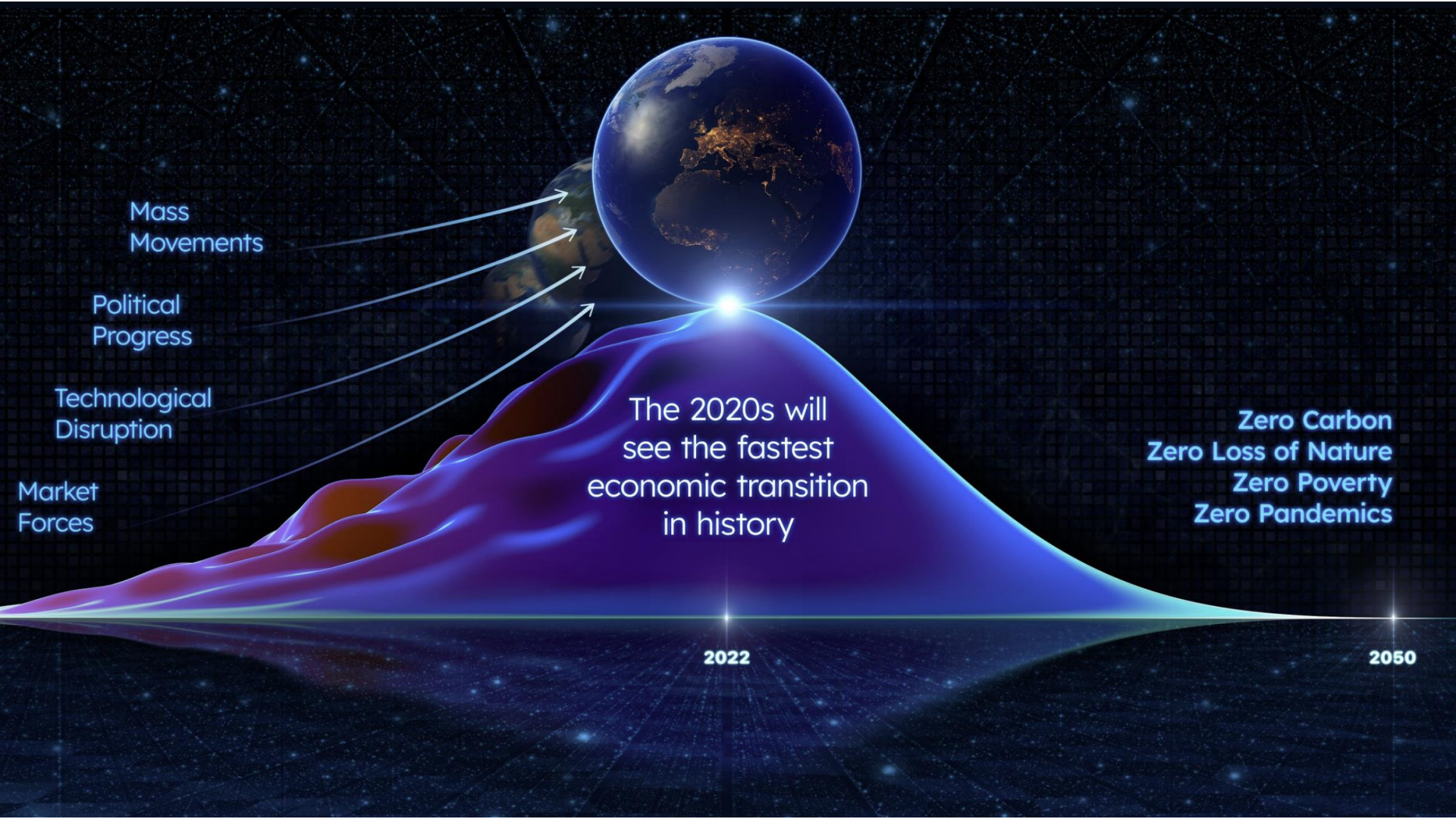


Moving from clear-cut based forest management to closer to nature in Estonia - mission possible?

Silvia Lotman
Estonian Fund for Nature

Workshop on the implementation of the European Commission's Forest Guidelines in the Boreal Region
27-28 January 2025





Mass
Movements

Political
Progress

Technological
Disruption

Market
Forces

The 2020s will
see the fastest
economic transition
in history

Zero Carbon
Zero Loss of Nature
Zero Poverty
Zero Pandemics

2022

2050

Sociotechnical transitions for deep decarbonization
Accelerating innovation is as important as climate policy

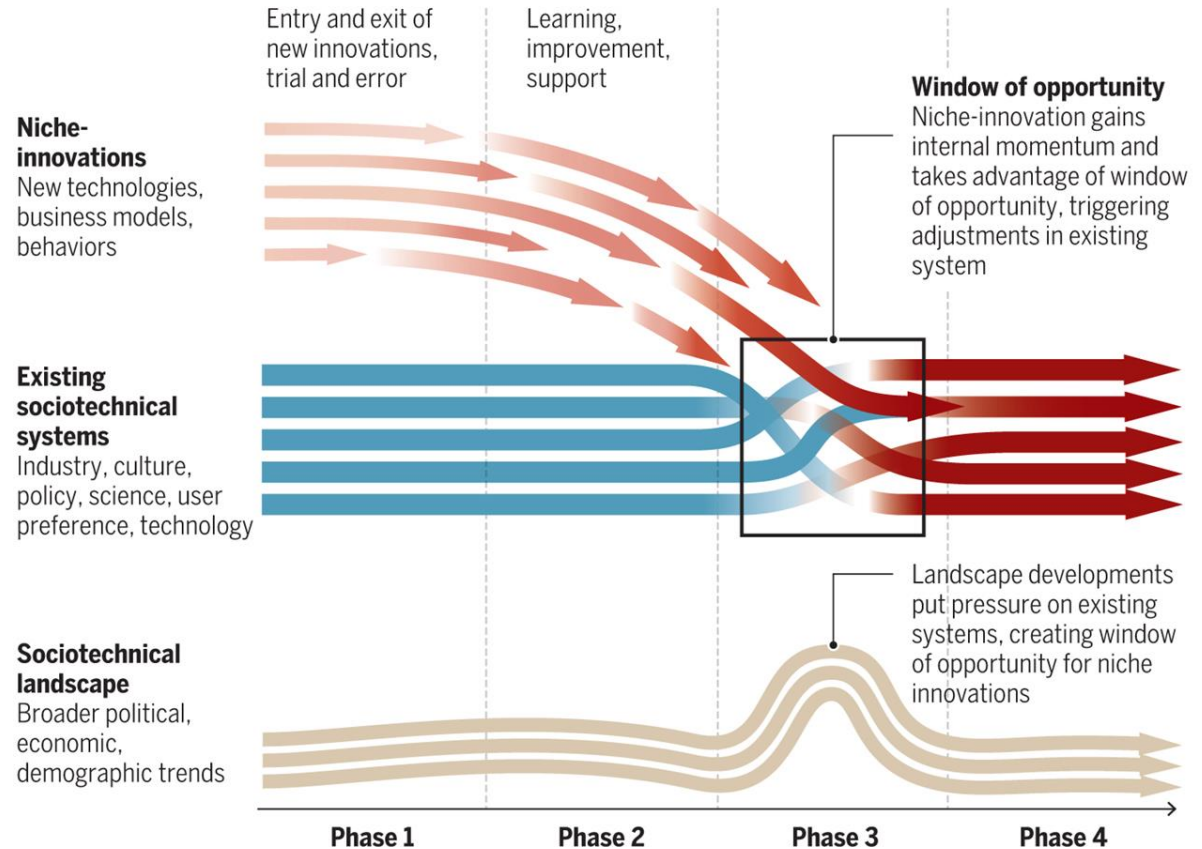
Frank W. Geels,
Benjamin K. Sovacool,
Tim Schwanen, Steve Sorrell

22 Sep 2017

10.1126/science.aao376
0

Foster innovations to take advantage of windows of opportunity

Internal and external forces pressure the existing system, which can realign around maturing innovations



Theoretical background and plan of the talk

Rapid socio-economic growth puts the society and its environment into a new situation – The Great Acceleration. The acceleration is a phenomenon that has happened numerous times in history but today we have entered Anthropocene that is characterised by pan-planetary changes.

Thus I will ask:

- What are the landscape pressures that destabilise current system?
- What are the characteristics of old system that fail new challenges and what are the ones that will endure?
- What are the niche innovations that may help to upgrade the socio-economic system?
- The critical steps for the way ahead



Landscape pressures

#085 Silvia Lotman: Kuidas hoida metsi?

A woman with dark hair tied back, wearing a blue jacket with a red and white patch on the left chest, is sitting in a deforested landscape. She is holding a map or document in her hands and looking down at it. The ground is covered with cut logs, stumps, and branches. In the background, there are several tall, thin trees, some of which appear to be dead or dormant. The sky is clear and blue. The video player interface at the bottom shows a play button, a progress bar at 15:24 / 15:57, and the subtitle 'Kerige, et üksikasju näha'. There are also icons for volume, settings, and full screen.



Event summary

Climate and biodiversity crises:
A new role for the Circular Economy in
the next European Green Deal



**EU
FOREST
STRATEGY**

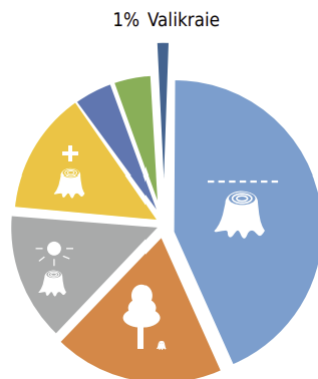


AEFC

**THE ASSOCIATION FOR ECOLOGICAL
FORESTRY CERTIFICATION RY**

Landscape pressures

State of forestry management system today



Currently only 1% of Estonian forests are managed by selective cutting

This means the experience for other systems than clear-cutting is limited



In 2020 Estonian Fund for Nature published “A practical guide to the continuous forestry” to gather all available experience from Estonia and abroad



Teejuht
püsimetsandusse

Definition of continuous cover forestry in Estonia

- Tree species characteristic to particular habitat
- No intensive land melioration, fertilisation nor soil disturbance
- Continuous high tree cover
- Permanent retention trees

“Biomimicking natural regeneration system rather than industrial simplification of the landscapes”



History

- Estonian forestry in 1920-ties recommended continuous forestry to subsistence farms and also to state forests but clear-cutting practices were developed throughout the country. As an exemption Sõmerpalu local forest management was successfully showing economic prevalence of selective cutting.
 - During soviet era the clear-cuttings were avoided in forests that were predominantly selected as protection from winds, erosion as well as around populated villages and towns. Nowadays “protection forest” type does not exist in Estonian law
- During 1990-ies the state forest act restricted selective cutting in most of the forest types. Thus, inhibiting possibilities for developing the practice.
 - Interesting testing examples are some illegal cuts from 1990es where biggest trees were selectively stolen from the forest owners, although a sign of horrific period of “cowboy capitalism” they now may show us results of this kind of management
 - Since 2017 the selective cutting is allowed in all forest types and no legal boundaries are in place



Close-to-nature tips

No matter what is your forest
management system

- Leave dead wood in the forest. There should be different diameter fallen trees in the forest, on fertile soils at least 20% and on non-fertile soils at least 10% of the mass of growing trees – old-growth forests have double of this amount.
- Permanent retention trees selected already in the beginning of any management and kept in the forests throughout all cuttings



Close-to-nature tips

You can help nature by

- Leaving “interesting” trees uncut – trees that have big “non-standard” branches, holes, cracks etc. These make good habitats for lichens, mosses, fungi and invertebrates.
- Leaving out of management sites in forest that require large amount of soil disturbance and are difficult to access – too wet places, deep slopes etc.
- Growing broad-leaved tree species
- Avoiding cutting in spring and first half of summer for bird nesting



Species you protect with avoiding clear- cut

Hazelhen, Laydy's slipper orchid,
Linnaea, Neckera pennata, Fir
clubmoss, Common buzzard



Laanepüü



Kaunis kuldking



Harakkuljus



Sulgjas õhik



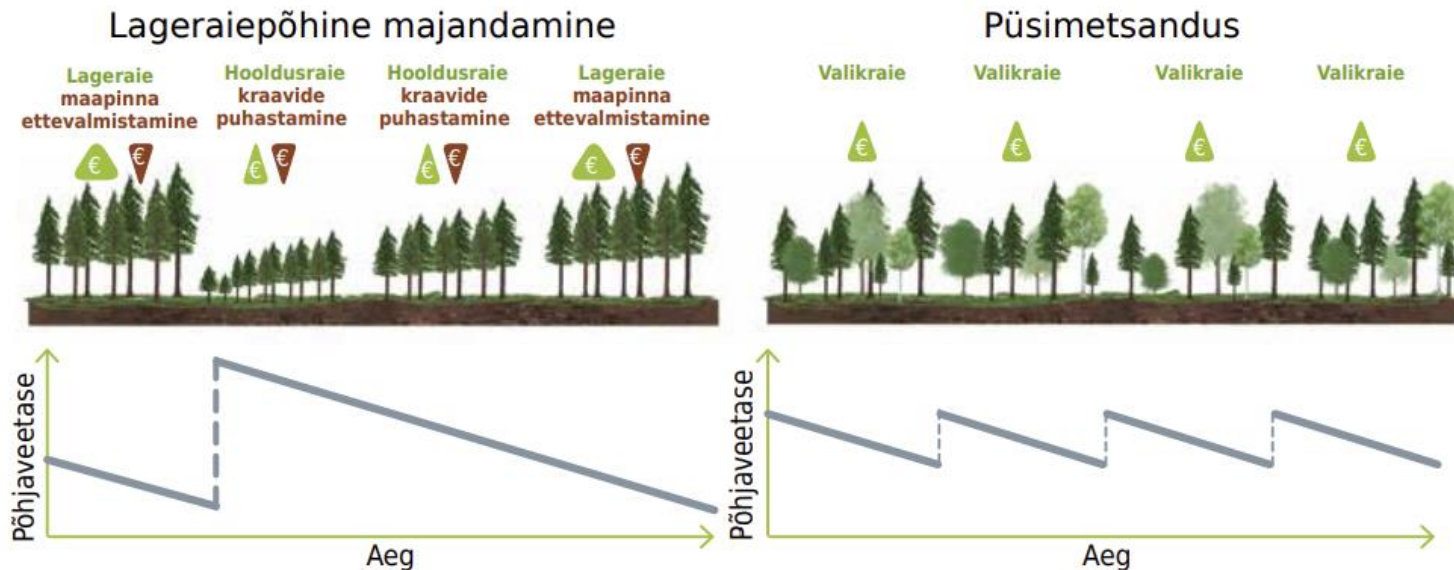
Ungrukold



Hiireviu

By avoiding clear-cut you also protect ground water

And save money from melioration



Joonis 82

Kuidas püsimetsandus aitab kokku hoida kraavide puhastamise kuludelt: järjepidevalt kasvava puistu puhul ei ole vaja kraave hooldada, kuna puistu toimib kuivendajana (Nieminen jt 2018).



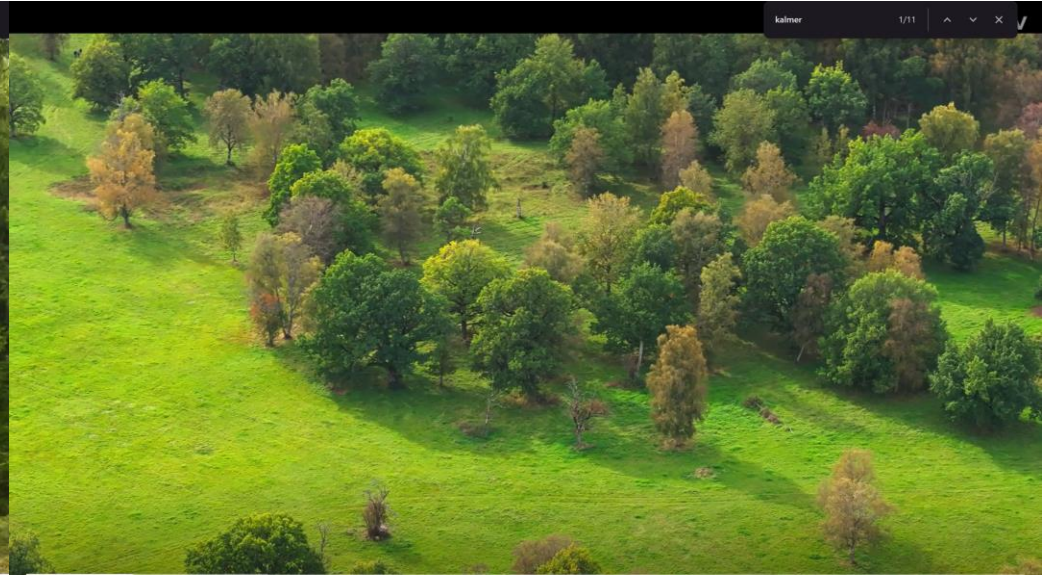
Sources of inspiration – wet forest habitat restoration plan

Win-win for carbon storage and biodiversity

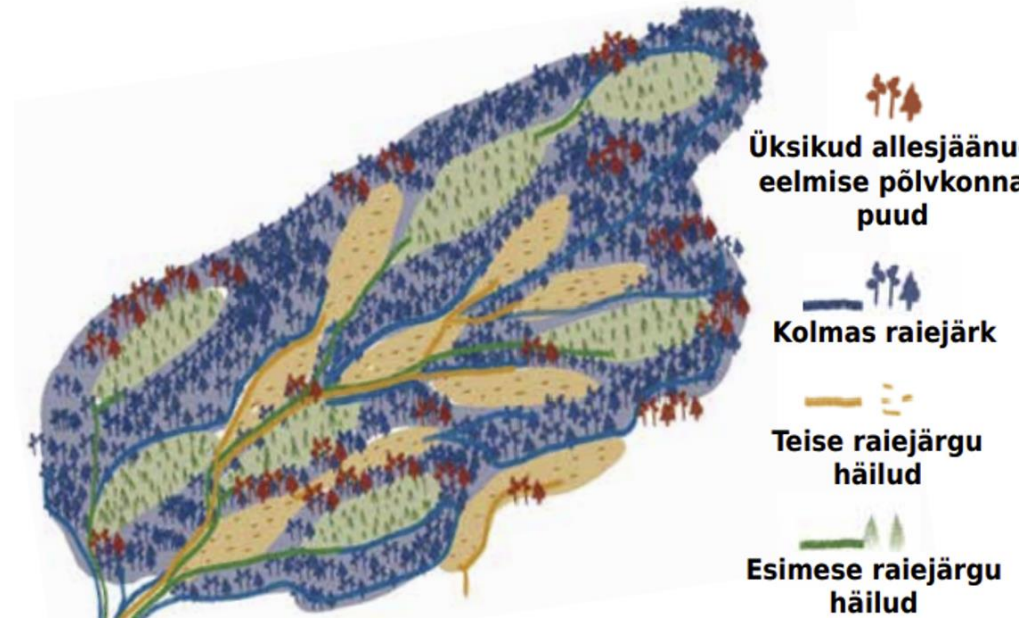
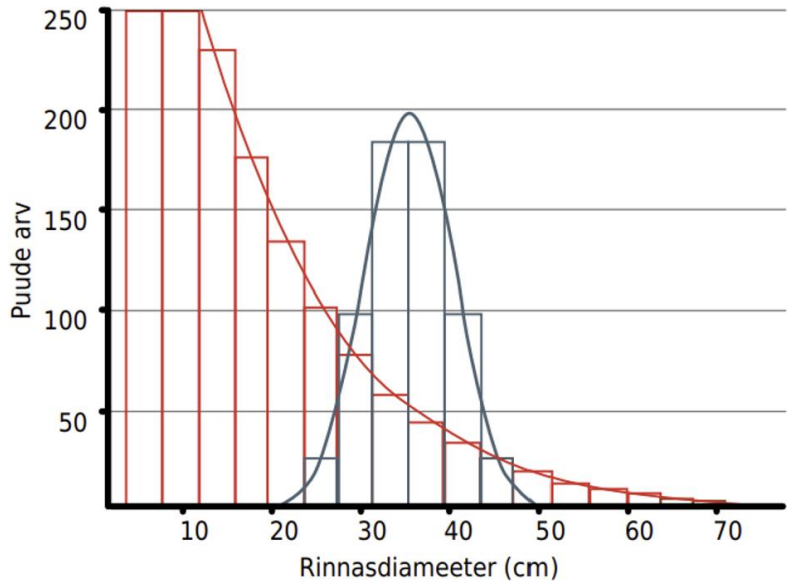


Sources of inspiration – wooded meadows

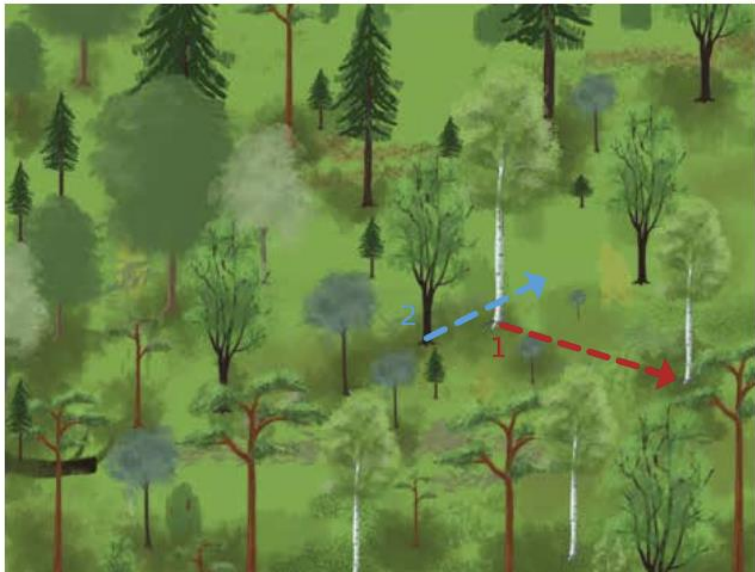
Win-win-win for biodiversity, climate and income for land-user



Practical views for dynamic management for continuous tall tree cover



Need for developing services: planning and cutting



Joonis 40

Kuidas valida puude langetamise järjekorda püsimeetsas, et teisi puid mitte vigastada? Numbrid näitavad puude langetamise järjekorda, nooled langetamise suunda.



Noored puud
(kasvama jäävad)

Puud, mille
langetab harvester

Nooled näitavad,
kuidas langetab
saamees
kaugemad
puud harvesterile
töötlemiseks

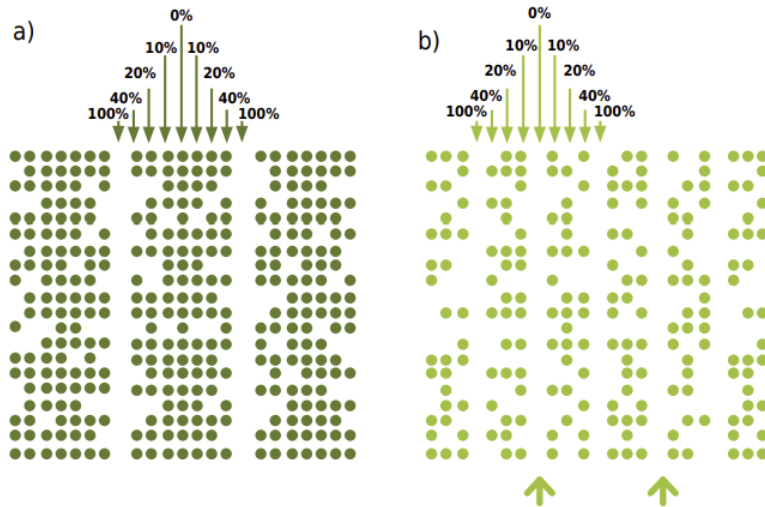
Joonis 41

Harvesteri ja saamehe koostöös tehtud valikraie. Eelnevalt märgitakse harvesterile sõidurada ette, valides kohad, kus on enim suuri puid ja kõige vähem järelkasvu. Saamees langetab sama teed tagasi sõitvale harvesterile diagonaalselt ette puud, milleni harvesteri haarats ei ulatu või mis on liiga suured. Nii saavad sõidurajad vonklevad ja ca 30-meetrise vahedega.



Innovation needed: from one system to another

Experiments and tests needed for regeneration in different forest types – planned in state forest pilot project



Example how cuttings can be planned in one-age forest stand to grow slowly wind-prone trees



Need for machinery: light transport for soil and tree protection

Possibility for local innovation and economic added value



More experience needed: developing long-term economic plans



Although pine culture will not be continuously grown in all soils there is an example for economic gain with postponing clear cut by 25 years by selective cutting

- To calculate real income from long-term management change you should take into account the inflation during this time. It possible to make same amount or more with selective vs clear-cut but more examples are needed
- Forest owners with some hundreds of hectares of forest have shown that their management is more profitable (and they like it more) if they do not manage all the area with clear-cuts



THANK YOU
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