

**SEASON 1 EPISODE 6: The way forward for forests, science, and people**

**EPISODE TRANSCRIPT**

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The best strategy to encourage young people is to listen, collaborate and invest. Listen to our perspectives and needs to prepare ourselves for our career in forestry, collaborate with us in on ground and project level initiatives, and most importantly, invest in us so that we can successfully pave the way for the youth towards holistic engagement in the forestry sector.

***Intro***

**JOSE:** Welcome back to Branching out: the forest podcast, where we connect forests, science, and people. Brought to you by the International Union of Forest Research Organizations, IUFRO. Let's discover the role of forests and trees for people and nature, while we unravel complex forest topics and keep you up to date with forest research.

**JOSE:** This is a bittersweet moment, because this is the season finale, and we have some great company. To recap, we started this season with general information about the IUFRO World Congress 2024 in Stockholm (have you already registered?, if not go to <https://iufro2024.com/>), then we talked to some excellent guests about resilience and adaptation, forest bioeconomy, biodiversity and on our previous episode we covered a lot of topics regarding the connections between forest and society with 10 min extra of content, so if you haven't heard it, please check it out.

***Intro participants***

**JOSE:** So to commemorate this moment we decided to host a very special party of sorts. Here with me is Daniela Kleinschmit who will become IUFRO's President after the Congress, Woodam Chung, who will oversee IUFRO Divisions as Vice-President, and last but certainly not least, Isabelle Claire Dela Paz, President of IFSA. Welcome!

**DANIELA:** Hello, Jose. Good to see you.

**DANIELA:** My name is Daniela Kleinschmit and I'm professor for forest and environmental policy at the University of Freiburg, in the very southwest of Germany. And well, I'm, at the moment, Vice-President for Divisions of IUFRO and the incoming IUFRO President.

**WOODAM:**  Good to see you and everybody

**WOODAM:**  My name is Woodam Chung. I'm a professor of forest engineering at Oregon State University in the United States. I'm also deeply involved in IUFRO currently serving as the IUFRO Division 3, which is forest operations, engineering and management and IUFRO Division 3 Coordinator and I'm also the incoming IUFRO Vice-President for Divisions.

**ISABELLE:** Hi, Jose, Daniela, Woodam, and to our listeners, I am Isabelle from the Philippines, and I am the President of IFSA, which is the largest association of students from forestry and related sciences worldwide.

**JOSE:** What are you expecting from the IUFRO Congress or what memories does it bring?

**WOODAM:**  I just want to say that I am incredibly excited about the Stockholm IUFRO World Congress in June. We've all gotten used to online meetings, but you know, they cannot just replace the energy of being in the same room with people who share their passion. Just picture what it will be like having 4000 forestry experts exchanging ideas. I'm so much looking forward to all the amazing conversations and collaborations and of course celebrating with colleagues and friends over a glass of beer as well.

**ISABELLE:** So the youth will play such a pivotal role in the Congress because of how much space we are given for our advocacies. And some members, including myself, are very excited to learn, interact, and be inspired by forests, experts, researchers, and practitioners from around the world, and since this is my first time for World Congress, I am personally excited to meet young forestry professionals like myself at the Congress and see Stockholm for the first time. I'm looking forward to discuss more about this in today's conversation.

**DANIELA:** I'm very much looking forward as well to the IUFRO Congress. It's only a few days to be there and to meet everybody, and for me, the IUFRO Congresses, and Isabelle, it's some more for me, so it's not the first time I've been on an IUFRO World Congress and I can ensure you it's a great pleasure and it's something you will never forget about, because you're meeting so many friends, old friends and new friends. And they are from different disciplines and they are from different parts of the world. And so having this exchange, having the opportunities to learn about the newest news of science from the different disciplines, but as well, well, to meet those friends. And even if I'm not drinking beer, Woody, I'm very much looking forward to seeing you and to see Isabelle and Jose and every anyone else. So it's really it's a great pleasure to have everybody there. And so for me, it's the sessions as such that you learn about new things, but as well the coffee breaks, which is the most important issues there.

**JOSE:** Welcome to all of you, and I'm going to start with Daniela, what are some of the challenges that you foresee for the forest research community for the coming years?

**DANIELA:** I think one of the challenges we all know, that we have been aware of for decades now, is the one of climate change and it's not climate change as such, that's changing the world, but for sciences as well, is difficult, because we have to do decisions or we have to do our sciences well under uncertainty. So we don't know exactly what is coming up in the next year. So that might be one of the biggest challenges for the sector and as well the foresee research has to do because we don't know how situations will be in five years from now in the different regions of the world. And it has very well different effects on different regions in the world. And I think to cover that and to understand that we have uncertainties as well in science that is a big challenge for an organisation which is IUFRO, we want to have responsible decisions, we want to have robust science and all of that but still, we don't know exactly how it will turn out and we have to live with that and we have to cover that as well. So that is one from the science perspective and more from the organisational perspective, I would think that well, still, and we have discussed that for many years as well that we want to give a global perspective on forest sciences, which is not always easy because we need to well cover different regions as well with different priorities, with different goals. And what is in one region very important might be not for the other regions and to well to cover that in an organisation like IUFRO that is another challenge we have to well, we have to deal with in the next years as well.

**JOSE:** How do research, communication, and outreach play a role in supporting the forests in the world and safeguarding natural resources for future generations?

**DANIELA:** That was a very long question, Jose. It was transfer outreach, communication and the young generation. Is that true? Is that all? Anything else, Jose? OK, I thought we could make it a little bit larger. I think it's very important of course be because well, we can do lots of wonderful and interesting research. And for researchers that is maybe the first goal to do that. But on the other hand, if we just keep it for ourselves and our for our own community, then it's getting difficult. So if Woody has wonderful results from his research, and he does publish it in wonderful journals. It will be just his peers. Yeah, of course he's excited about that. And you should be. Well, that is one of our things we like, we love to do, in which we've learned to do. But on the other hand, it will only reach this community, and that's the same for me. So if I'm publishing something that is interesting and I feel very rewarded and I have published this great stuff and so on, and then it's read by my colleagues who know me already and who know parts of the story, but we need to bring it as well to the political decision makers. And so that is as well part of an organisation like IUFRO to do that stuff to be well in communication being in transfer and of course while they use, Isabella, is already in the in the online room and the digital room, I think it's most important and it's for IUFRO as well very important that we keep younger generations well integrated in IUFRO right from the beginning because it's you who should set the agenda and it's maybe not us, the older person who say what might be relevant in 10 years from now. Well, Woody, you are laughing. You're of course not old, but some might be.

**JOSE:** Now, Woodam, you work in the field of forests innovation, can you give us some examples of innovative approaches that have been successful in supporting forest research and management?

**WOODAM:**  Well, I'm not able to publish wonderful papers like Daniela said, but some of the work that I'm doing is related to artificial intelligence. AI, as you all know, artificial intelligence, AI is everywhere these days. And forestry is no exception. We have seen it revolutionised the way we analyse data, but what about the actual work? out in the woods? Well, get ready because smart machines are on their way. And so picture this harvester machines with AI eyes that don't just see a forest, but individual trees. They can scan each tree measuring size, shape, location, even defects. And in real time, the AI decides which trees need to go for the good of the forest. But it's not just about the machine. Imagine the machine talks to the operator through augmented reality, highlighting the tree, the right trees to cut, guiding the process or even wilder, a machine that does the cutting all on its own without an operator. That's the future of forestry. But the more important thing is that this isn't just about efficiency. It is about taking care of our forest field workers and forests better than ever. Think about those critical forest thinning projects, the ones that help reduce wildfire risk or improve forest health, such as forest restoration work. Instead of just eyeballing the work, AI can be the expert guide pinpointing exactly which trees need to go away for the overall health of the forest. Plus, knowing the quality and type of wood before the tree is even cut that changes everything in terms of waste and efficiency. The right logs can go to the right places for the right uses. It's a win for the forest and a win for the industry. Well, this stuff might sound like a science fiction

**JOSE:** I actually thought about Terminator 1, 2, 3...

**DANIELA:** and Mission Impossible.

**WOODAM:**  That's so this stuff might sound like science fiction, as you point it out, but trust me, it's happening, really, researchers are working hard to bring these kinds of technology out of the lab and get them into the hands of forest workers.

**JOSE:** When I first read and later heard from Elena Paoletti in our first episode something about forestry 4.0, I was quite intrigued, what is this about?

**WOODAM:** Well basically it builds on the same industry 4.0 concept we saw in manufacturing such as smart technology, AI, automation, all those good digital and information technology. The AI powered harvester I mentioned earlier, that is a good example of forestry 4.0 in action. But here is the thing, industry is already talking about the next step, industry 5.0. And it's all about focusing on people and the planet, not just profits and growth. Does this sound familiar? This is how forestry has operated for a long time already: sustainability, community. It's in our DNA. So when it comes to tech and innovation, well forestry we've been we've sometimes been playing catch up. Right. Catch up other industries because we are lagging behind from steam power to the latest digital technology, but this time with industry 5.0, forestry 5.0 I think it's our chance to lead. We can be the blueprint showing the world how an industry can be sustainable, human centred and cutting edge together. So I would say our time is coming.

**DANIELA:** Wow. I like the optimism. Right, Woody, it's actually great to hear that in 5.0, humans should play a central role. I think that was missing a lot in the in the versions before. And it's of course very nice to hear that industry can count from 1 to 5. That's great but, anyway, I think it's very important to get the human more into the centre.

**WOODAM:**  Yes, actually one of the research that my lab has been doing is also how to help force workers physically using exoskeletons. So it's like we talked about science fiction robocops, right? Or Terminator. So force workers, you know, working out in the woods, it's a physically very high demanding job and very difficult and dangerous. So we're looking at the exoskeletons, wearable devices that can support their muscles, their backbone and so on. So we are looking at how effective they would be when the when the timber fallers wear them while cutting the trees with chainsaw and also tree planters, yeah.

**DANIELA:** You were talking with Woody about the innovation part and I was wondering whether social innovation is relevant in there, too. And of course whether you are going to present this science fiction stories as well in Stockholm.

**DANIELA:** Oh but I I'm pretty sure that you have included it, isn't it? So that that well it's as well a matter on. Well, how people are working together or what is the best way on working together to get new ideas about, well new governance versions or new management information or something like that. So all that could be included in social innovations, which is really important as well for technical issues in the end, so getting networks done.

**WOODAM:**  As long as it helps people, as long as it helps how we can manage forest better. That's all we want.

**WOODAM:**  That's very important. But you know, myself and my team, you know, we are engineers basically. So we are developing devices and technology techniques but we are not really good at social aspect of those innovations. The Exoskeletons that I mentioned is about safety and health of forests workers. But you know how that benefits the community, you know, the people, that's all what you have been doing, Daniela, and your colleagues.

**JOSE:** And that's we have this World Congress, so that the two of you can meet and see how the social innovation can be included in projects such as the exoskeleton and others that include AI.

**JOSE:** Isabelle, what strategies or initiatives could be implemented to encourage more young people to pursue careers in forestry and research?

**ISABELLE:** Since the last decade, there's been a decrease in the number of young people interested or engaged in the forestry sector because of factors like a lack of awareness about career opportunities in forestry and inaccessible resources to develop our skills to pursue a career in the sector and this was also my personal struggle when I was just starting out as an undergraduate in my forestry programme, but thankfully, because of the capacity development initiatives of organisations like IFSA and IUFRO, I became more aware of what my future could look like and how I can contribute to the future of forests, and this is the exact essence of IFSA beyond connecting forestry students around the world, our volunteers create enriching programmes that develop the academic and professional skills and experiences of our members. IFSA and IUFRO have been strong partners for a long time now, given that both organisations have similar goals when it comes to strengthening forestry education. And one of the most significant collaborations is the IFSA and IUFRO Joint Task force on forestry education, which brings together students, educators and other stakeholders to fill in the gaps that traditional forestry education cannot meet, as well as highlight the different ways to make forestry attractive for the young people. And we do this by developing research that identifies issues and solutions for effective forestry education and communicate these findings to stakeholders. In 2021 IFSA and IUFRO published the Building a successful forestry career in Africa, book which we distributed to forestry universities in Africa to raise awareness among the African youth on the different opportunities that they can take to pursue a successful career in forestry. So the Joint Task Force also creates educational activities like webinars and competitions to capacitate forestry students and educators with knowledge and skills that we don't typically gain in the four walls of our classrooms. We recently initiated the global competition on best practises in forest education where we recognise the work of educators who innovate on ways to promote forestry education during the COVID-19 pandemic until now. And actually the winners will be awarded during the upcoming IUFRO World Congress in Stockholm, Sweden in June. And also we will be celebrating the achievements in combination of the Joint Task Force. So this is something that we should definitely look forward. And just by looking at the impressive efforts that we have been creating with IUFRO, the best strategy to encourage young people is to listen, collaborate and invest. Listen to our perspectives and needs to prepare ourselves for our career and forestry, collaborate with us in on ground and project level initiatives, and most importantly, invest in us so that we can successfully pave the way for the youth towards holistic engagement in the forestry sector.

**JOSE:** How can the IUFRO network promote more perspectives from the youth going forward?

**ISABELLE:** There are a lot of things that we can do to promote more perspectives from the youth going forward, but we can simply start by giving us young people the space to advocate for our perspectives and calls for action. Nowadays, more and more spaces are given to young people both online and offline to influence other people to tackle forestry and environmental issues, individually and collectively. At the 2024 IUFRO World Congress, IFSA we'll be leading a sub plenary session named Power of youth and scaling multi sectoral collaboration, the role of forests in achieving the vision for 2050, which will allow young people to highlight the role of youth in tackling global challenges in the forestry sector. And on top of that, we are also organising the incubator session where students and young people can present their thesis or projects to the international audience that we have at the Congress. But of course, we shouldn't stop there. Even more importantly, we must enable the youth to create spaces for ourselves by using our expertise and resources for capacity development. IFSA and IUFRO are conducting the mentorship programme for young participants at the 2024 IUFRO World Congress and through this programme we will be connecting students and scientists to learn from each other and at the same time develop the youth skills and interests in a scientific career. So going back, to the question by investing in the youth, we are creating an enabling environment for them to have a seat at the table and openly amplify their advocacies. We are building a solid foundation for a future where our forests and environment will be in the safe, capable hands of young generation. But of course, all these milestones in youth engagement would not be possible without the Joint Task Force, including Sandra as a coordinator. So thank you very much for your dedication and leadership as well as Woodam for your commitment to future youth engagement in the organisation. And of course, thank you and big congratulations to Daniela for being the first female and next President of IUFRO and for your unwavering support to the youth and I'm very honoured to be here today with three leaders that have paved the way for a forestry sector that values and honours the next generations of foresters, so we're looking forward to collaborating more and achieving more with IUFRO.

**DANIELA:** Maybe highlights what she has just said, is that the interest is really enormous when it comes to, well, working together and collaborating together, and I think it's on equal footing actually because we have this mentorship programme as Isabelle has mentioned it and there is really many more people than we have expected that have registered for becoming either a mentee or becoming a mentor at this IUFRO World Congress, which we think is already a great success that people want to talk to each other and want to work and collaborate. And one of the things we want to do apart from some networking meetings and so on. We want to give a prize as well. So there is a quiz or well it's more than a quiz is to ask them for developing a plan for a continued mentorship programme, how this could work for the future. And the best proposal will win that they can really implement it so it will be supported financially as well to get this done and to get a well continued mentorship programme. And there is another question and that is a question, what can IUFRO do to on a continuous basis as well to further develop this collaboration between the future generation of scientists and the for the moment generation of scientists to closer work together. And that is again a question which will be honoured by a prize at the IUFRO World Congress. Thank you a lot, Jose, for inviting us. It was a pleasure. And see you all in Stockholm very soon.

***Key takeaways***

**JOSE:** This is very good to close one season of the podcast already. So thank you very much to the three of you as well for this information. For me, I take that there is a lot still to do in terms of forest research in terms of forest science from the beginning. I will be a little bit scared about what Woodam is developing, but I'm sure that after the Congress, having some conversation, adding the social component to it, I will be more at ease after that. And then of course, all the opportunities that that we will see realise for youth in the Congress and for forest education as well. So thank you very much to all of you.

**DANIELA:** Thank you a lot Jose, for inviting us. It was a pleasure. And see you all in Stockholm very soon.

**ISABELLE:** Thank you a lot Jose, for inviting us. It was a pleasure. And see you all in Stockholm very soon.

**WOODAM:**  Thank you a lot Jose, for inviting us. It was a pleasure. And see you all in Stockholm very soon.

**JOSE:** I really hope to see you all in June at the World Congress. Thanks again to our guests and to you, our listener. Listen to *Branching out* wherever you listen to podcasts. We will be announcing a new season soon, so make sure you subscribe and follow us on social media. And check out more content from IUFRO at [iufro.org](https://www.iufro.org/) or click on the link in the show notes.

***Outro***