



**Bundesamt für Wasserwirtschaft**  
Institut für Kulturtechnik und Bodenwasserhaushalt

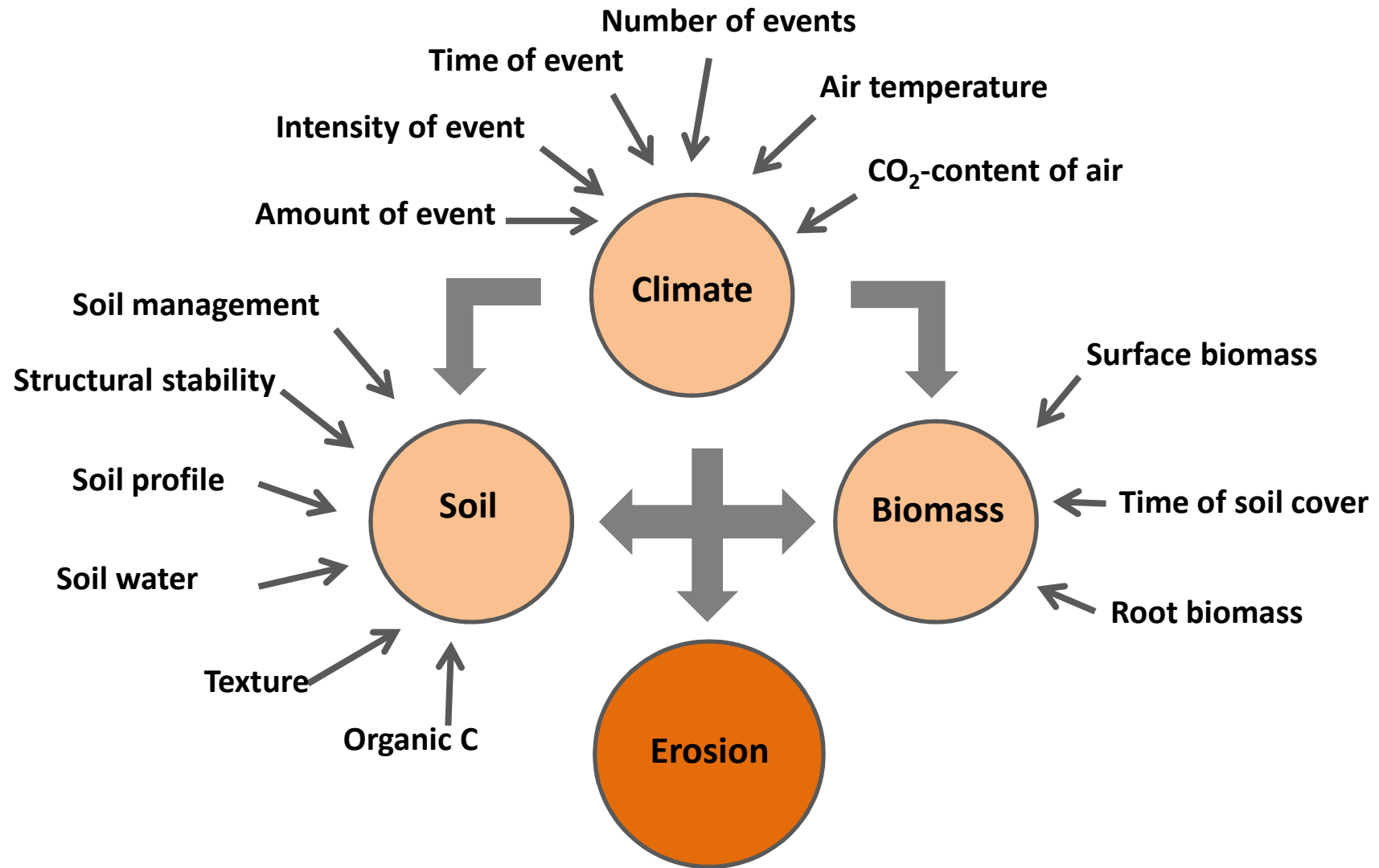


# Soil Erosion

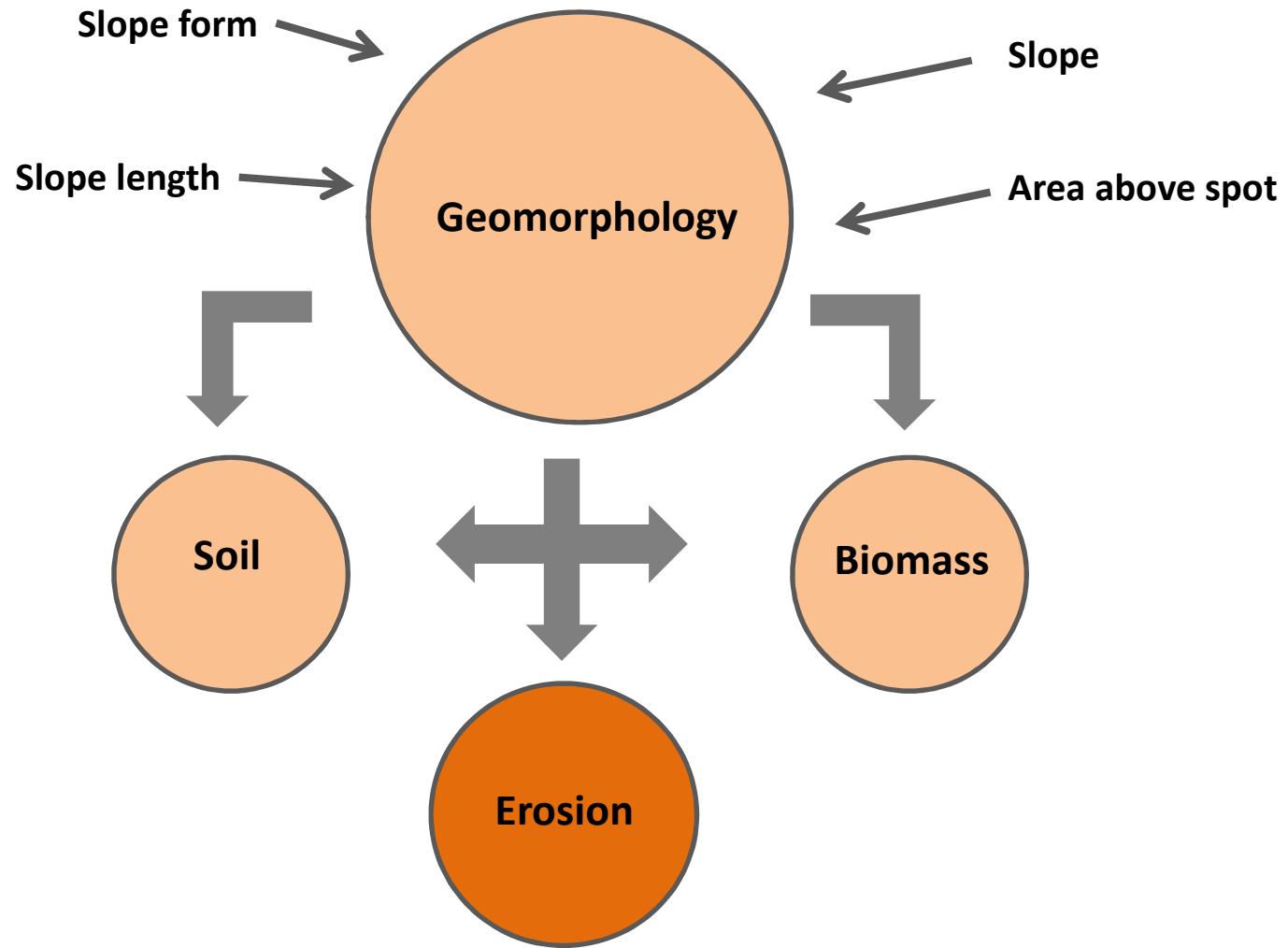
Peter Strauss

**Which factors influence soil erosion**

# Spot view



# Landscape view



# **Seasonal development of plant cover**

# Seasonal appearance of erosive rainfall as compared to development of plant cover

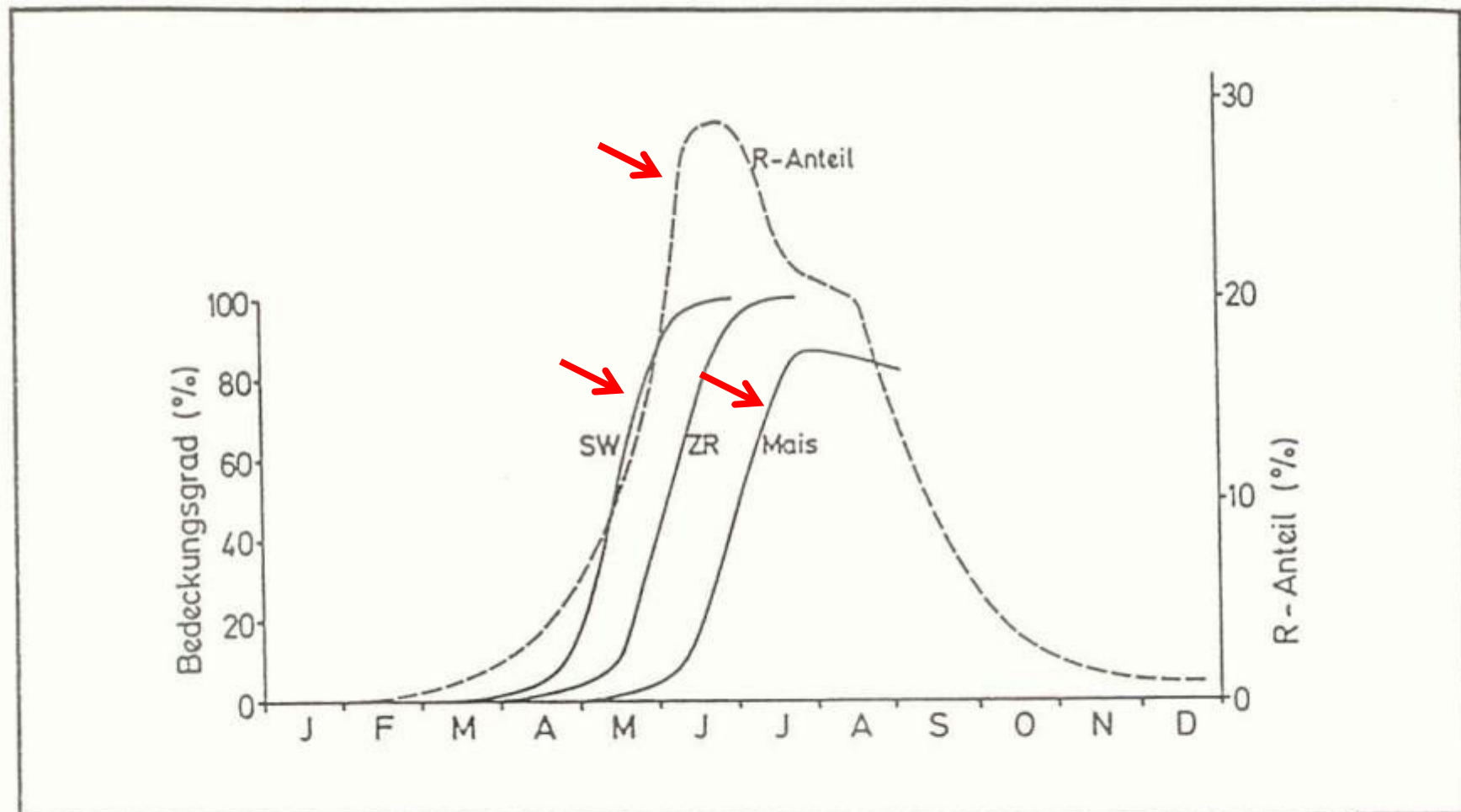
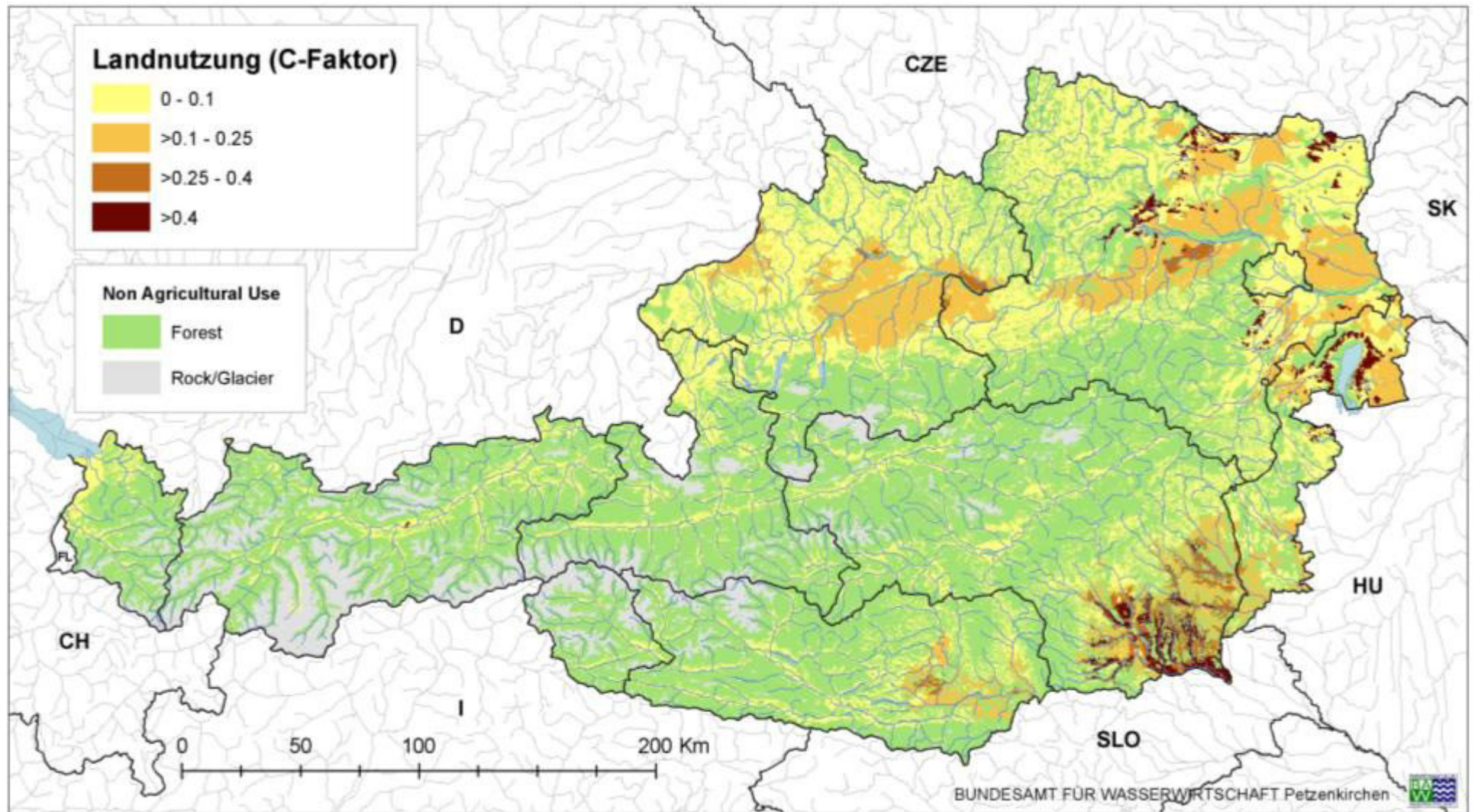


Abb. 32: Vergleich zwischen Bodenbedeckungsgrad und dem Auftreten erosiver Niederschläge für Sommerweizen, Zuckerrübe und Mais in Bayern (nach Schwertmann, 1985).



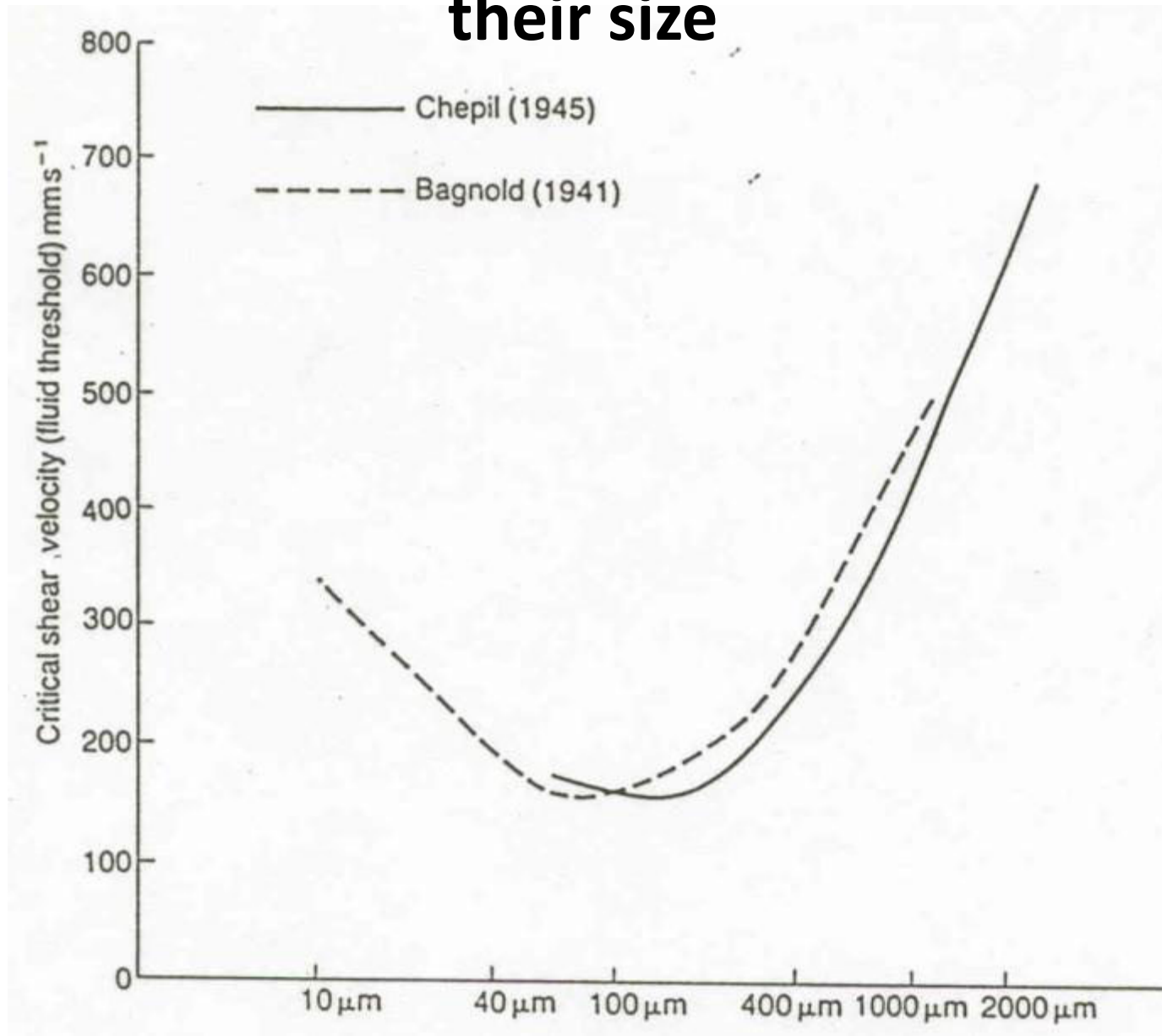
# Spatial distribution of critical landuse



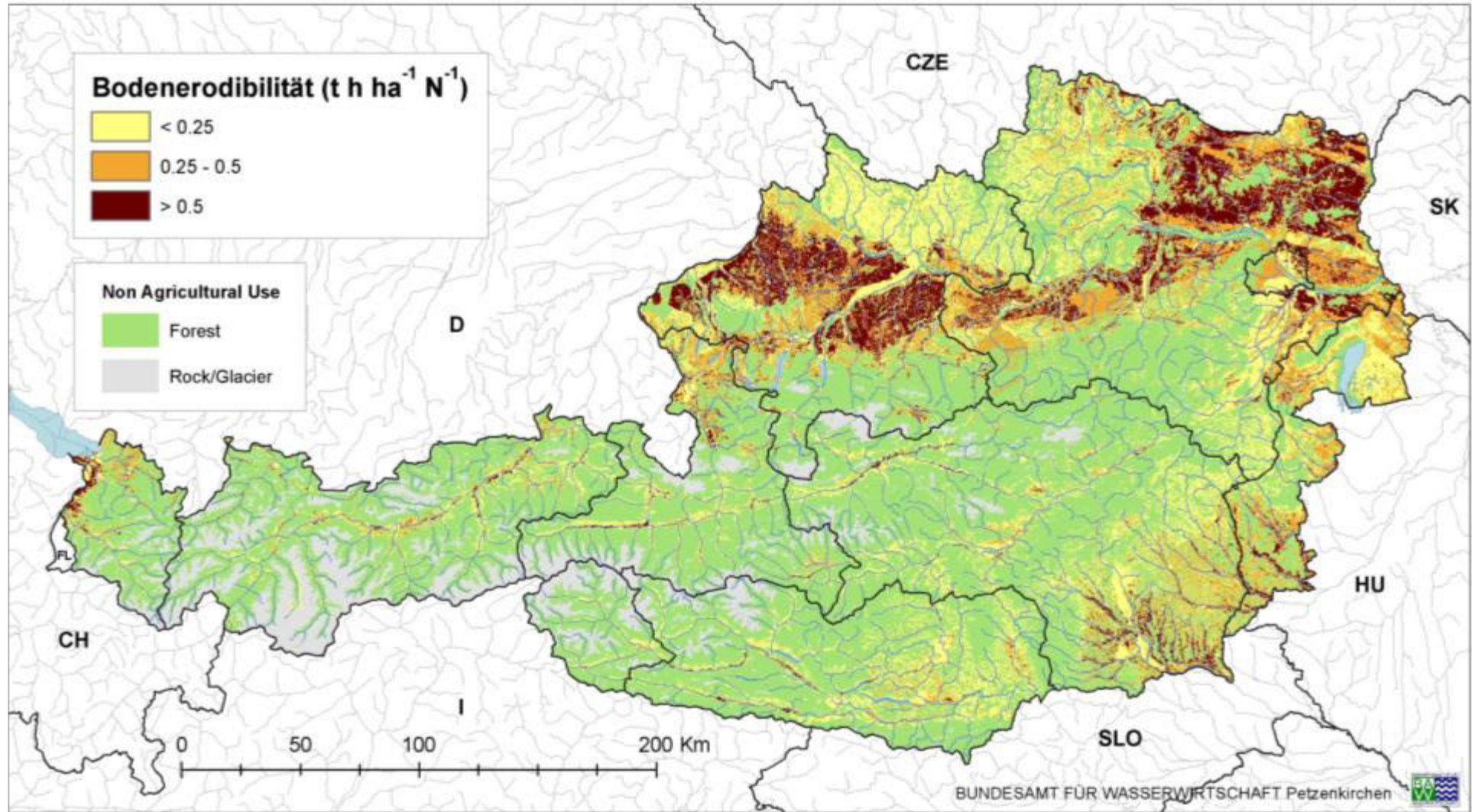


# **Soil erodibiliy**

# Critical shear stress for soil particles depending on their size



# Spatial distribution of soil erodibility



# **Soil protection using conservation tillage techniques**



Prasuhn ART, 2009

Relative  
Soil Loss  
(%)



Soil cover through mulching (%)

(Schwertmann, 1987)



# **Some more management issues**



# Field tracks – the origin of surface runoff



# Beregnungsversuche



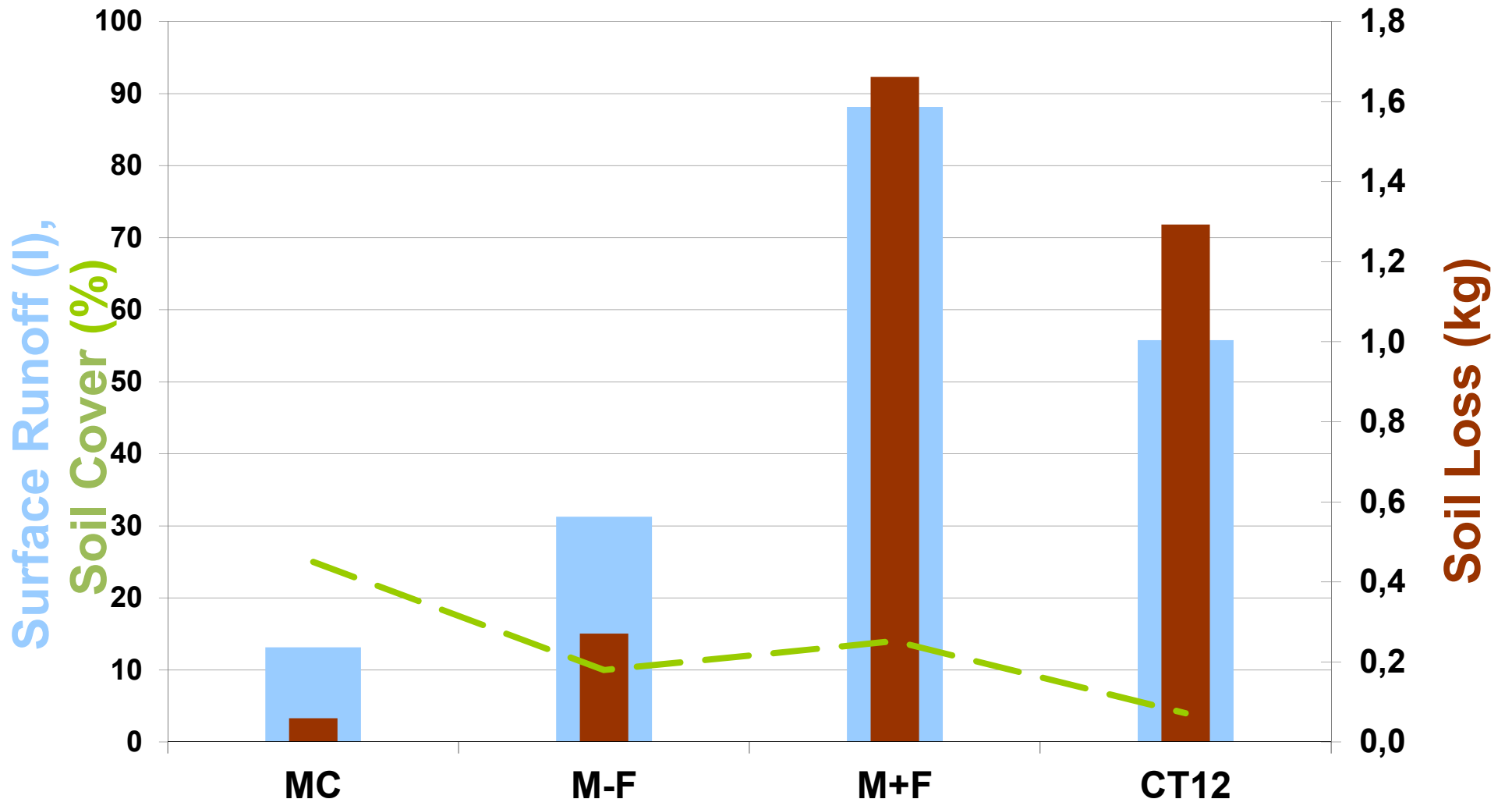
# Different conservation management techniques for Maize

**M+F** = Mulching, 1x chisel, with tracks, Seeding

**M-F** = Mulching, 1x chisel, without tracks, Seeding

**MC** = Mulching, 1x rotary cross harrow + Seeding

**CT12** = Ploughing in autumn, 1x rotary cross harrow, Seeding



**Soil improvement!!**



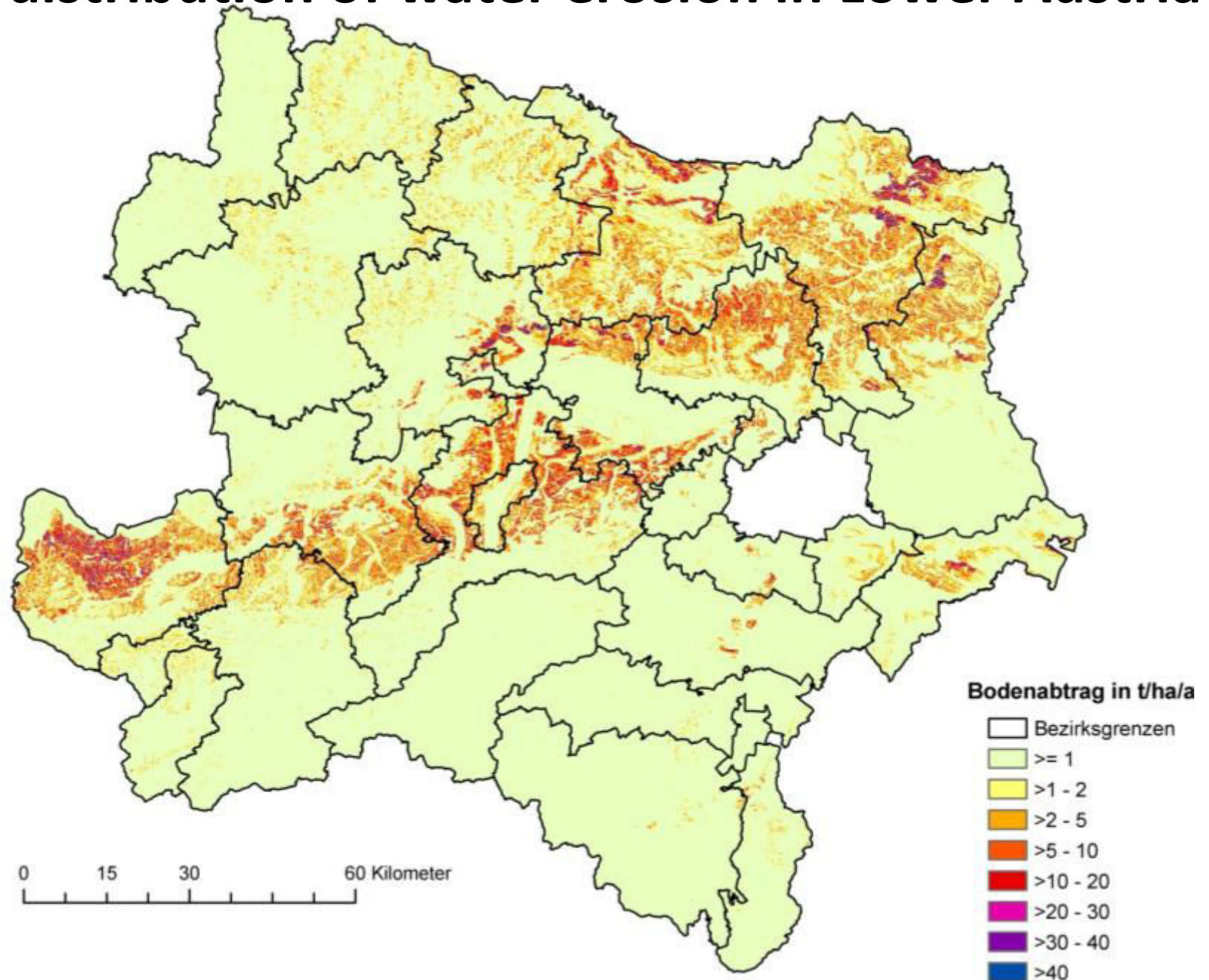
**SONDAR CZ-AT**

## **Activities within WP2 - Erosion**

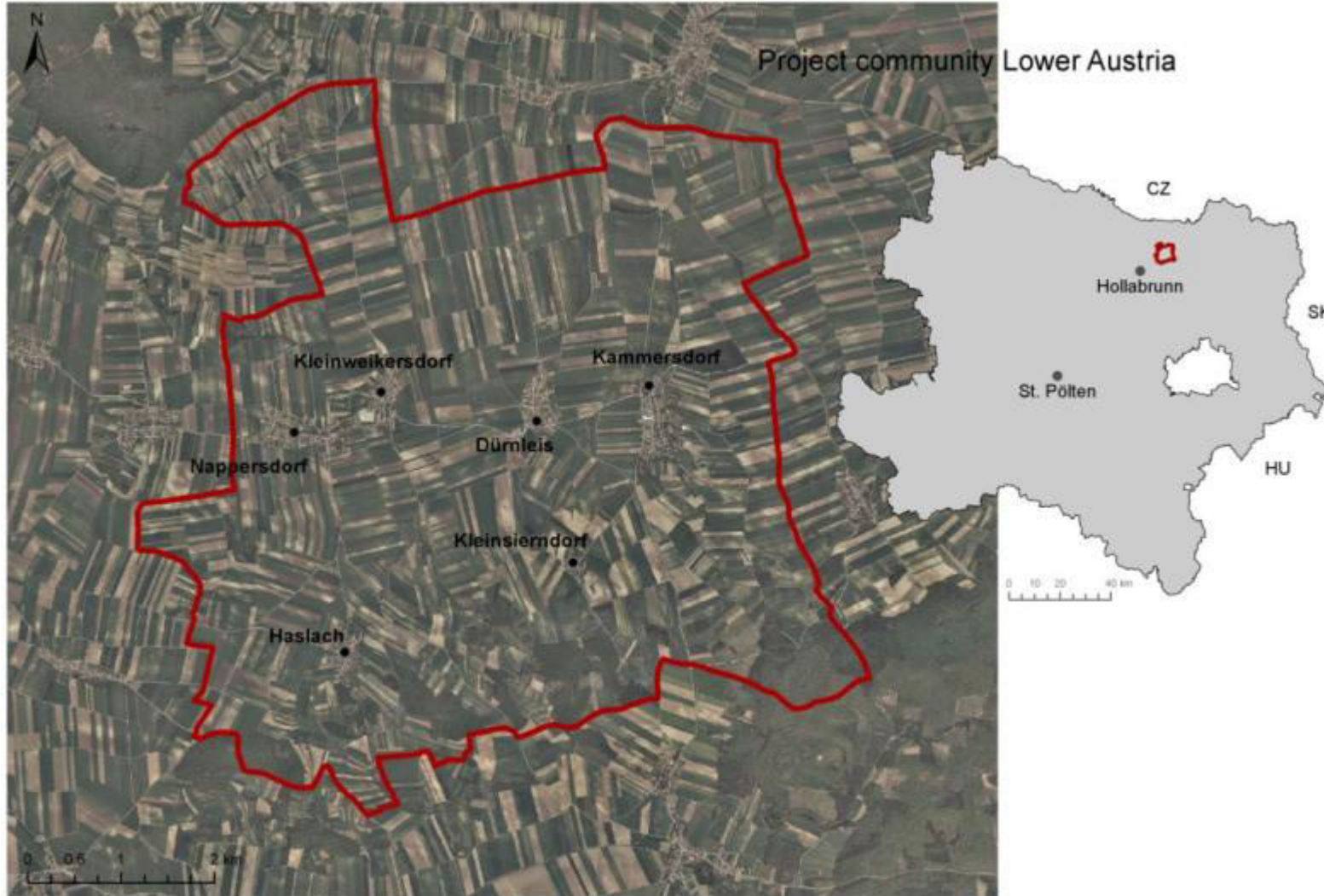
- Determination of factors that lead to erosion – example of Nappersdorf – Kammersdorf
- Propose measures to combat erosion
- Compare results with erosion factors in CZ obtained with same methodology (harmonisation)
- Connect historical development of erosion to societal changes (1820 – now)



# Spatial distribution of water erosion in Lower Austria

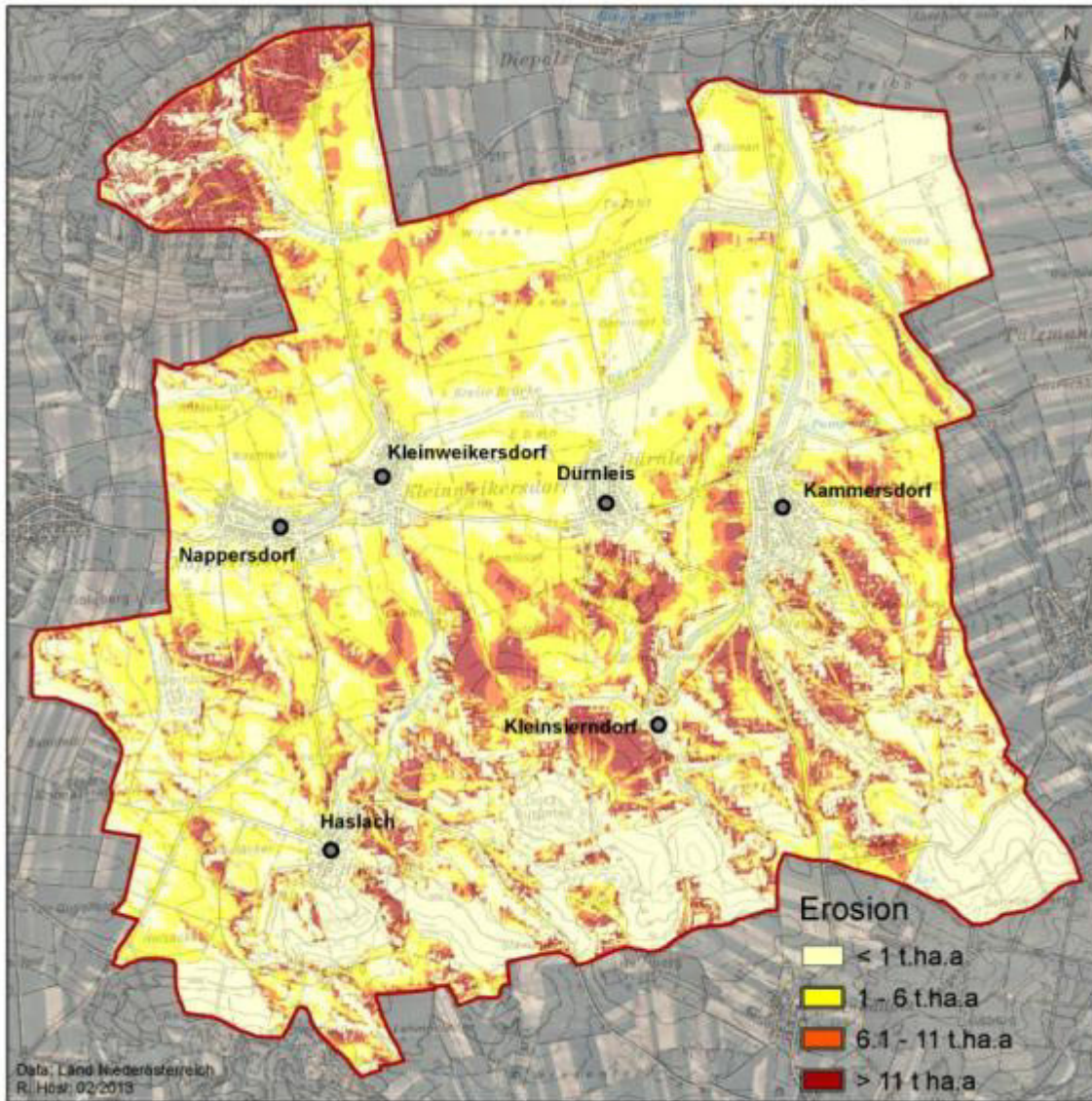


# Nappersdorf-Kammersdorf





2008



Erosion risk – USLE based  
Land Use Invekos 2008

# To Do

- Comparison and harmonisation of data base for erosion calculation
- Soil erosion risk calculation – Land use from Invekos data 2011
- Historical analysis 1860?
- Historical analysis 1945 – 2008
  - Changes in land use  
relation of farmland/vineyard/grassland/forest
  - Changes concerning infrastructure, road networks > linear flow paths
  - Allocation of these changes to soil erosion estimation
- Comparison with project community in Czech Republic
- Development of a catalogue of measures against soil erosion



## **Bundesamt für Wasserwirtschaft**

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lebensministerium.at

Thank you for your attention!

**Peter Strauss**

Tel.: 07416/52108-31

Fax: 07416/52108-90

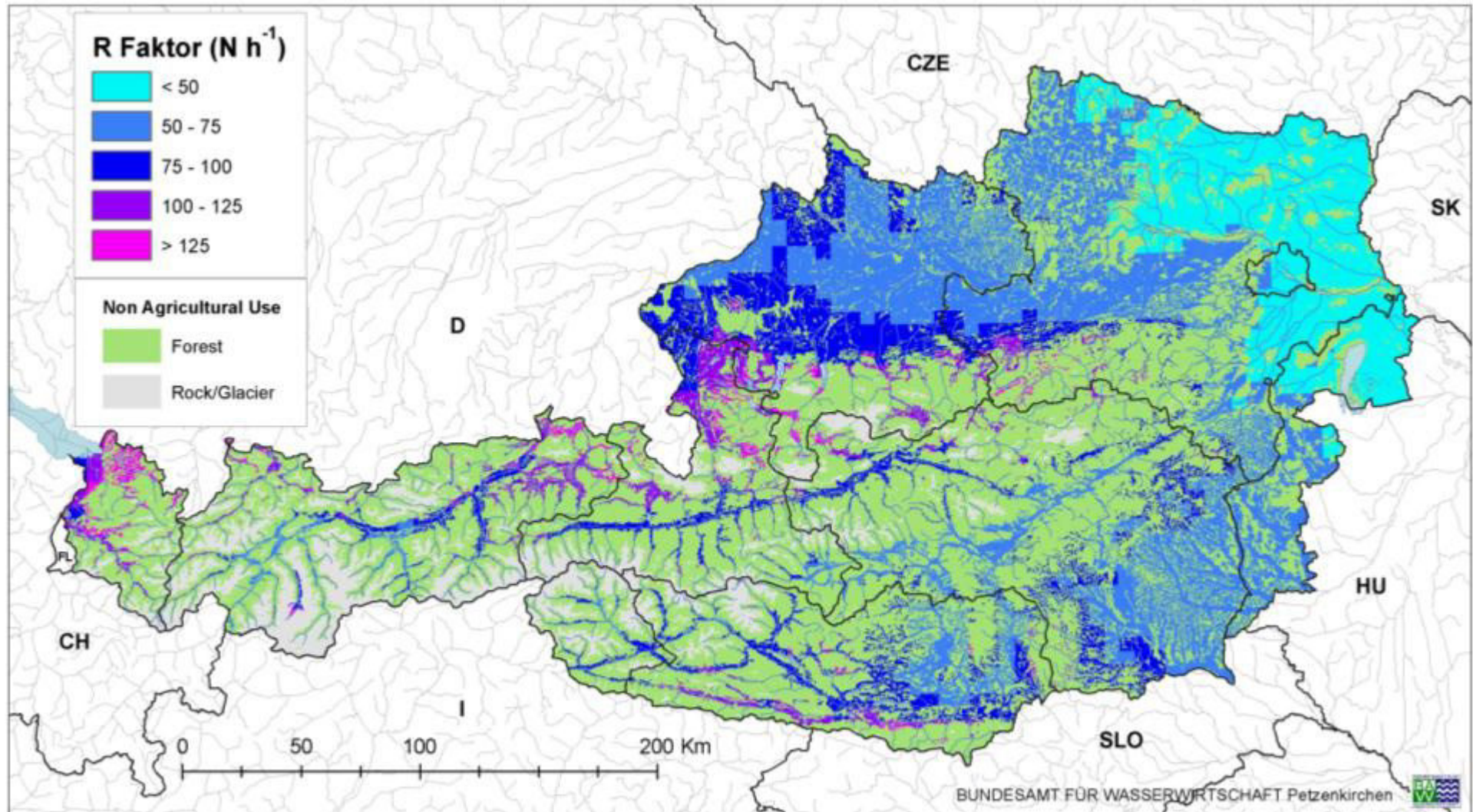
Peter.strauss@baw.at

[www.baw.at](http://www.baw.at)

# Soil productivity?

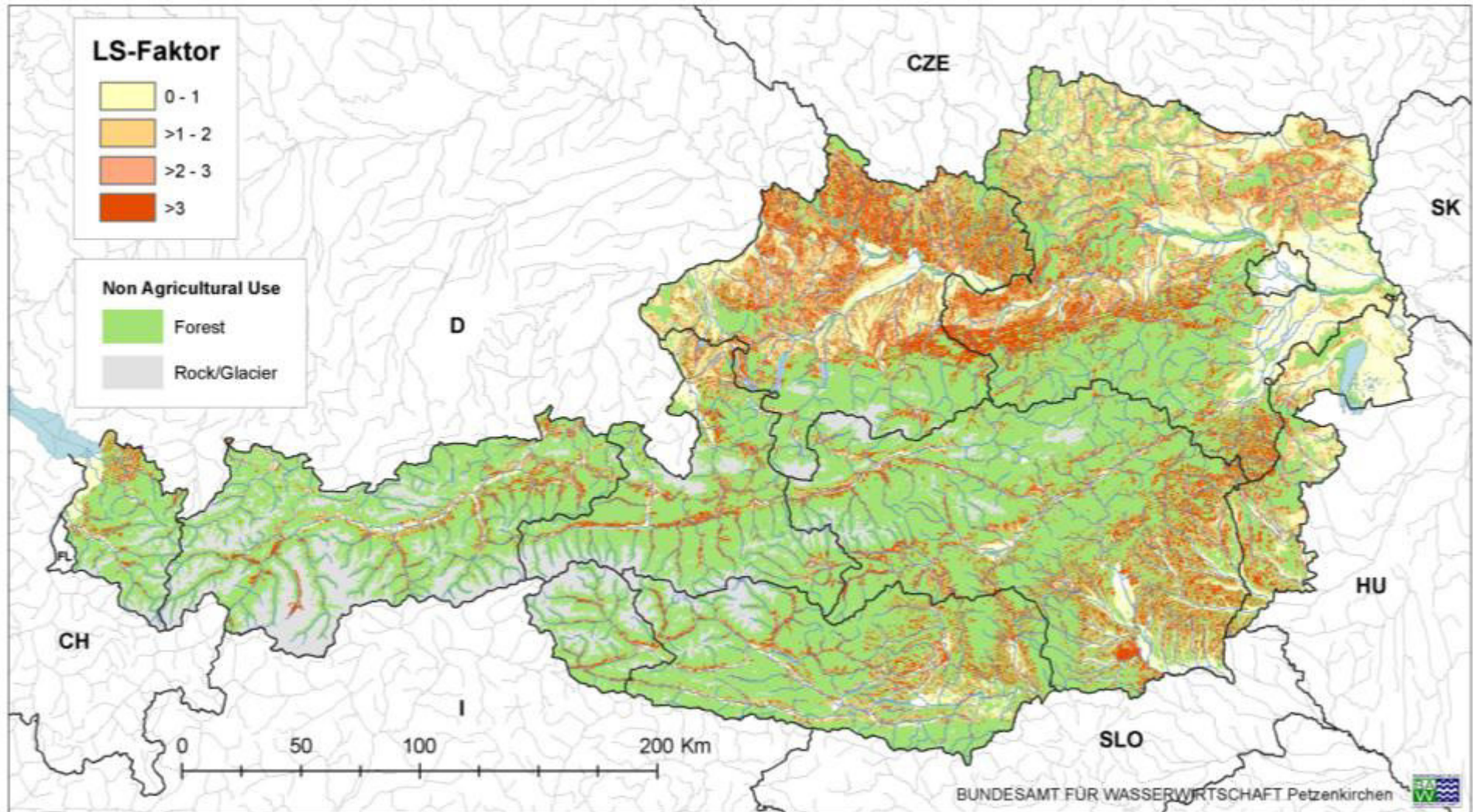


# Rain Erosivity





# Slope and Slope Length



# Spatial distribution of Water Erosion in Austria

