

WP1

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WP1 since Galway

- Alternative FMM (aFMM) Milestone 3 - December 2017
- LCCs and stakeholders
- Milestone 4
 - (nicest MS ever = Worskhop in Asa)
- Milestone 5 aFMMs and DSS spring 2018
- Some new alternatives, why?
- The process behind aFMMs
- Next deliverable (D1.2)

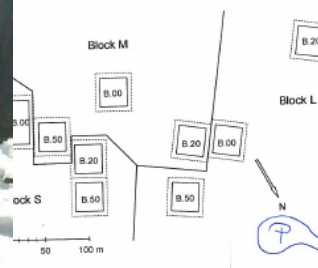
Workshop in Asa March 2018



- Presentation of all aFMMs
- Upcoming work and publications
- Outdoor – experiments and common silviculture in Sweden



Photo Credit: Kristina Wallertz



26 alternative Forest Management Models (aFMM)

Name and abbreviation of the alternative FMM		
Germany	Scots pine Timber and Energy forest (case study Lieberose/Brandenburg)	GER-Br 1
	Norway spruce Timber and Energy forest (case study Augsburg/Bavaria)	GER-Ba 1
	Biodiversity centered management of pine-dominated stands* (case study Lieberose/Brandenburg).	GER-Br 2
	Biodiversity centered management of spruce-dominated stands* (case study Augsburg/Bavaria)	GER-Ba 2
	Oak biodiversity set aside (CSA Lieberose/Brandenburg)	GER-Br 3
	Beech biodiversity set aside (CSA Augsburg/Bavaria)	GER-Ba 3
Ireland	Low stocked lodgepole pine - fibre (LP, Pinus contorta Douglas fir)	IRL 1
	Low stocked lodgepole pine - wilderness (LP, Pinus contorta Douglas fir)	IRL 2
	Bog restoration	IRL 3
Italy	Uniform shelterwood and coppice.	ITA 1
	Recreational and habitat selective management model	ITA 2
Lithuania	Adaptive rotation ages	LTU 1
	Non-clear cutting in protected forests	LTU 2
	Sustainable management of special purpose forests	LTU 3
The Netherlands	Wood mass forest management	
	High value timber forest management	
	Park forest management	
Portugal	Pure maritime pine (Pinus pinaster) forest system for sawlogs production	POR 1
	Pure pedunculate oak (Quercus robur) forest system for sawlogs production	POR 2
Slovakia	Model for sustainable timber provision in even-aged mixed stands	SVK 1
	Model for sustainable multifunctional management in partly uneven-aged mixed stands	SVK 2
Sweden	The clearcutting system with Sitka spruce/Douglas fir	SWE 1
	Spruce/pine-birch mixture	SWE 2
	Scots pine shelterwood	SWE 3
	Selection system	SWE 4
Turkey	Continuous cover forests (CCF)	TUR 1

Name and abbreviation of the alternative FMM				Why?
Germany	Scots pine Timber and Energy forest or extremely production oriented management (case study Lieberose /Brandenburg)	Uniform shelterwood, non-uniform shelterwood conifers	Conifers (beech, oak)	Wood
	Norway spruce Timber and Energy forest extremely production oriented management (case study Augsburg/Bavaria)			Wood
	Biodiversity centered management of pine-dominated stands" (case study Lieberose/Brandenburg).	Non uniform shelterwood	Spruce	biodiversity
	Biodiversity centered management of spruce-dominated stands" (case study Augsburg/Bavaria)			biodiversity
	Oak biodiversity set aside (CSA Lieberose/Brandenburg)	No intervention	Oak, beech, ash, and other broadleaves	
	Beech biodiversity set aside (CSA Augsburg/Bavaria)			

Name and abbreviation of the alternative FMM			Why?	DSS
Ireland	Low stocked lodgepole pine - fibre (LP, Pinus contorta Douglas fir)	Conifers	<ul style="list-style-type: none"> •Wood: cheap fibre •Increased rotation age = better for biodiversity and RAFL 	Decades of knowledge managing LP, but untried new densities
	Low stocked lodgepole pine - wilderness (LP, Pinus contorta Douglas fir)	Conifers	<ul style="list-style-type: none"> •Lower CC area. •Reduced interventions •Long continuity forest •"Biodiversity" + scrub trees establish in between? •Avoid negative NPV from expensive planting 	
	Bog restoration		<ul style="list-style-type: none"> • Biodiversity • Many stakeholders like this 	
	Sitka Spruce and Birch nurse	Sitka spruce and birch	Timber Broadleaves	It is not known how this mixture will

Name and abbreviation of the alternative FMM		Why?
Lithuania	Adaptive rotation ages	Clearcutting (39% of the area), Uniform shelterwood system (31%) and Non-uniform shelterwood (30%),
	Non-clear cutting in protected forests	Uniform shelterwood system and Non uniform shelterwood
	Sustainable management of special purpose forests	Selection systems (group selective cuttings and “free” selective cuttings)

The most important tree species in respect the adaptive rotation ages are *Picea abies*, *Pinus sylvestris* and *Betula spp.* All main tree species are present in CSA in compartments assigned for the AFF in the following proportions:

The most important tree species in respect the adaptive rotation ages are Norway Spruce, Scots Pine, and Birch spp. And grey alder. All main tree species are present in CSA in compartments assigned for the AFF in the following proportions:

Tree species managed under this FMM are the same as under respective current FMM Most important are;

Name and abbreviation of the alternative FMM			
Portugal	Pure maritime pine (<i>Pinus pinaster</i>) forest system for sawlogs production	Clearcutting	<i>Pinus pinaster</i>
	Pure pedunculate oak (<i>Quercus robur</i>) forest system for sawlogs production	clearcutting	<i>Quercus robur</i>
Slovakia	Model for sustainable timber provision in even-aged mixed stands	Non-uniform shelterwood system	<i>Fagus sylvatica</i> , <i>Quercus petraea</i> , <i>Picea abies</i> , <i>Abies alba</i> , <i>Pinus sylvestris</i> , <i>Acer pseudoplatanus</i> , <i>Fraxinus excelsior</i> and <i>Larix decidua</i> (natural regeneration of these species, or artificial regeneration in small groups / individual trees).
	Model for sustainable multifunctional management in partly uneven-aged mixed stands	Combination of non-uniform shelterwood system and selection system	<i>Picea abies</i> , <i>Fagus sylvatica</i> , <i>Abies alba</i> , <i>Acer pseudoplatanus</i> , <i>Fraxinus excelsior</i> and <i>Larix decidua</i> (natural regeneration of these species, or artificial regeneration of small groups / individual trees).

Name and abbreviation of the alternative FMM	System	Tree species
Sweden The clearcutting system with Sitka spruce/Douglas fir	Clearcutting	<i>Picea sitchensis</i> and <i>Pseudotsuga menziesii</i>
Spruce/pine-birch mixture	Clearcutting	<i>Betula pendula</i> or <i>Betula pubescens</i> is promoted in mixtures with <i>Picea abies</i> and <i>Pinus sylvestris</i> . As <i>Picea abies</i> is dominating in the CSA mainly <i>Betula spp/Picea abies</i> mixture
Scots pine shelterwood (*)	Uniform shelterwood system (clearcutting)	Scots pine
Selection system	Selection system	<i>Picea abies</i> / <i>Fagus Sylvania</i>
Turkey Continuous cover forests (CCF)	Selection system	<i>Fagus orientalis</i> <i>Quercus sp.</i>

Key findings of the new aFMMs

Motivation and Challenges

Presentation in Galway now updated with milestone 3 and the workshop in Asa

New or changed aFMM - ongoing

- Ireland: Sitka spruce under Birch nurse, on blanket bog- -replacing *Sitka spruce with broadleaf mixture*
- Lithuania: Care of deciduous - replacing *Sustainable management of special purpose forests.*
- Sweden: Border zones with/without management replacing *Shelterwood pine*

What are the main reasons for selecting the aFMMs?

Biodiversity

Environmental values

Eco system services

Recreation

Social values

Water quality

Natural land use

Cultural

Close to nature

More broadleaves

Production

Carbon sequestration

Saw-log production

Cash-flow

Efficiency in utilisation of forestry made for wood production primarily (in order to increase consideration to other ES-services

Sustainability and economics in spruce stands

Green energy and biomass

Risk

Climate change

Biotic and abiotic damage

Spreading the risks

Wood production AND biodiversity together

More broadleaves

Natural regeneration

Mixed forests



ALTERFOR

BIODIVERSITY- THE MOST COMMON REASON FOR CHOOSING AFMM

HOW TO ACHIEVE THE GOAL?

FOCUSING ON THE CHOICE WITHIN THE DIFFERENT COUNTRIES, NOT HOW
MANY AFMMS

Clear-cut free methods, CCF etc:

5 countries

Promoting broadleaves, creating mixed stands:

All countries, more or less

(Tourism, recreation and cultural services)

maybe not directly translated to biodiversity in all cases:

7 countries



PRODUCTION- THE SECOND MOST COMMON REASON FOR NEW AFMM

All countries have at least one aFMM where the main reason or one of the main reasons for the choice is **WOOD** production

*One effect of promoting wood production is **Carbon sequestration-***

6 countries mention this as the main reason

Risk, 4 countries

Wood production AND biodiversity together, 4 countries



Key findings of the main reasons for choosing a new FMM

One might see a change in forestry toward a broader thinking with a variety of ES services as the main reason, not only wood production

The main reason for choosing the new FMMs is *Biodiversity* in different forms

BUT all countries have at least one aFMM where the main reason or one of the main reasons for the choice is *wood production* also including carbon sequestration as a reason

Risk, including climate change is another important factor in the choice of new FMMs. Spreading risks, decrease the risk of fires etc.

Of course the reasons for the choice are many, these are the MAIN reasons



Challenges- uncertainties –silviculture

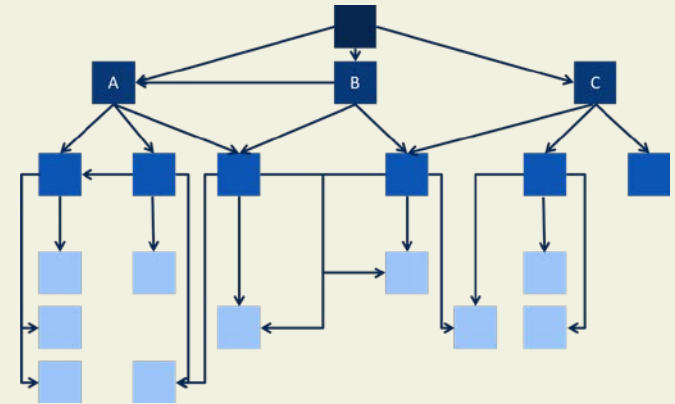
some examples

- How will the stand develop compared to yield tables?
- Development and distribution of wanted species?
- Time for the goal to be achieved?
- The idea has never been tested before, how will we succeed?
- Influence on growth?
- Natural regeneration failure?
- Game browsing?
- Higher costs?
- Finding proper seedling material for regeneration?
- FSC standard- rules on the share of exotics for example?

Challenges- DSS

some examples

- Lack of suitable growth models?
- No or limited data available?
- How to treat ingrowth and exotics for example?
- Possible to make simulations but the results may be uncertain?
- Not feasible to use process-based model?



(Key) findings of the main challenges when choosing a new FMM

Different challenges for silviculture and DSS:

- In silviculture worries about growth, success of regeneration, costs etc.
 - DSS difficulties with growth models, lack of suitable data and how to treat new tree species for example
-



WP1 after Porto

Deliverable D1.2 (about aFMMs)

autumn 2018

“Better” and different from D1.1

Publication based on D1.1 (about FMMs) Robert Sedmak

ongoing →

Implementation of aFMMs (eg. information, demonstration sites, users guides,?)

2018 →

Thank you:

all LCCs and other for all input and
answers many questionnaires'

Challenge for WP1

- Using all this huge material in the best way to create an interesting D1.2
- Maybe this deliverabel then could be used for a later publication?
- Input from this meeting is most welcome

WHAT HAVE WE DONE IN WP1 DURING 2018?
MILESTONE 4-WORKSHOP IN ASA
MILESTONE 5
THINKING OF HOW D1.2 IS GOING TO BE WRITTEN- INPUT
FROM THIS MEETING?

