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Valuable Broadleaves

an attractive investment

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Tectona grandis L.

in Brazil
Mato Grosso

well-established

Robinia pseudoacacia L.

in Bulgaria
Danube-region

innovative

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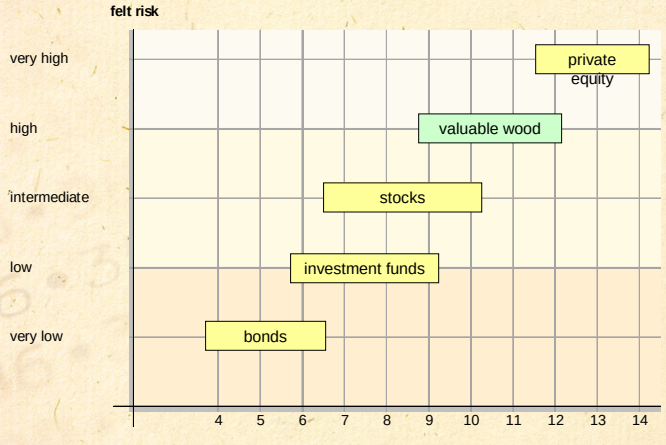
Accepted chance-risk relation for investment



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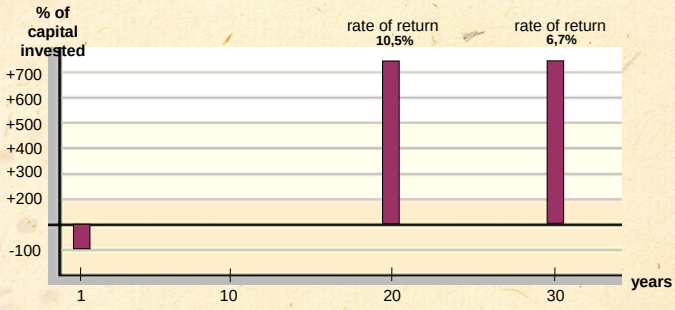
Importance of the „time“ factor ⟹ „speed of growth“

- The calculation of the rate of return is based on:
  - the relation between invested and returned capital
  - the time span between investment and return



- Faster growth of trees increases the rate of return substantially.
- Slower growth decreases the rate of return drastically.

- The capital market accepts only investments up to 20 years, maximum 25 years.

Common Robinia forest

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poor production factors

- generally: poor soils
- often: unfavorable climate or micro-climate
- generally: unselected genetic material
- in Western Europe: high labor cost

extensive management strategy

- minimizing capital investment
  - ➢ cheap plant material generated from seeds
  - ➢ minimal soil preparation
  - ➢ little suppression of competing weeds
  - ➢ no artificial pruning
  - ➢ narrow spacing to stimulate natural pruning
  - ➢ little intermediate cut
  - ➢ final cut after 20 to 40 years

no valuable wood assortment

- 70 % fuel wood or pulp wood
- 30 % for gardening, agriculture, horticulture and hydraulic engineering
- < 1% premium quality (A- and B-quality)

Common Robinia forest

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- < 1 % premium quality A- and B-quality

value production potential is poorly utilized

- [+] wood properties
  - high heating value
  - good fibre in high density
- durability
  - (very high hardness and strength)
  - (beautiful texture
  - (homogeneous structure, smooth surface)
- [–] a lot of wood defects
  - ➢ seldom A- and veneer quality
- [–] small stem diameter because of
  - slow growth
  - often branching of stems
- [–] predominant twisted stems

rate of return

maximal 4,5 %

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Common Robinia forest

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  - slow growth
  - often branching of stems
- [–] predominant twisted stems

rate of return

maximal 4,5 %

LIGNUM Robinia plantation

valuable wood assortment

- 15 % fuel wood or pulp wood
- 10 % for gardening, agriculture, horticulture and hydraulic engineering
- 65 % A- and B-quality, 10% veneer quality

value production potential fully utilized

- [+] wood properties
  - (high heating value)
  - (good fibre in high density)
  - durability
  - very high hardiness and strength
- beautiful texture
  - homogeneous structure, smooth surface
- [+] almost free of any wood defects
  - ➢ predominant A- and veneer quality
- [+] stem diameter > 40 cm after 20 years
  - fast growth
  - no branding of stems
- [+] straight stems

rate of return

9 to 12 %

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Common Robinia forest

poor production factors

- generally: poor soils
- often: unfavorable climate / microclimate
- generally: unselected genetic material
- in Western Europe: high labor cost

extensive management strategy

- minimizing capital investment
  - ➢ small plants from seeds
  - ➢ minimal soil reworking
  - ➢ Almost no suppression of competing weed
  - ➢ no artificial pruning
  - ➢ narrow planting
  - ➢ little intermediate cut
  - ➢ final cut after 20 to 40 years

no valuable wood assortment

- 70 % fuel wood and pulp wood
- 30 % for gardening, agriculture, horticulture, vine growing and hydraulic engineering
- < 1 % premium quality (A- and B-quality)

LIGNUM Robinia plantation

best production factors

- general: best soils
- general: favorable climate / microclimate
- general: selected genetic material
- in Bulgaria: low labor cost

intensive management strategy

- optimizing capital investment
  - ➢ 3 to 5 m high plants from vegetative propagation (clones)
  - ➢ intensive soil preparation
  - ➢ consequent suppression of competing weed
  - ➢ Regularly artificial pruning
  - ➢ spacing 5 m x 5 m
  - ➢ intermediate cut after 8 to 14 years
  - ➢ final cut after 20 years

valuable wood assortment

- 15 % fuel wood and pulp wood
- 10 % for gardening, agriculture, horticulture, vine growing and hydraulic engineering
- 65 % A- and B-quality, 10 % veneer quality

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Common Robinia forest

- rate of return maximum 4,5 %

an unattractive investment

LIGNUM Robinia plantation

- rate of return 9 to 12 %

an attractive investment

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Robinia plantations – ecologically valuable as well?

- LIGNUM first plantation enterprise outside the tropics FSC-certified
- Robinia-Plantations exclusively only on former agricultural sites
  - cutting of existing forests is excluded as an option
- Robinia-Plantations imply qualitative ecological improvement:
  - prevent erosion by wind
  - improve the water balance
  - provide new habitats for flora
  - sequestrate carbon for a long time
- In addition an area equivalent to 25 % of the plantation area will be close to nature forests:
  - mixed forests consisting of native tree species
  - moist areas
  - dry, exposed sites

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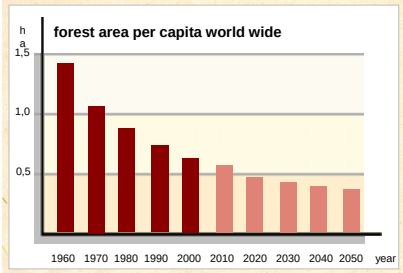
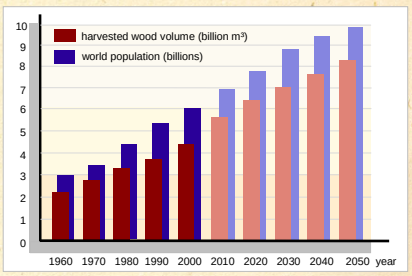
Perspectives of the valuable timber markets



Source: FAQ

- wood supply will continuously decrease
- development can not be changed



Source: FAQ

- demand is correlated with world population
- by valuable wood analogical devolopment

- ➢ continuous increase in prize of valuable wood
- ➢ substitution of tropical valuable wood by non-tropical valuable wood
- ➢ increasing cultivation of valuable trees in plantations, also in non-tropic regions

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Valuable wood plantations with great perspectives

- extensively managed natural forests and semi natural forests will remain predominant even in the future
  - ecologically mandatory
  - economically wise
- valuable wood plantations
  - can compensate for reduced supply from natural and semi natural forests
  - reduce the pressure of demand from natural and semi natural forests
  - can be an attractive investment
- non tropical valuable tree species with increasing share
  - Robinia pseudoacacia L.
  - Julans regia x nigra
  - Prunus serotina L.
  - Morus alba L.
- basic scientific work is needed in
  - selection / breeding of optimized clonal material
  - improvement of vegetative propagation methods
  - mathematical growth models

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Thank you for your attention

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Common Robinia forest

- poor production factors
- extensive management strategies
- fuel wood, pulp wood
- low use of the value production potential
- rate of return maximum 4,5 %

an unattractive investment

LIGNUM Robinia plantation

- best production factors
- intensive management strategies
- premium quality wood (noble wood)
- value production potential fully utilized
- rate of return 9 to 12 %

an attractive investment