

Playful digital tools can help forests – but only if everyone gets to play

Network title: PlayFair Forest Network

Contact persons: Teppo Hujala (+358 50 336 7457 | teppo.hujala@uef.fi),
Philip Chambers (+358 50 430 5421 | philip.chambers@uef.fi)

Preamble:

Digital games, virtual reality, and interactive maps are increasingly used to involve people in forest-use planning. Our work shows that these playful tools can strengthen fair public participation in forestry — but only if the tools are designed so that everyone can take part.

The main text:

Imagine being asked to help decide the future of a forest near your home — but the discussion only happens online, in a mobile phone application you do not use, using language you do not understand. This is already a reality for many people across the Nordic and Baltic countries as forest governance is becoming increasingly digital.

On the positive side, playful digital tools can make complex forest issues easier to understand. Games and simulations can show long-term impacts of forest management activities in a way that technical reports cannot. Virtual walks can help people experience forests they may never visit. These tools can spark curiosity, learning, and dialogue.

But there is also a clear downside. Not everyone benefits equally. Several digital tools mainly serve people who are urban, well-educated, and comfortable with technology. Elderly forest owners, people with limited digital skills, rural residents, and those with lower incomes are often excluded. Instead of reducing inequalities, digital participation can quietly reinforce them.

One reason for these problems is that many tools are designed for an imagined “typical user”. However, forest owners and users are very diverse. A 70-year-old with lifelong forest knowledge may struggle with mobile applications, while a 22-year-old urban dweller may master digital tools but lack forestry experience. Expecting one solution to fit everyone simply does not work.

This matters because forest decisions shape landscapes for decades. When only some voices are heard, trust in forest institutions suffers and conflicts may rise. Fair participation is not just about being heard — it leads to more acceptable forest-use decisions by combining scientific knowledge with local experience.

During its first year, the PlayFair Forest network brought together researchers and practitioners from forestry, planning, technology, and game studies across Finland, Sweden,

Norway, Denmark, Latvia, and Italy. Together, we examined more than 25 playful forest technologies already in use for planning, education, and public participation. What we found is both promising and worrying.

Our research shows that the solution is not less technology, but better design and smarter use

First, digital tools should not replace face-to-face or low-tech participation. Hybrid approaches work best. For example, online maps can be combined with local meetings, phone support, or paper materials. This way, people can choose how they participate, and more people from diverse backgrounds are included.

Second, publicly funded forest technologies should meet clear standards of fairness. This includes accessible design, language options, and evidence that underrepresented groups benefit. If public money is used, public value should be guaranteed.

Third, forest professionals, educators, and software developers need support to work across digital divides. Some users need help with technology, while others need help understanding forest decision situations. Bringing software developers, researchers, and forest owners together, ideally in real forest settings, helps ensure tools reflect real needs, not assumptions.

For policymakers, early choices are especially important. Digital systems create long-term paths that are hard to change later. Regulation and funding should encourage innovation while protecting equity, data protection, and the environment. Technology should adapt to communities — not the other way around.

In the PlayFair Forest network, we have produced a more detailed Policy Brief with practical recommendations. We have also built a shared Research Agenda to better understand design principles and longer-term impacts of inclusive tools for playful forest planning. We will continue this work and aim to explore real-world examples of fair digital participation.

Playful digital technologies hold real promise for forest governance in the Nordic boreal forest settings. They can make participation more engaging, transparent, and meaningful. But fairness does not happen by accident. If we want digital forestry to serve Nordic society, equity must be built in from the very start.

Photographs:

- Helsinki_Oodi_group.jpeg (2000 x 924 pixels, 300 dpi)
 - Credits: Mari Selkimäki
 - Text: PLayerFair Forest Network had its first in-person workshop in Helsinki, May 2025.
- Spider-game.jpeg (2000 x 924 pixels, 300 dpi)
 - Credits: Mari Selkimäki
 - Text: The Network's field excursion in Helsinki Central Park demonstrated augmented reality games.