



# Applied Period Project

Johanniskreuz, Rhineland-  
Pfalz, Germany

Karolos Sokratis Tzant



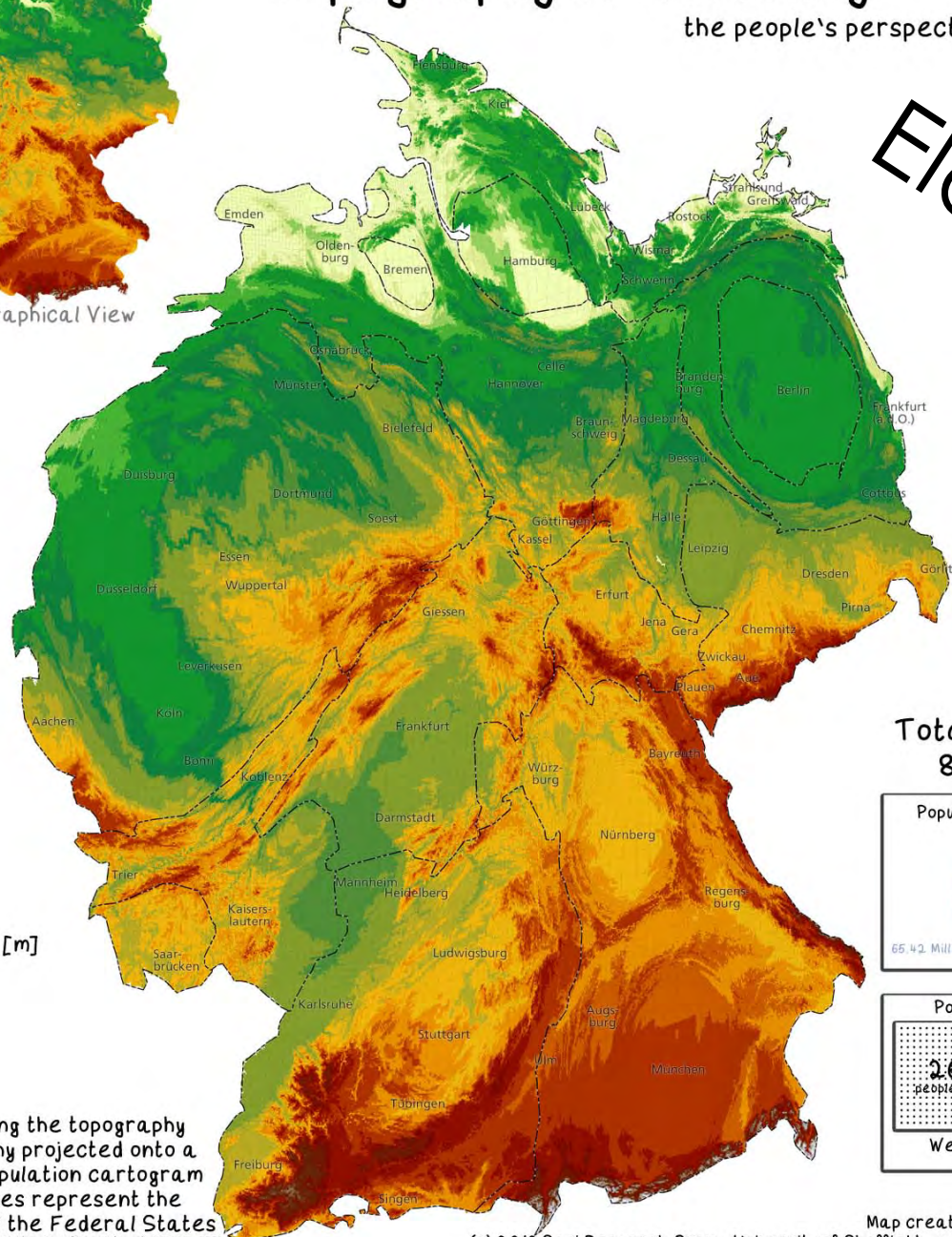
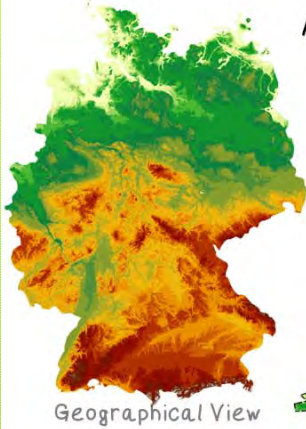


Where is Rhineland - Pfalz?

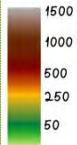
A different view:

# Topography of Germany

the people's perspective



Elevation [m]

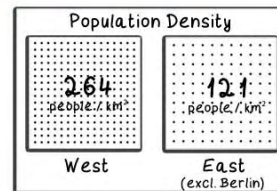
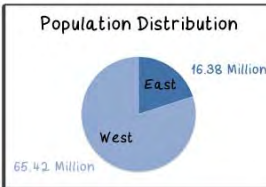


Map showing the topography of Germany projected onto a gridded population cartogram  
 Dashed lines represent the borders of the Federal States

Data Sources: Statistisches Bundesamt (2010), SEDAC, ESRI

# Elevation Map

Total Population  
 81.8 Million



Map created by Benjamin Hennig

(c) 2010 Sasi Research Group, University of Sheffield - [www.viewsoftheworld.net](http://www.viewsoftheworld.net)

# Forest Type by Ownership

Type	Hectares	%
State Forest	16.029,07	72
Communal Forest	3.825,70	17.1
Private Forest	832,40	3.5
Small area Private Forest	1.688,90	7.4
<b>Total</b>	<b>22.380,90</b>	<b>100</b>

# Main Tree Species

Predominant tree species by percentage	1959	2008	Trend
Pine	44	34	-
Beech	28	35	+
Spruce	11	9	-
Oak	7	9	+
Larch	4	3	-
Douglas Fir	2	6	+
Sweet Chestnut	1	1	=
Silver Fir	1	1	=

# Johanniskreuz forest district office

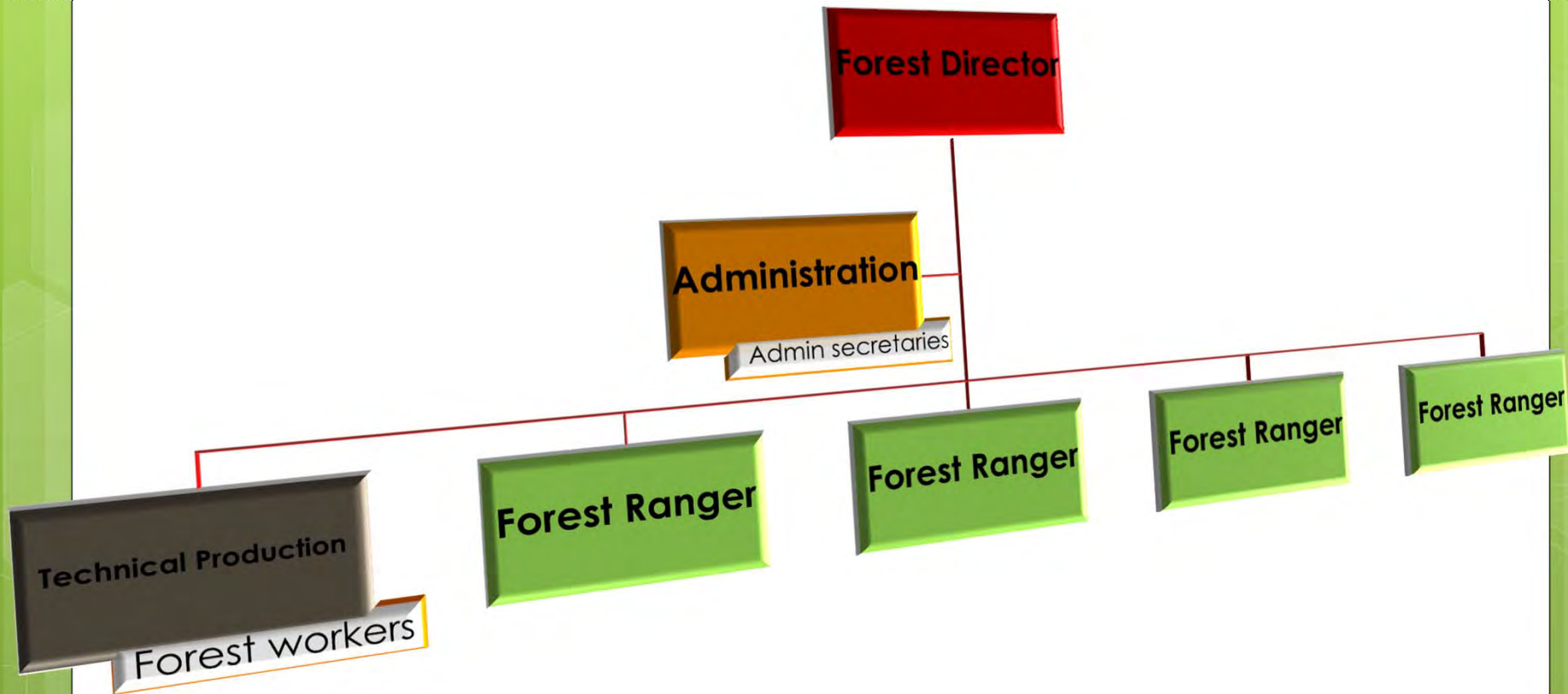
- Responsible for Silvicultural practices
  - State forest
  - Communal forest
- Responsible for hunting
  - Towers and stands
  - Population control
  - Sale of hunted pray
- Responsible for forest road maintenance
- Other responsibilities
  - recreation, scientific research etc...







# Internal Organization



# About this project.....

Forest Operations

Ecology

Governance

# Forest Operations

- Planning of the harvesting,
- Preparations of the stand,
- Damages in the stand,
- Ecological factors taken into account in the stand,
- Closure and detour planning for the hiking trail in the area-  
post operation clearing of the path,
- Negotiations with contracting companies for the cutting,
- Estimation of the income from the sale of the timber,
- Observations of the selected company's ongoing work,
- Calculation of actual income and cross-reference with  
estimated income.
- Future thoughts about the stand

# Planning of the harvesting

## **Großer Schweinsberg** stand

Harvest due to:

- Bark/longhorn beetles
- Educational importance
  - Ecology
  - Forest Operations
  - Governance

# Preparations of the stand

- Marking (White tape) crop trees
  - Use of some premarked/preprotected trees
  - Important for attention during harvesting
- Applying positive choice
- Marking (Red paint) trees for removal
- Expected number of crop trees depends on stand characteristics



# Damages in the stand

Damages from 3 forces of nature:

- Bark Stripping from Red Deer
- Snow Damage
- Wind Damage



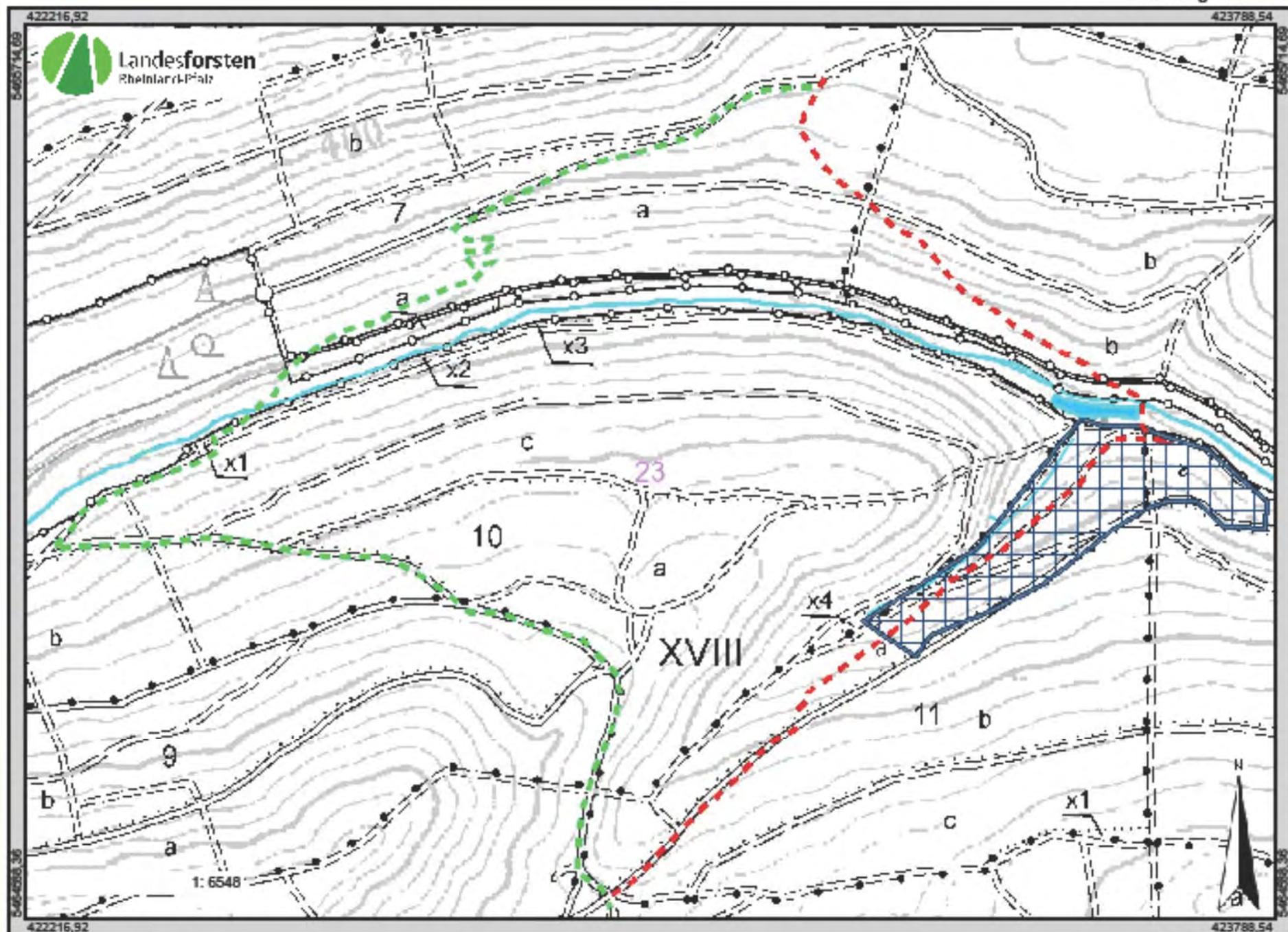
# Ecological factors taken into account in the stand

- Close to Nature Forestry
- Nature individualities of the stand
  - Pond
  - Creek
- Insects (Bark/Longhorn beetles)
- Mammals (Red Deer)
- Birds (Woodpeckers, bats)
- Fungi



# Closure and detour planning for the hiking trail in the area-post operation clearing of the path

- Part of PWV hiking trail whose route runs from Göllheim to Eppenbrunn
- Limited detour options
- Detour notices placed at each point of entrance to it and along it
- Trail distances
  - Original 1613m
  - New 2404m
  - Difference 791m



Umleitung des Wanderpfades  
Detour of the hiking path

27.02.2015 13:16:58

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# Negotiations with contracting companies for the cutting

## 1<sup>st</sup> option motormanual

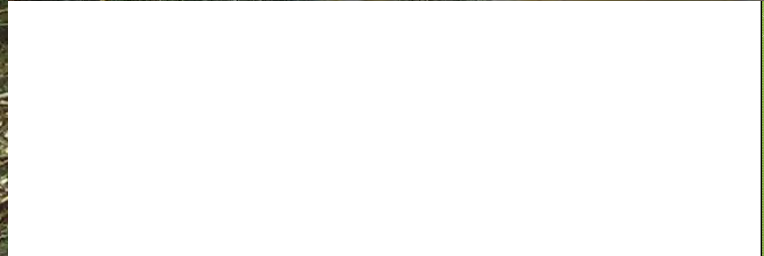
- Problems with tree size and number
- Companies get paid by the cubic meter
- Hard to cut to assortments & piling

## 2<sup>nd</sup> consideration cable yarder

- Stand width restricts cable yarder

## 3<sup>rd</sup> option and conclusion

- Combine motormanual labour and harvester



# Estimation of the income from the sale of the timber

## Estimation challenges

- Lack of information
- Method of estimated parameters

Deductive logic used

Some species sold only to one buyer

# Observations of the selected company's ongoing work

- Safety observations
- Method advising
  - Difference in felling practice (hinge wood width)
- Language difficulties

Overall good job and in timely fashion

## Calculation of actual income and cross-reference with estimated income

Pile Number	Species	Assortment	Buyer	Length (m)	m <sup>3</sup> (rm)	m <sup>3</sup> (fm)
43909	Spruce	IS/NK	Stora Enso	3	125.21	
43313	Birch/Beech	IS/N	Laminate Park	3	21.28	
43914	Spruce/Pine	IS/NFK	Laminate Park	3	94.46	
43912	Spruce	LS Ba	Rettenmeier	4		106.96
43911	Douglas-Fir	LS Ba	Rettenmeier	4		24.95
43910	Spr(80)/Dou(20)	LVP	Bien Holz	2.4	149.55	
				Total	390.5	131.91

Attention to "Solid m3", "with-air m3" and dry wood

# Calculation of actual income and cross-reference with estimated income

Difference of **7.77%** acceptable

- Experience/human error
- Circumstance/Externalities (% of rot)
- Estimated information (NH%)



# Future thoughts about the stand

- Hunting (season/threshold)
- Clear cut
- Change of main species
- Extension of current measures (stem protective net) to all crop trees



# Ecology

- Flora
- Fauna
- Human influence
- Biosphere reserve



# Flora

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## Other vegetation

- Acidophilic species
- rich mushroom and berry communities
- acid loving march plants

# Fauna

- Mammals
  - Red/Roe Deer, wild boar, fox, badger etc..
  - Endangered bats, pine marten, wildcat, lynx
- Birds
  - Hoopoe, woodpecker, kingfisher etc..
  - Endangered peregrine falcon
- amphibians, reptiles, fish and insects
  - wood ants and the longhorn and bark beetles
  - Healthy fish habitats creeks/ponds

# Human Influence

- Historical depletion of natural resources
- Re-establishment and multi purpose forestry
- Close-to-nature forestry
- Recreation
- Hunting
- Sporting

# Biosphere reserve

- recognized in 1992 by UNESCO
- UNESCO guidelines adopted in 2007
  - **Core areas:** complete protection /least possible human influence on natural processes.
  - **Buffer zones:** “ecologically sound farming practices: that conserve the landscape and link the core areas.
  - **Transition areas:** promotion of model projects for sustainability (environmentally friendly ways of production)

Outcome 16 core zones

# Governance

Surveys created

- For hiking trails
- For forest practices

Object was to get information of local opinion on hiking detours and forest practice

Unfortunately no answers

# References

- <http://www.dreamstime.com/> map of Europe taken 12/04/2015
- [map-of-germany.org](http://map-of-germany.org) Map of Germany taken 12/04/2015
- <http://www.viewsoftheworld.net/?p=914>  
Topographical/population map of Germany taken 12/04/2015
- Presentation of forest director Burkhard Steckel, Management of (German) State owned forest, China 2015
- Forest office PPS software, Data on harvesting measurements and details
- The Forest district office website [www.wald-rlp.de](http://www.wald-rlp.de) accessed last on April 1<sup>st</sup>, 2015
- Contracts the forest office holds between itself and companies (Gross, Sartoris) for harvesting and timber sales (Rettenmeier, Homanit, Bienholz, Laminat Park, Stora Enso, proNARO)





The End

Thanks for your attentions