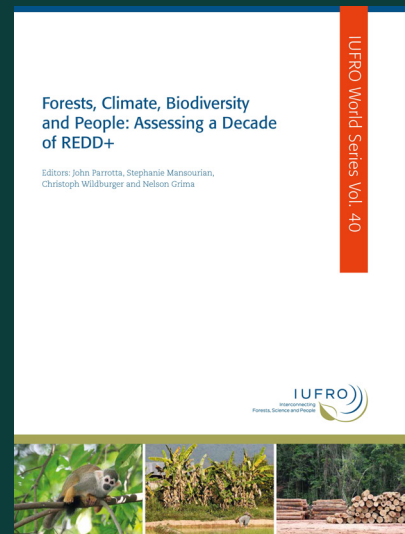
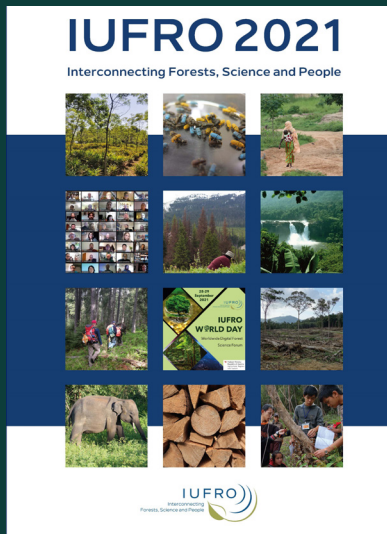
Historically, international efforts for the development of short rotation woody crops (SRWCs) focused on the production of biomass for bioenergy, biofuels and bio-products, while research and development over the past decade has expanded to include broader objectives of achieving multiple ecosystem services. In particular, silvicultural prescriptions developed for SRWCs have been refined to include woody crop production systems for environmental benefits such as carbon sequestration, water quality and quantity, and soil health. In addition, current systems have been expanded beyond traditional fiber production to more valuable wood products and to other environmental technologies that incorporate SRWCs as vital components for phytotechnologies (e.g., phytoremediation), urban afforestation, ecological restoration and mine reclamation.

The 2022 Short Rotation Woody Crops International Conference involved IUFRO Units 1.03.00 [Short-rotation forestry](#) and 2.08.04 [Poplars and willows](#). It brought leading SRWC organizations to enhance information exchange and provide a platform for developing future collaboration around SRWC production systems. It was intended for researchers, forestry practitioners, decision makers and students who are interested in the state of the science and practice of growing and using fast-grown trees for forest products, bioenergy and site remediation. [More...](#)



Photo by Hans on Pixabay

IUFRO Publications



IUFRO Annual Report 2021

IUFRO News: **12 issues** (3 double issues)

IUFRO Vernetzt: **3 issues** (German newsletter)

IUFRO Spotlight: **1 article**

(The IUFRO Spotlight was terminated in 2022 and plans for a Podcast series to start in 2023 were developed.)

IUFRO Media **Releases: 5**

IUFRO General Publications:

Outstanding Science and Services in IUFRO: Three Awards of the International Union of Forest Research Organizations: 1953-2020 ([Download](#))

Joint Publications:

- Global Assessment of Forest Education ([Download](#))
- Inspire for the Future: The Role of Forests in Ensuring Sustainable Production and Consumption ([Download](#))

IUFRO World Series 40:

Forests, Climate, Biodiversity and People: Assessing a Decade of REDD+ ([Download](#))

IUFRO Policy Briefs

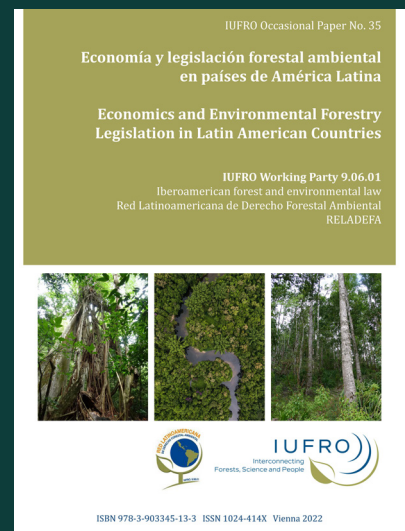
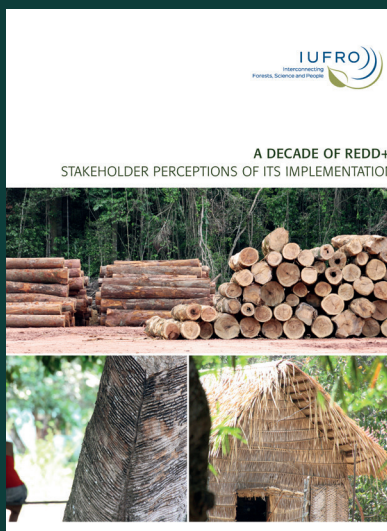
- Forests, Climate, Biodiversity and People: Assessing a Decade of REDD+ ([Download](#))
- A Decade of REDD+: Stakeholder Perceptions of its Implementation ([Download](#))

Occasional Paper 34

Governance of Forest Landscape Restoration: Analysis of Governance Issues in Cases from Ghana and India ([Download](#))

IUFRO Occasional Paper 35 in English and Spanish

Economics and Environmental Forestry Legislation in Latin American Countries / Economía y legislación forestal ambiental en países de América Latina ([Download](#))

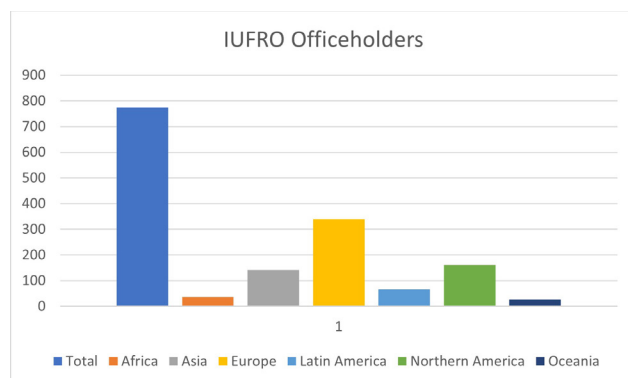


IUFRO Structure and Meetings

774 voluntary IUFRO Officeholders coordinate IUFRO Units and Task Forces.

Officeholders per Region:

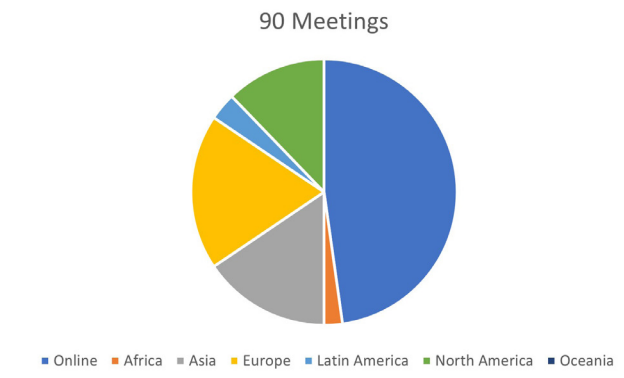
Africa (37), Asia (142), Europe (340), Latin America (67), Northern America (161), Oceania (27)



A total of 90 meetings were organized, 43 of which were held online, 8 of the others were hybrid.

IUFRO Meetings per Region

Online* (43), Africa (2), Asia (14), Europe (17), Latin America (3), Northern America (11), Oceania (0)



* Online meetings are not attributed to regions.

257 IUFRO Units: 9 Divisions with 63 Research Groups (RG) and 185 Working Parties (WP)

Division 1 – Silviculture (10 RGs; 21 WPs)

Division 2 – Physiology and Genetics (5 RGs; 29 WPs)

Division 3 – Forest Operations Engineering and Management (10 RGs; 5 WPs)

Division 4 – Forest Assessment, Modelling and Management (5 RGs; 27 WPs)

Division 5 – Forest Products (11 RGs; 21 WPs)

Division 6 – Social Aspects of Forests and Forestry (10 RGs; 3 WPs)

Division 7 – Forest Health (2 RGs; 25 WPs)

Division 8 – Forest Environment (4 RGs; 27 WPs)

Division 9 – Forest Policy and Economics (6 RGs; 27 WPs)

9 IUFRO Task Forces

Task Force - Forest Education

Task Force - Monitoring Global Tree Mortality Patterns and Trends

Task Force - Forests and Water Interactions in a Changing Environment

Task Force - Gender Equality in Forestry

Task Force - Resilient Planted Forests Serving Society & Bioeconomy

Task Force - Strengthening Mediterranean Nursery Systems for Forest Reproductive Material Procurement to Adapt to the Effects of Climate Change

Task Force - Unlocking the Bioeconomy and Non-Timber Forest Products

Task Force - Transforming Forest Landscapes for Futures Climates and Human Well-Being

Task Force - Precision Pest Management (PPM) in Forest Ecosystems

4 IUFRO Special Programmes and Projects

Special Programme for Development of Capacities ([IUFRO-SPDC](#))

Global Forest Expert Panels ([IUFRO-GFEP](#)) Programme

Special Programme Directors' Forum ([IUFRO-SPDF](#))

Special Project on World Forests, Society and Environment ([IUFRO-WFSE](#))

IUFRO Honours and Awards

Distinguished Service Award

In the closing ceremony of the All-IUFRO Conference, three Distinguished Service Awards (DSA) were handed over by Elena Paoletti, the Chair of the IUFRO Honours and Awards Committee (HAC), for outstanding and valuable services to IUFRO.

The three recipients are:

- **Ladislav Paule**, former Professor of Forest Genetics and Tree Breeding at the University of Forestry and Wood Technology in Zvolen, Slovakia, and IUFRO Division 2 Coordinator
- **Eero Mikkola**, Luke, Finland, Coordinator of the Global Forest Information Service (GFIS) until 2021
- **Renate Prüller**, Austria, Coordinator of the IUFRO project SilvaVoc for multilingual forest terminology



From left to right: John Parotta, IUFRO President; DSA recipients Ladislav Paule, Renate Prüller, Eero Mikkola; Elena Paoletti, IUFRO HAC Chair. Photo IUFRO

Certificates of Appreciation 2022

- **Don Hodges**, for chairing the Scientific Committee of the All-IUFRO Conference
- **Hubert Hasenauer**, for hosting the 61st IUFRO Enlarged Board Meeting in Vienna, Austria, and organizing the field trip of the subsequent All-IUFRO Conference

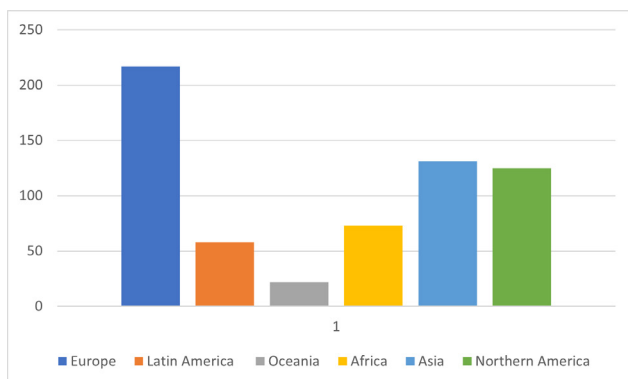
IUFRO Thanks Donors

Austrian Government (Ministry for Agriculture, Regions and Tourism):	648,833 €
Ministry for Economic Cooperation and Development (BMZ), Germany:	450,000 €
Ministry for Foreign Affairs (MFA), Finland:	400,000 €
US Forest Service:	211,789 €
National Institute of Forest Science (NIFoS), Korea:	100,631 €
Mondi:	50,000 €
Austrian Research Centre for Forests (BFW):	30,000 €
Food and Agriculture Organization of the UN (FAO):	21,600 €
Eva Mayr Stiehl Stiftung	9,849 €
TOTAL:	1,922,702 €

IUFRO Welcomes New Members

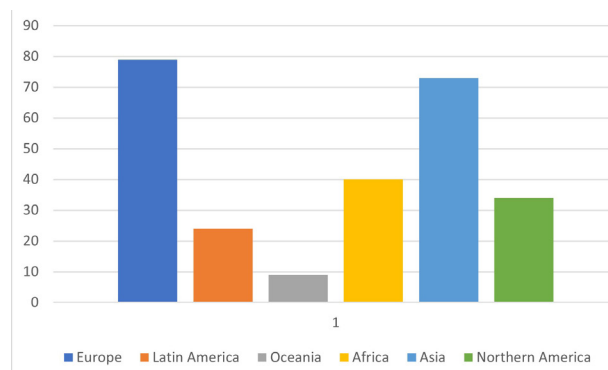
Member Organizations: 626

Europe: 217
 Latin America: 58
 Oceania: 22
 Africa: 73
 Asia: 131
 Northern America: 125



Associate Members: 259

Europe: 79
 Latin America: 24
 Oceania: 9
 Africa: 40
 Asia: 73
 Northern America: 34



New Member Organizations (MO)

- MO 1061.00.00 Greece
 School of Forestry and Natural Environment
 Aristotle University of Thessaloniki
- MO 1062.00.00 Spain
 Research Center for Energy, Environment and Technology
 (CIEMAT)
- MO 1063.00.00 Zambia
 Envirosmart Solutions
- MO 1064.00.00 Thailand
 RECOFTC Regional Office
- MO 1065.00.00 United States
 Department of Natural Resources and the Environment
 University of New Hampshire
- MO 1066.00.00 Ghana
 Communities Forestry and Social Development Organization – COFOSODE
- MO 1067.00.00 Peru
 Asociación para la Conservación de la Cuenca Amazónica
- MO 1068.00.00 Ghana
 University of Environment and Sustainable Development
- MO 1069.00.00 New Zealand
 The New Zealand Institute for Plant and Food Research Limited

New Associate Members (AM)

- AM 967 United States
 Stewart, J. Ryan
 Brigham Young University
- AM 968 China
 Wang, Hongyi
- AM 969 United Kingdom
 Nyantason, Emmanuel W.
 Multi-Stakeholder Governance and Accountability Programme (MFGAP)
- AM 970 Italy
 Mokea, Darceline Anangi
 Università di Padova
- AM 971 Slovenia
 Zunic-Kosi, Alenka
 National Institute of Biology
- AM 972 Germany
 Hagenah, Sinan Sebastian
- AM 973 Nigeria
 Anguruwa, Gloria Titi
 Forestry Research Institute of Nigeria
- AM 974 Fiji
 Adegoke, Idowu Abimbola
 Fiji National University

AM 975 Nigeria
Sadiku, Nusirat Aderinsola
University of Ilorin

AM 976 Ukraine
Korsovetskiy, Volodymyr

AM 977 Ghana
Eshun, Fatima
University of Environment and Sustainable Development

AM 978 India
Manoharan, Balachander
Gaiagen Technologies Private Limited

AM 979 Azerbaijan
Isgandarli, Elnara

AM 980 Cameroon
Mokake, Seraphine
University of Douala

AM 981 Cameroon
Godwill Tobouah, Nyanchi
University of Yaoundé

AM 982 United States
Kawamoto, Sumire

AM 983 Italy
Paoletti, Elena
CNR IRET

AM 984 Italy
Hoshika, Yasutomo
CNR IRET

The International Union of Forest Research Organizations (IUFRO) is the global network for forest science cooperation, open to all individuals and organizations involved in forest research and forest-related sciences. It is a non-profit, non-governmental and non-discriminatory organization with a long tradition dating back to 1892. IUFRO attains its objectives by networking activities including the generation, exchange and dissemination of scientific knowledge and practices, by the provision of access to relevant information, and the assistance to scientists and institutions to strengthen their research capacities. *If you would like to get in touch with IUFRO, write to office@iufro.org and/or visit <https://www.iufro.org>*



All-IUFRO Conference participants. Photo IUFRO, J. Bolaños