



Applied Period Forstamt Johanniskreuz



Andrey Lessa Derci Augustynczik



Index

- 1- Forest management**
- 2- FSC and silviculture**
- 3- FSC standards**
- 4- Conclusions**

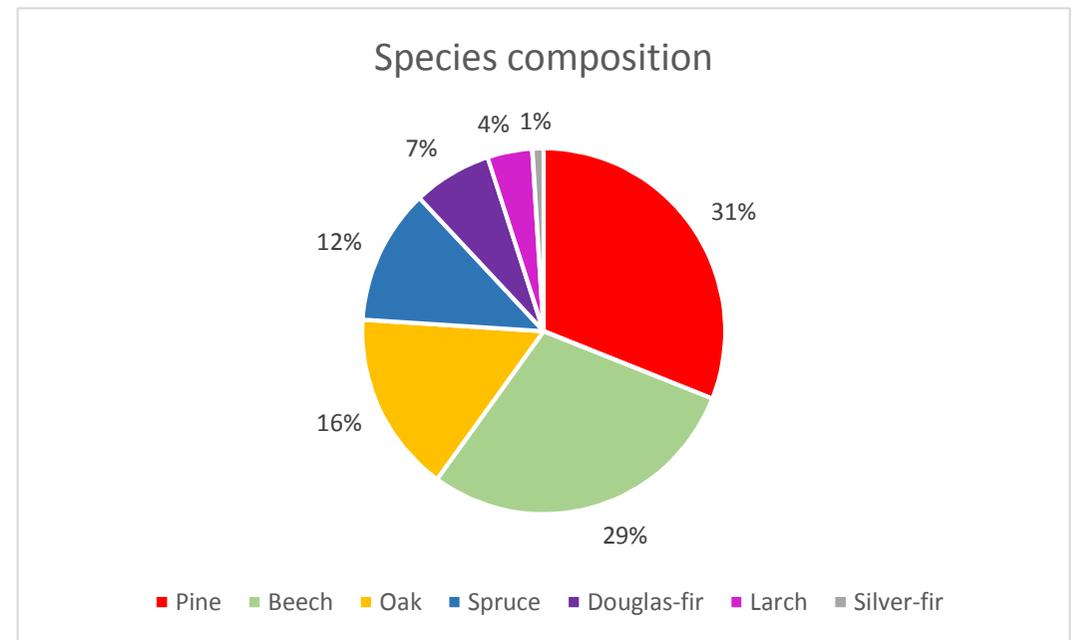


Source: FORDAQ



Forest office Johanniskreuz

- Part of the ministry of environment
- 22.380 ha of forests
- Close-to-nature forestry
- High quality trees
- Mixed stands – Native broadleaves



Source: LRP



Forest Management

➤ Crop-trees selection

➤ Light management





Forest Management

➤ Crop-trees selection

- Vitality
- Quality
- Distribution

➤ Distribution

- Species specific
- Crown
- Target diameter





Forest Management

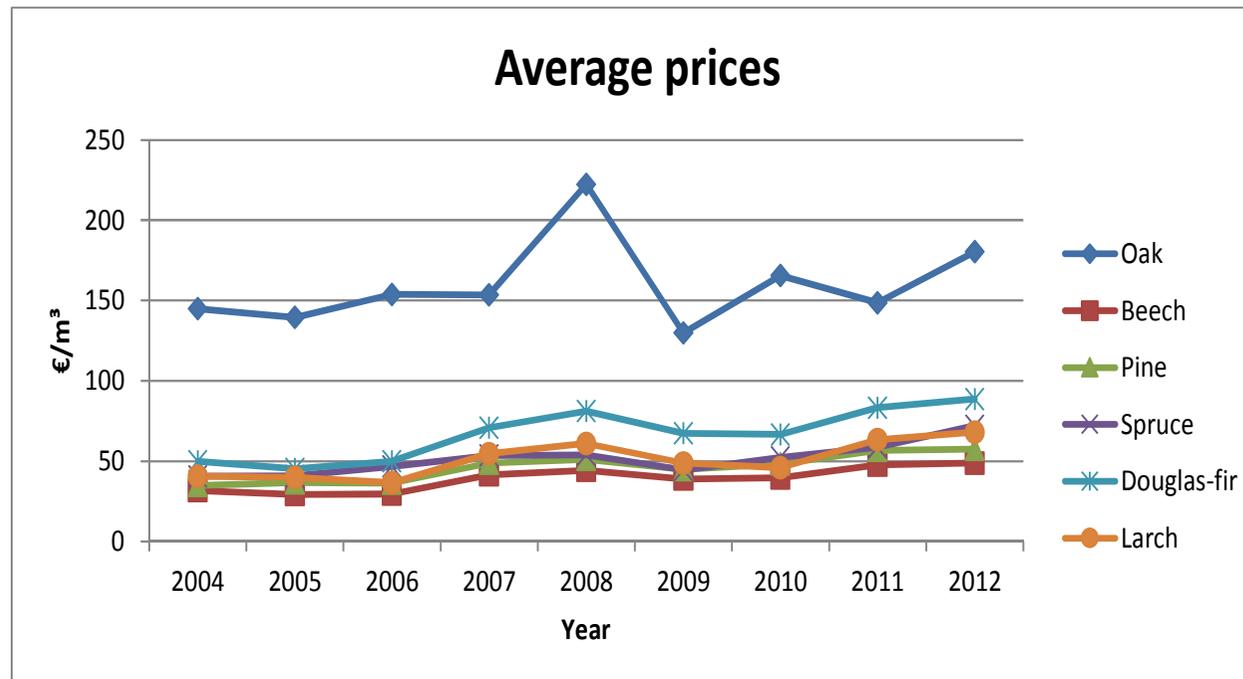
➤ Light management

- Regeneration practices
- Tending practices
- Release of crop-trees' crowns



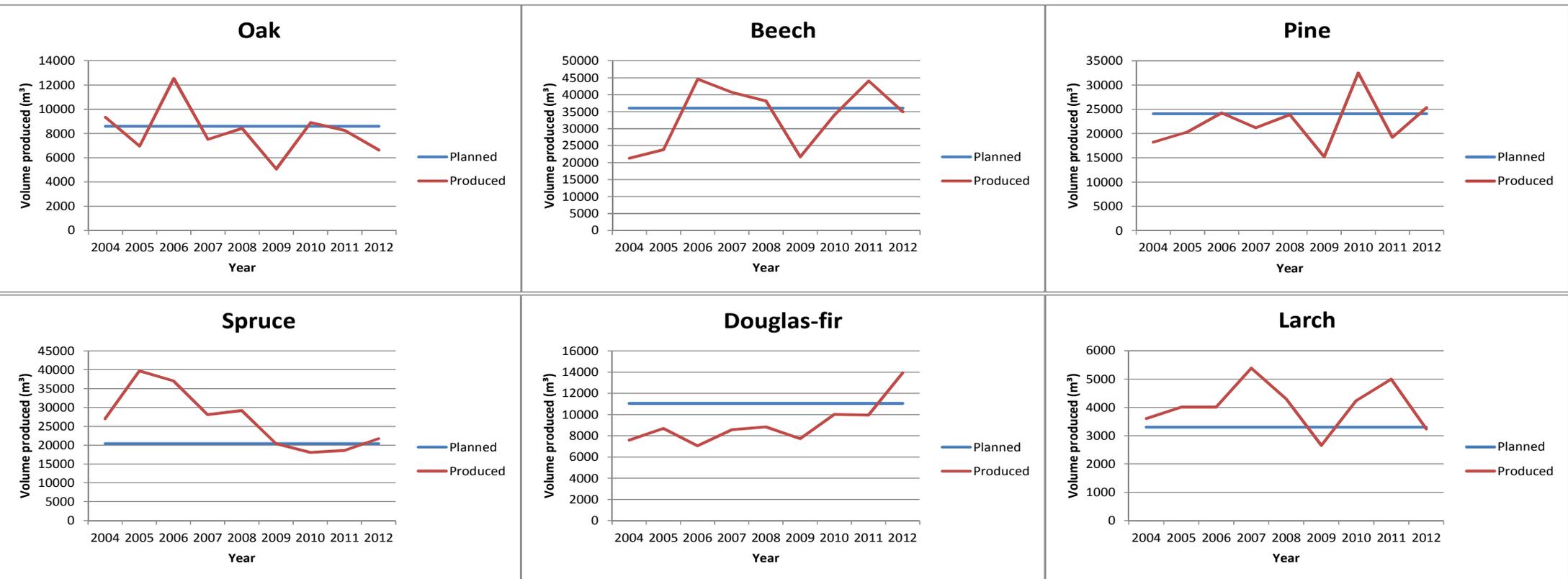


Species performance in the State forest



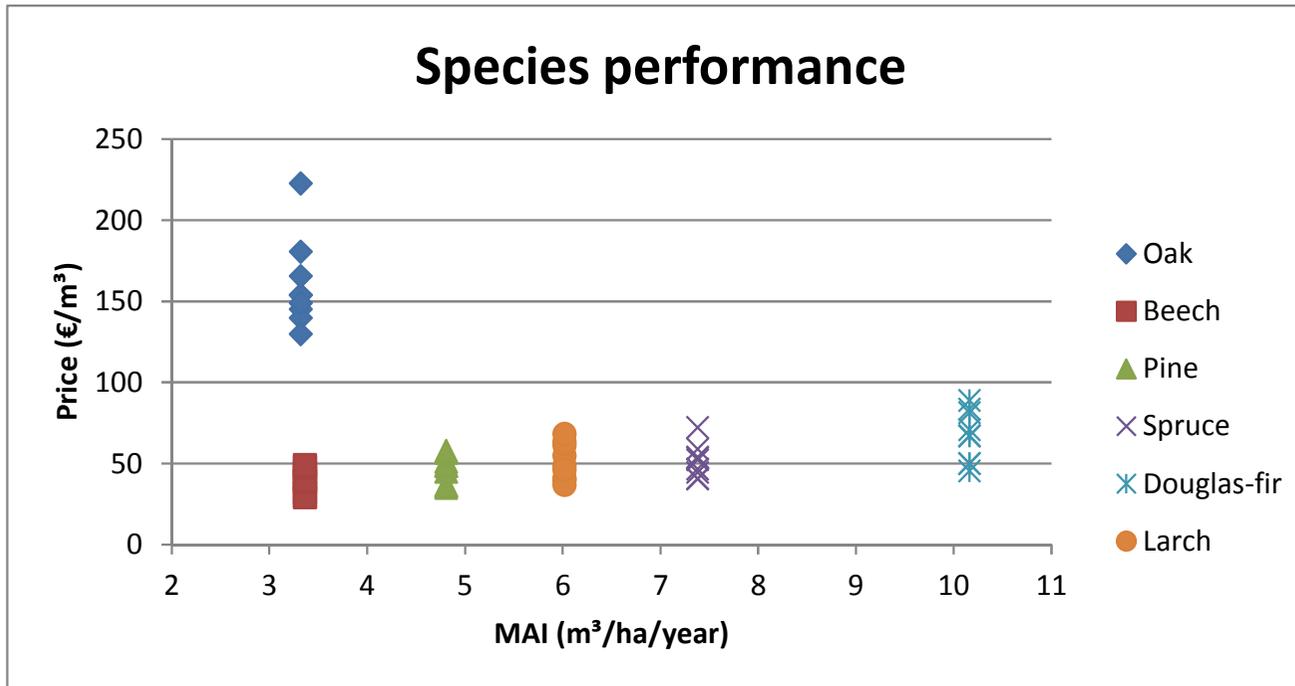


Species performance in the State forest





Species performance in the State forest



Species	Non-commercial volume (%)
Douglas-fir	10,00
Oak	20,00
Spruce	10,00
Larch	10,00
Pine	15,00
Beech	20,00

Species	Capitalization per year (€/ha)
Douglas-fir	612,87
Oak	424,55
Spruce	341,21
Larch	276,22
Pine	188,55
Beech	104,80

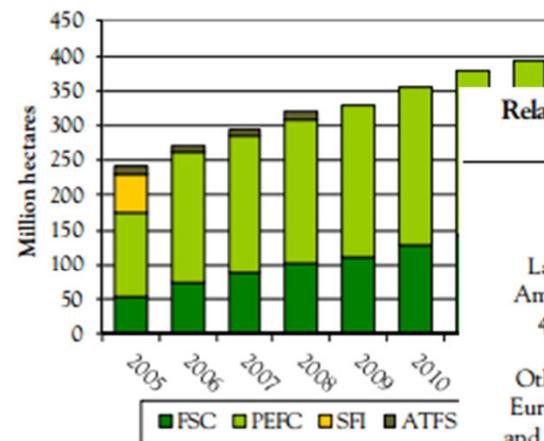


FSC and silviculture

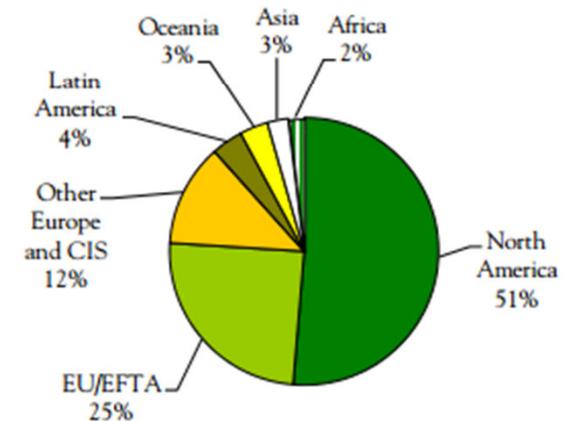
➤ FSC

- Society awareness
- International organization
- 800 members
- Regional working groups

Forest area certified by major certification schemes,
2005-2012



Relative shares of total global certified forest area by world region, 2012





FSC and Silviculture

➤ Oak management

- Direct sowing
- Direct planting

“6.3.13 Whole-tree harvesting is not practiced.”
(FSC Germany, 2012)

➤ Effects

- Site preparation
- Shading



FSC and Silviculture

➤ Oak management

- Direct sowing
- Direct planting

*“6.5.1 The skid trail network is mapped out to support long-term forest cultivation as specified in 6.3. The trail network accommodates local conditions and minimizes the forest soil area used by vehicles. **Driving takes place only on the designated system of opening up**; an exception is the driving according to 6.5.6.”*

(FSC Germany, 2012)

➤ Effects

- Site preparation



FSC and Silviculture

➤ Oak management

- Direct sowing
- Direct planting
- Shelterwood

➤ Effects

- Success of regeneration
- Quality of regeneration
- Costs

“6.3.12 Harvesting is done through felling of single trees or selected groups; clear-cutting is on principle avoided.”

*“Clear-cut: Clear cuts are areas where the forest stock has been widely removed through area felling or similar cutting systems, resulting in Open-land-like circumstances (guideline: one to two tree length in diameter; maximal diameter size **0.3 hectares**). Open-land-like circumstances emerge, if the height of the **regeneration is in average less than 2 meters.**”*

(FSC Germany, 2012)



FSC and Silviculture

➤ Oak management

- Direct sowing
- Direct planting
- Shelterwood
- Clump planting

*“6.3.8 Wild game populations are managed in ways that permit natural **regeneration** of tree species of natural forest plant associations **without human assistance**.”(FSC Germany, 2012)*

➤ Effects

- Game browsing
- Not viable



FSC and Silviculture

➤ Exotic species management

- Douglas-fir planting

*“6.9.1 Tree species that are not part of natural forest associations (including **exotic species**) are positioned as **single trees or small groups** to an extent which does not jeopardize the long-term development of the stands into natural forest associations.”*

➤ Effects

- Revenue
- Climate change

*“6.9.1.1 If the proportion of tree species that are not part of natural forest associations **exceeds 20%** of the planned stocking goal for the specific forest **management unit**, the forest enterprise professionally justifies that the development towards the natural forest plant association is not at risk.”*

(FSC Germany, 2012)



FSC and Silviculture

➤ Harvesting operations

- Cable-crane with harvester

“6.3.13 Whole-tree harvesting is not practiced.”
(FSC Germany, 2012)

➤ Effects

- Efficiency
- Firewood



FSC and Silviculture

➤ Harvesting operations

- Mechanized systems

➤ Effects

- Efficiency
- Safety
- Ridges

*“6.5.4 A permanent forest road and skid trail system considering local and concrete conditions is set up for soil and stand preserving timber. The forest enterprise aims for **skid trail gaps of 40 meters**. Necessary divergences are to be explained professionally comprehensible by the forest enterprise. Skid trail gaps **less than 20 meters are excluded.**”*

(FSC Germany, 2012)



FSC and Silviculture

➤ Harvesting operations

- Firewood production
- Displacement on field

“5.3.1.3 Removal of unused biomass is minimized; non-solid volume remain in the forest, as far as possible.”

➤ Effects

- Shortage of supply
- Increase in prices for local community

*“Non-solid Volume: Above-ground wood **below 7 cm diameter.**”*

(FSC Germany, 2012)



FSC standards

FSC STANDARD	GERMANY	FINLAND	BRAZIL
CLEAR-CUT	Indicator 6.3.12: clearings are avoided. Maximum clear-cut area of <u>0.3 hectares</u> and final cut is done only if the natural regeneration is on average more than 2 meters height.	Patch clear felling with area limit of <u>2 hectares</u> in Southern Finland and <u>3 hectares</u> in Northern Finland. No recommendation regarding the height of regeneration on the final cut.	Indicator 10.3.4: Maximum clear-cut areas must defined and documented. <u>No limits</u> are established for maximum clear-cut area nor for the minimum height of regeneration in the final cut.
WHOLE-TREE HARVESTING	Indicator 6.3.13: Whole-tree harvesting methods are <u>not practiced</u> .	Whole-tree harvesting and utilization of the residues are allowed. Indicator 5.3.1: forest owner shall use all wood raw materials, but <u>30%</u> of harvesting residues must be maintained for enhancing biodiversity.	<u>No restrictions</u> are specified fore whole-tree harvesting. Indicator 5.3.3 makes recommendations for maintenance of logging residues on the stand, but no limits are established.
GAME MANAGEMENT	Indicator 6.3.8: no assistance to natural <u>regeneration</u> regarding game management.	Indicator 5.5.3: provides that during the forest operations the important elements for the game habitat must be maintained. <u>Do not provide regulations</u> regarding assistance for the regeneration.	Not applicable.



FSC standards

REGENERATION PRACTICES	Indicator 6.9.1: stands are developed towards the natural species composition. The proportion of species not part of the natural composition should <u>not exceed 20%</u> .	Criteria 6.9 and Indicator 6.9.2: use of exotic species is controlled and monitored. During a 5-year period, the proportion of exotic species regeneration should <u>not exceed 3%</u> of the regeneration area.	SLIMF - Criteria 6.9: use of exotic species is <u>controlled and monitored</u> . No limits are established. Plantations – not applicable.
MACHINERY DISPLACEMENT	Indicator 6.5.1: machinery is allowed to drive <u>only</u> on the <u>skidding trails</u> .	Indicator 6.5.1: machines shall <u>not operate on buffer zones</u> . Site preparation is allowed.	<u>No restrictions</u> regarding machinery displacement.
SKIDDING TRAILS	Indicator 6.5.4: the aimed distance between skidding trails is <u>40 meters</u> . Skidding trails closer than 20 meters are excluded.	<u>No regulations</u> on the distance between skidding trails are made.	<u>No regulations</u> on the distance between skidding trails are made.
MINIMUM DIAMETER	Indicator 5.3.1: non-solid volume (less than <u>7cm</u> of DBH) remain on the forest as far as possible.	Indicator 5.3.: provides that <u>30%</u> of harvesting residues shall be <u>left</u> of the stand. No recommendations about the minimum diameter for usage are made.	SLIMF – Indicator 6.5.6: provides that where applicable, the minimum age and diameter for exploitation shall be determined. Plantations – <u>No regulations</u> are provided.



Conclusions

- Increase in the costs for silviculture and auditing costs.
- Decrease in adaptive capacity in climate change scenarios.
- A comprehensive set of standards is missing between countries.
- Benefit-cost in a close-to-nature forestry scenario.



References

MENGEL, B.; LANG, A. H. **Comparing Forest Certification Standards in the U.S.: Economic Analysis and Practical Considerations**. EconoSTATS, George Mason University, 2013.

LRP (Landesforsten Rheinland-Pfalz). **Who we are/Our forest/ Forest Office Johanniskreuz**. Available on: www.wald-rlp.de . Access on: 20/03/2014.

FSC (Forest Stewardship Council). **Certification/National Standards**. Access on: 06/03/2014. Available on: <https://ic.fsc.org/>

FERNHOLZ, K.; KRAXNER, F. UNECE/FAO **Forest Products Annual Market Review, 2011-2012**, New York and Geneva, 2012 .



Vielen Dank!
Questions?