



# Bodenverbrauch messbar gemacht: Satellitendaten im Einsatz für Landschafts- und Naturschutz

✓ Gebhard Banko | UBA

Christian Hoffmann | GeoVille

GeoVille

umweltbundesamt<sup>U</sup>  
ENVIRONMENT AGENCY AUSTRIA

# SOIL – A LIMITED SOURCE: QUANTITY MATTERS

Yearly loss of agricultural area

in percent

Need of agricultural area

in m<sup>2</sup> per capita

Abbildung aus Urheberrechtsgründen  
entfernt !

CZ  
0,17

DE  
0,25

AT  
0,5

required  
agri-area  
3000

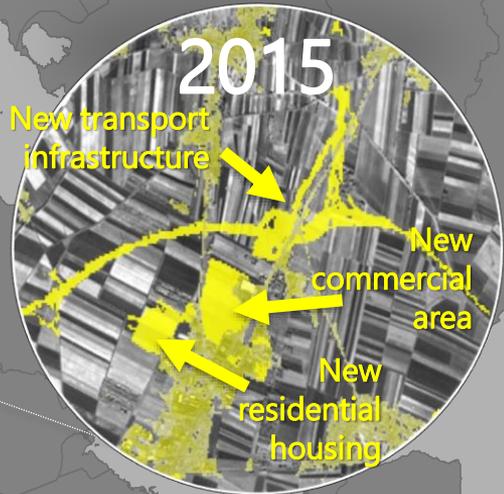
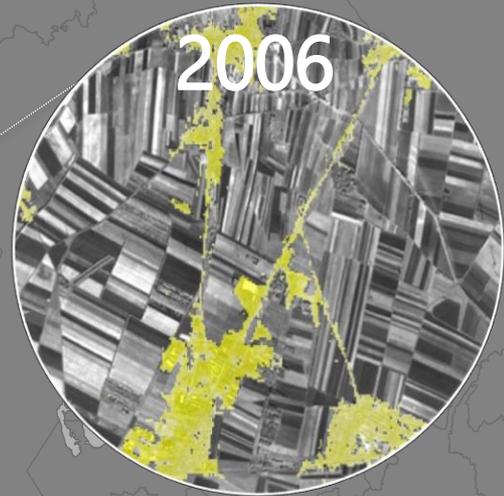
available  
agri-area  
1600

imported  
agri-area  
1400

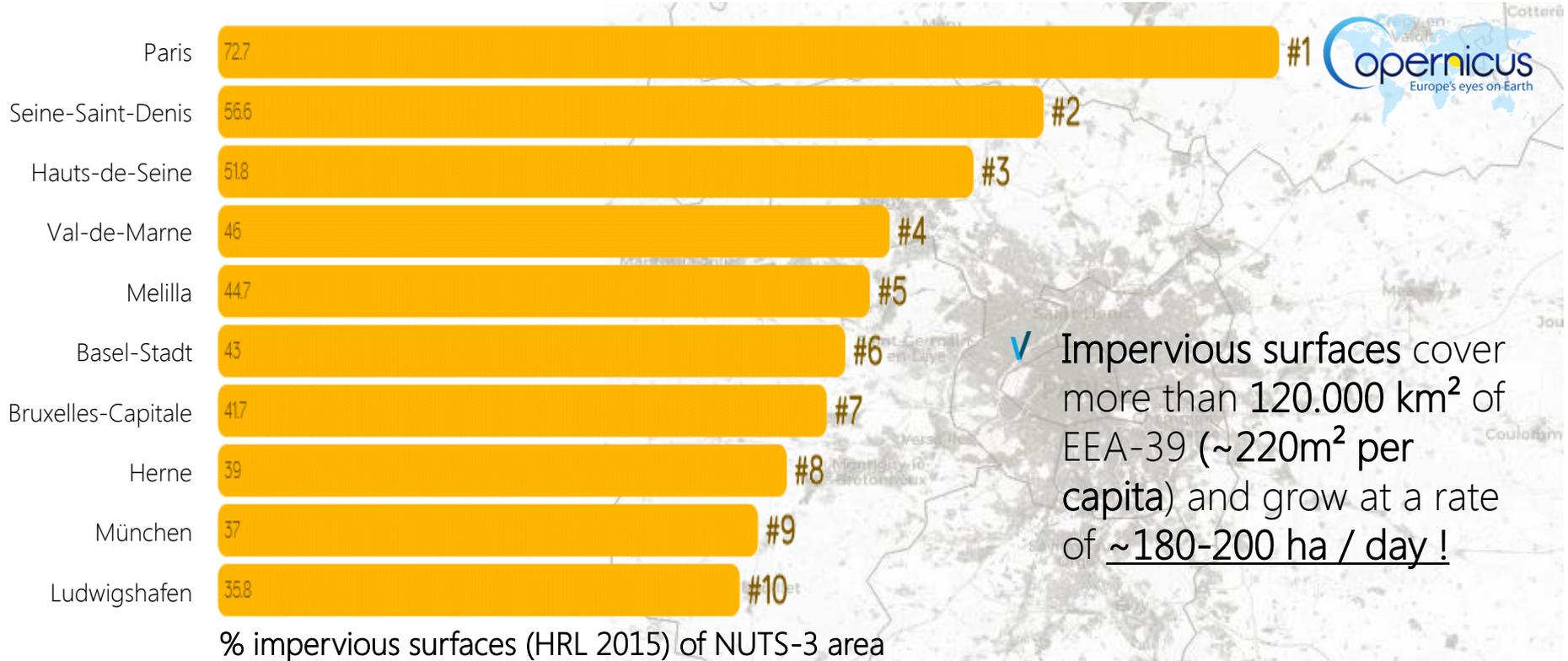
offers  
pan-European information,

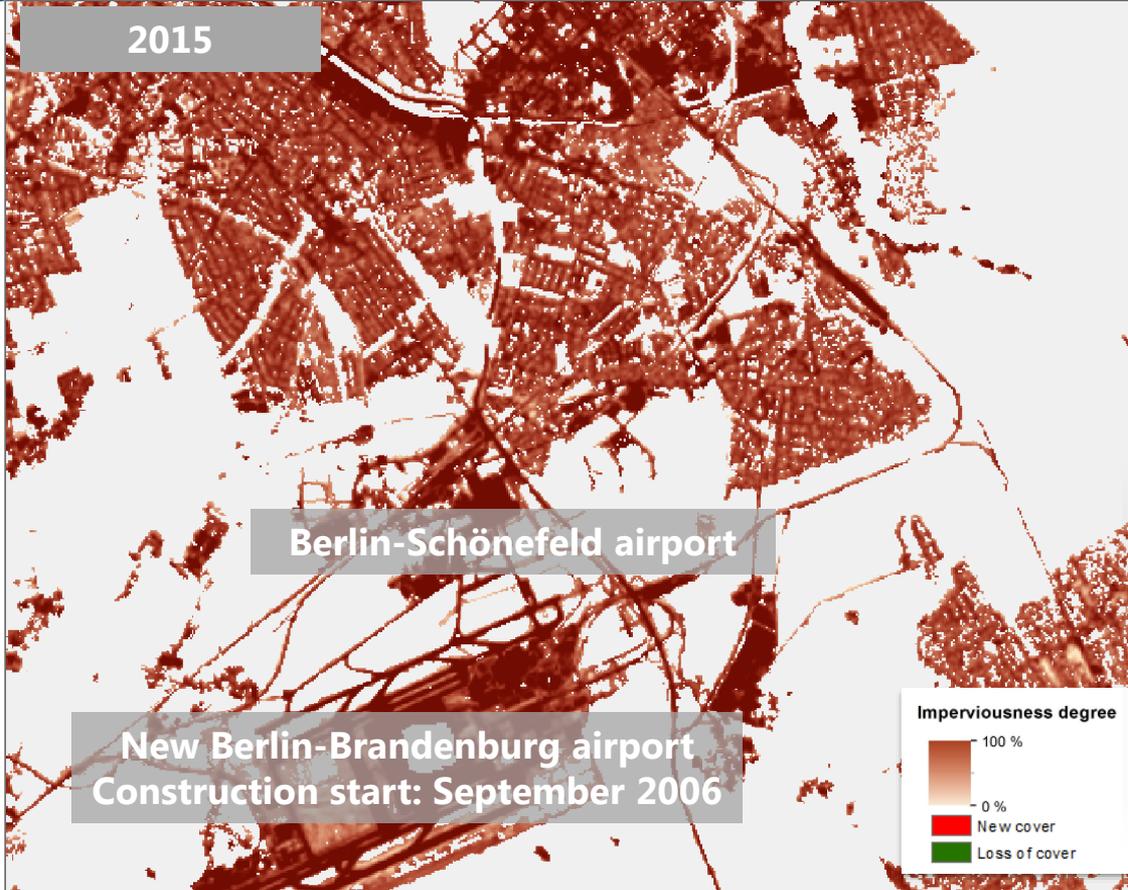
change data on local level,

... and key input for  
real-world applications



## HOW DOES SOIL SEALING DEVELOP IN EUROPE?

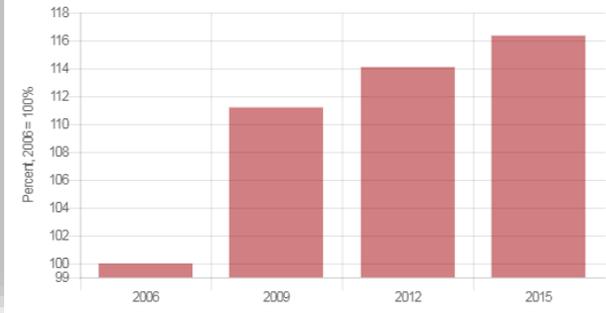




NUTS-3 region  
**DE406**  
Dahme-Spreewald

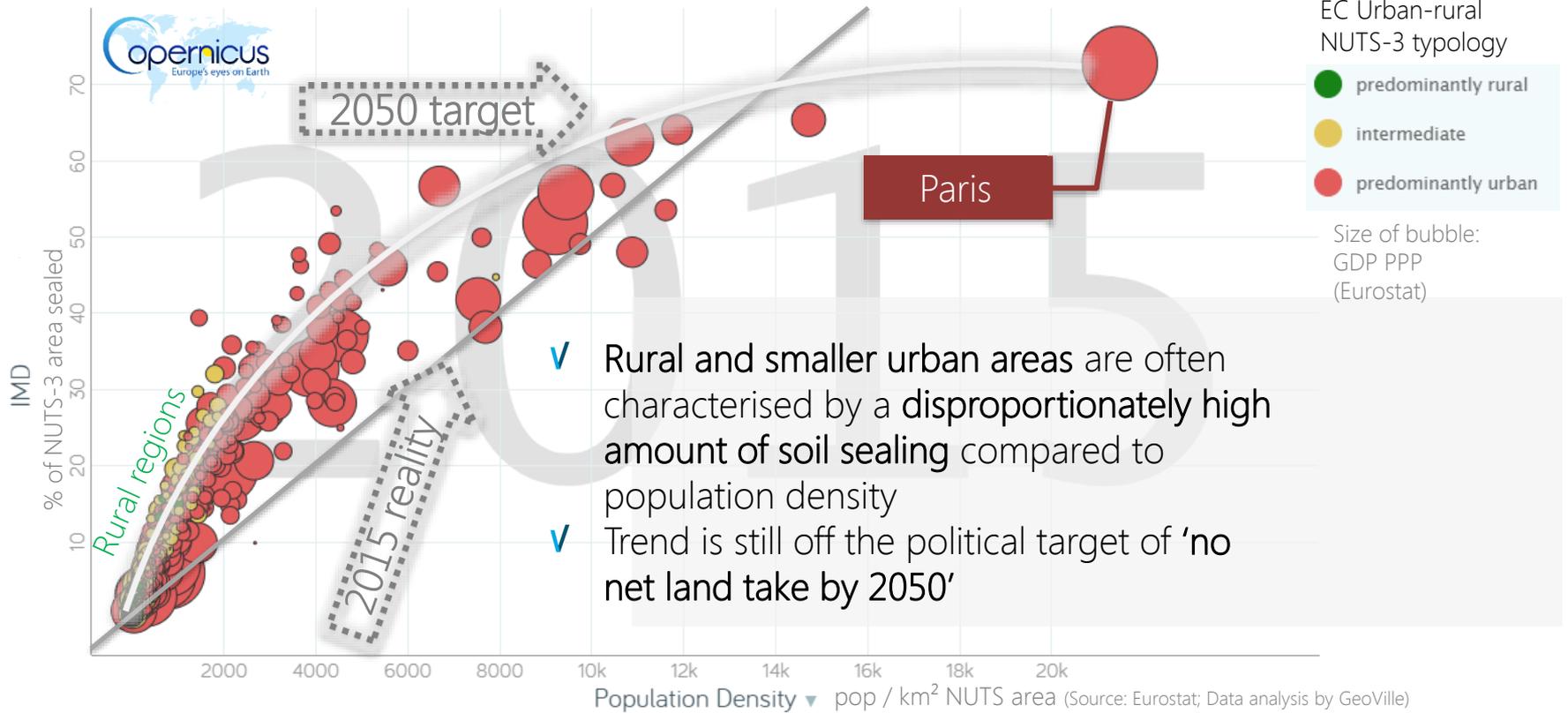


Imperviousness change 2006-2015



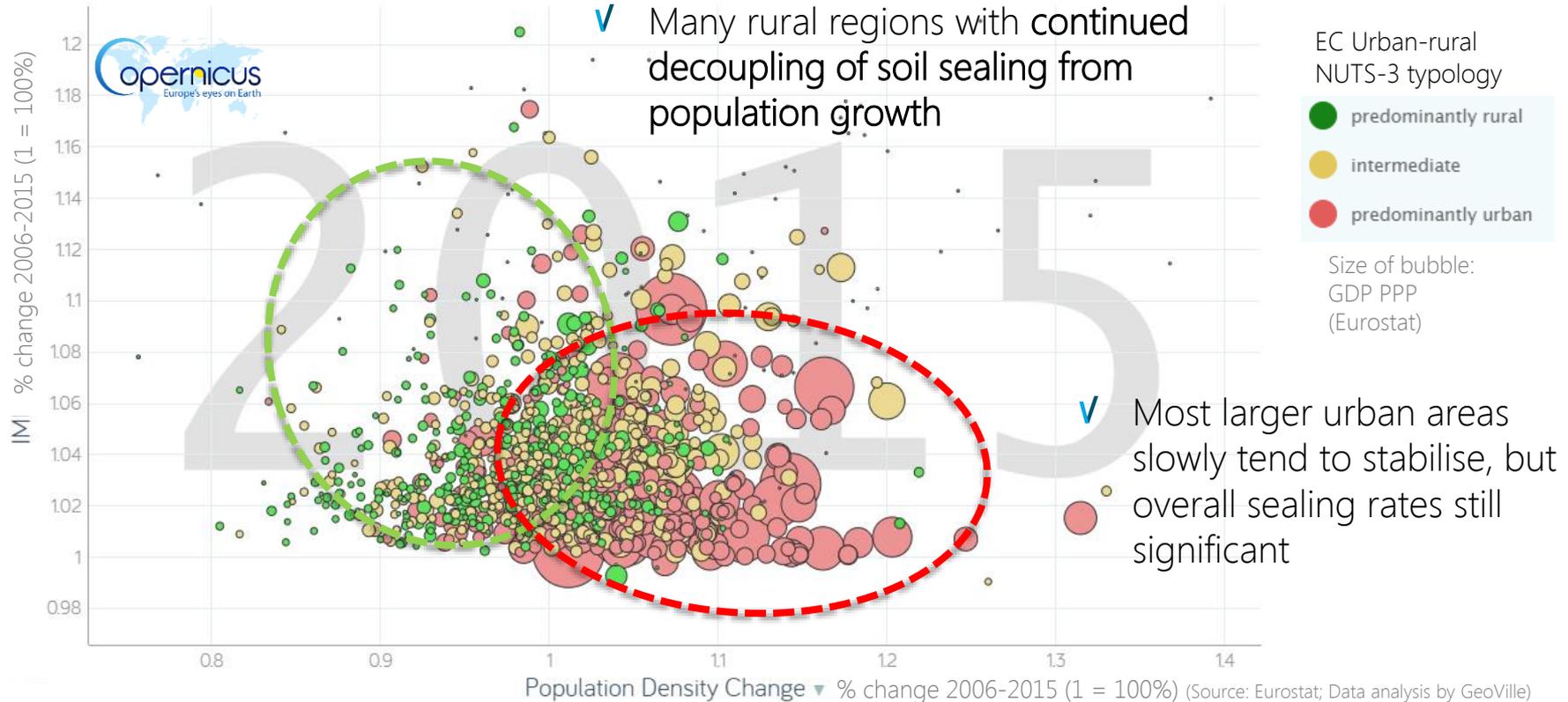
(Source: EEA; modified by GeoVille)

# A TREND THAT NEVER ENDS?



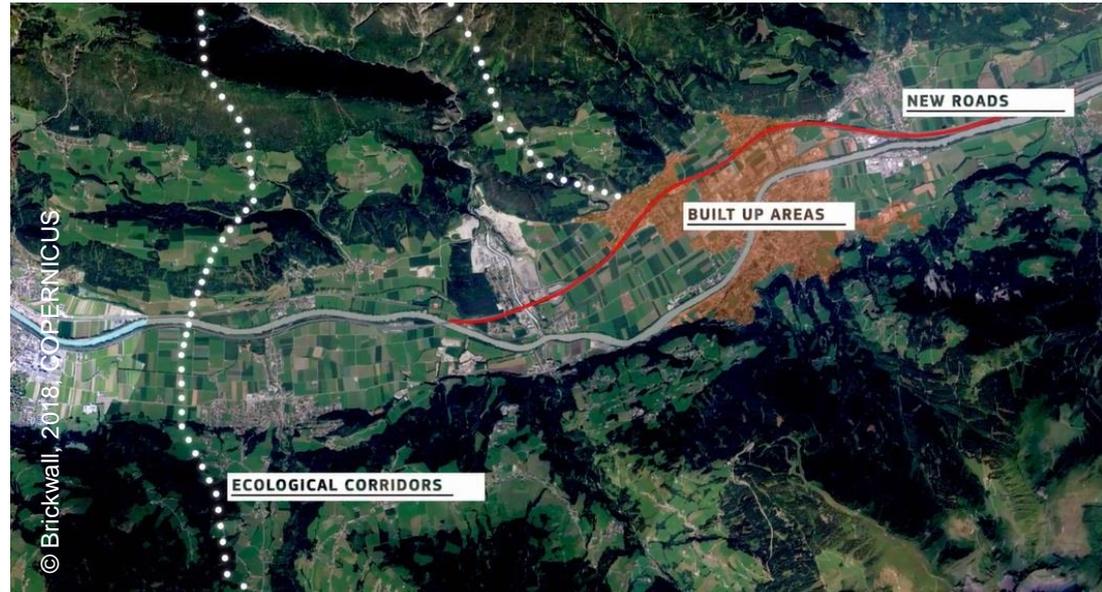
- ✓ Rural and smaller urban areas are often characterised by a disproportionately high amount of soil sealing compared to population density
- ✓ Trend is still off the political target of 'no net land take by 2050'

# RURAL REGIONS IN THE SPOTLIGHT



## ...BUT ALSO SPATIAL CONFIGURATION SOIL AND LANDSCAPE CONNECTIVITY

- Land take is dividing landscape into smaller and smaller pieces
  - landscape fragmentation
    - absolute area numbers of land take in relation to Austria are still small, but
    - Spatial configuration is of major importance
- Fragmented landscapes
  - Barriers for movement of animals
  - Barriers for human recreation

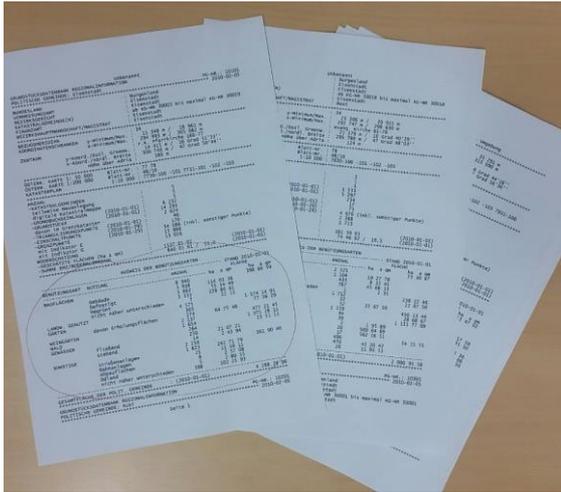


# NORMATIVE REFERENCES

- International conventions
  - Alpine convention
  - Bern convention
  - UN biodiversity convention– CBD
    - Aichi-Target 5
- EU
  - EU biodiversity strategy 2020
  - Habitat directive
  - EU green infrastructure strategy
- Austria
  - Biodiversity strategy Austria 2020+
    - Target 10
    - Target 11

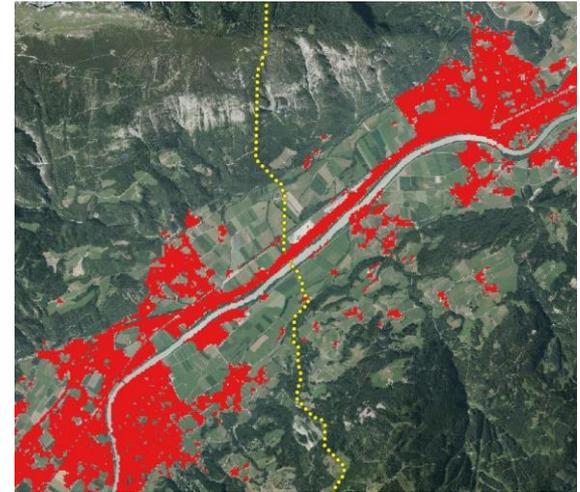
**Abbildung aus Urheberrechtsgründen  
entfernt !**

# DATA SOURCES FOR LAND TAKE



© Banko, 2018

OLD data: statistical aggregated,  
not spatially explicit



© Banko, 2018

NEW data: spatially  
explicit, up-to-date

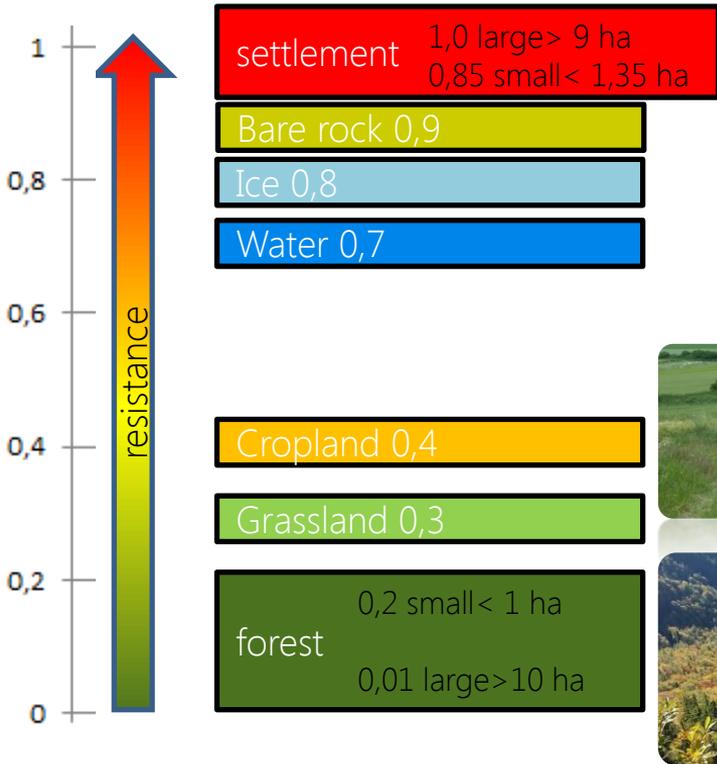
# PASSING OF ALPINE VALLEY: INN

## EXAMPLE: TIROL – NEU-TERFENS



# GIS MODELLING

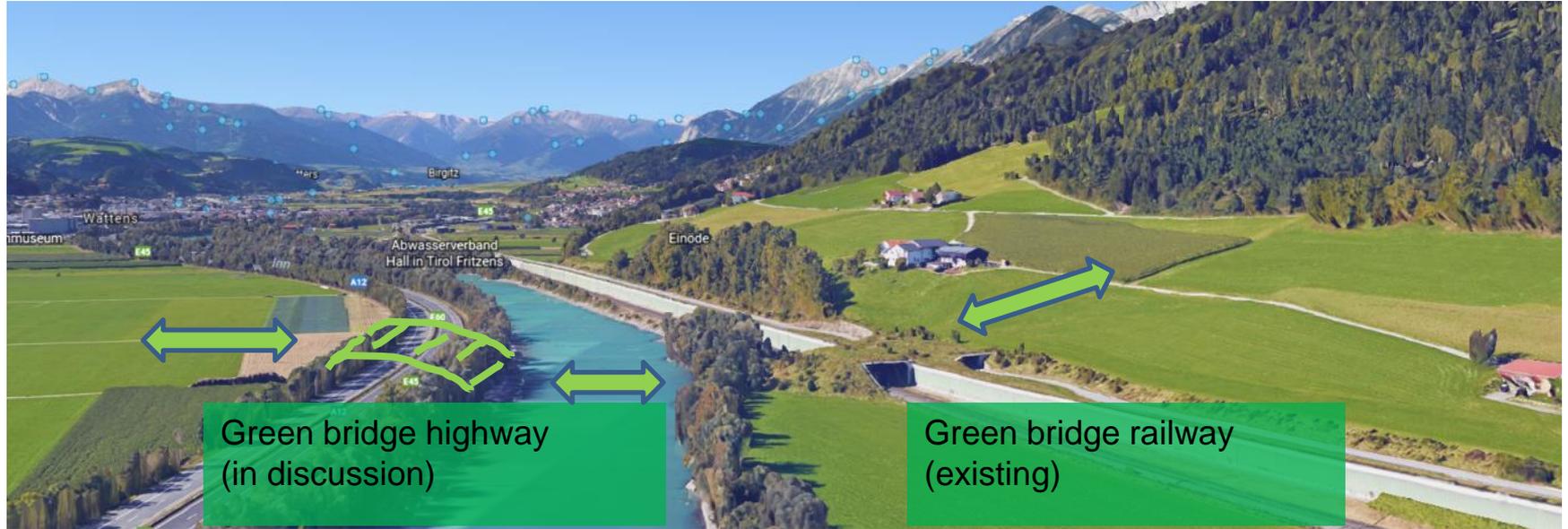
## DEFINITION OF RESISTANCE VALUES FOR LANDSCAPES



Bilder © G. Banko

# PASSING OF ALPINE VALLEY: INN

## EXAMPLE: TIROL – NEU-TERFENS



# MAINTENANCE OF OPEN LANDSCAPES

## EXAMPLE: TIROL – NEU-TERFENS



©

Bilder © Google 2018, Kartendaten @ Google 2018

# NATIONAL USE OF HRL IMPERVIOUSNESS

- Practical use
  - Maintenance of ecological corridors using spatial planning
  - Green bridges across highways

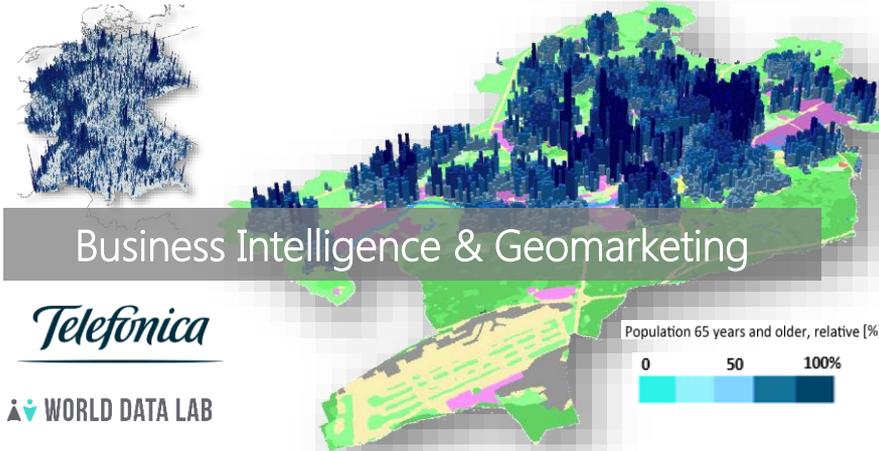
Abbildung aus Urheberrechtsgründen entfernt !

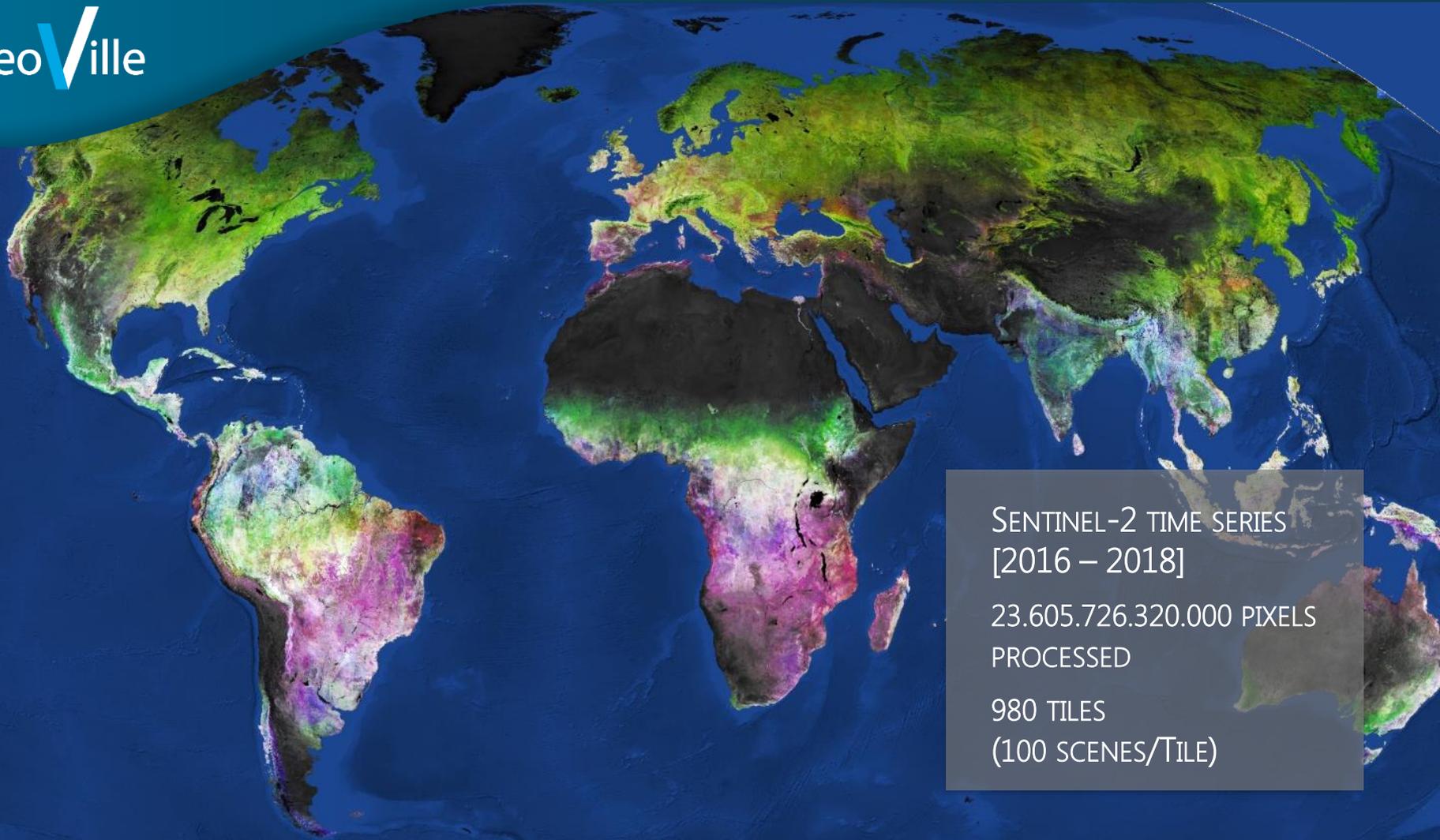
© G. Banko





### Environmental Reporting





SENTINEL-2 TIME SERIES  
[2016 – 2018]

23.605.726.320.000 PIXELS  
PROCESSED

980 TILES  
(100 SCENES/TILE)



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# Thank you!

For further information please contact:

Gebhard Banko

Umweltbundesamt GmbH

Spittelauer Lände 5

1090 Wien, Austria

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

Christian Hoffmann

GeoVille GmbH

Sparkassenplatz 2

6020 Innsbruck, Austria

[www.geoville.com](http://www.geoville.com)

**GeoVille**

Information Systems and  
Data Processing GmbH

**umweltbundesamt**<sup>U</sup>  
ENVIRONMENT AGENCY AUSTRIA