

# MOR€CO – Mobility and Residential Costs

Improving the settlement development in the  
Transnational Alpine Space Region

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# Structure

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- Conditions in the alpine space region
- The intended MORECO Tool Kit
- Munich Case Study
  - Vulnerability assessment on a regional level
  - Cost calculation for individuals and households
- Conclusion and Outlook

# Introduction

- EU Alpine Space project
- 10 project partners in Austria, France, Germany, Italy, Slovenia
- Runs until July 2014



# Introduction

## General aims of MORECO

- Mobility and residential cost transparency
- Influencing people to a more sustainable mobility behavior
- Good governance for a sustainable regional settlement pattern in the pilot sites

→ *By Adapting and implementing already existing tools and knowledge*

# Conditions in the alpine space region

- The Alpine Space Region extends over approx. 200.000 km<sup>2</sup>
- Eight Countries (Slovenia, France, Germany, Switzerland, Italy, Austria, Liechtenstein, Monaco)
- Very heterogenous region
  - Population density between 4500 and 74 people/km<sup>2</sup>
  - Various settlement and traffic conditions
  - Co-existing different trends: f.e. growing and shrinking regions

# Conditions in the alpine space region

## Dense areas

- Increasing costs for housing and mobility
  - Importance of providing an effective technical infrastructure
  - Need for affordable real estate

## Rural areas

- Increasing costs for the individual mobility
  - Importance of maintaining the quality of the public (transport) infrastructure
  - Need for developing and structuring the (existing) settlement in a sustainable way

# The intended MOR€CO Tool Kit

Three main target groups

- Househunting citizens and other private households
- Planners and public transport organisations
- Politicians, decision makers and municipalities

# The intended MOR€CO Tool Kit

*Househunting citizens and other private households*

Challenge: Increasing citizen's awareness of the relation between residential location decision and induced mobility costs

Possible solution: cost calculation tool for the whole alpine region (like already realized in other regions, f.e. Munich Residential and Mobility Cost Calculator)

# The intended MOR€CO Tool Kit

*Planners and public transport organisations*

Challenge: Rising the awareness of spatial and traffic planners concerning settlement structure and induced mobility needs and behavior

Possible solution: a GIS-based tool to analyze planning decisions concerning future settlement and traffic development

→ using the knowledge of already existing tools like the “was kostet mein Baugebiet”-calculator GGR)

# The intended MOR€CO Tool Kit

*Politicians, decision makers and municipalities*

Challenge: providing effective information and recommendations for decisions concerning sustainable settlement and traffic development

Possible solutions: “soft” tools like

- Governance and cooperation strategies
- Consulting material
- Workshops and seminars

# Munich Case Study

Sharp increase in mobility costs due to peak oil and scarcity of fossil fuel

Impact on regional level

- Vulnerability assessment on a regional level

Impact on individual and household level

- Cost calculation for individuals and households

# Methodological approach

## Vulnerability definitions:

„The degree to which a person, system, or unit (such as a human group or place) is likely to experience harm due to exposure to perturbations or **stresses**“ (Kasperson et al. 2006)

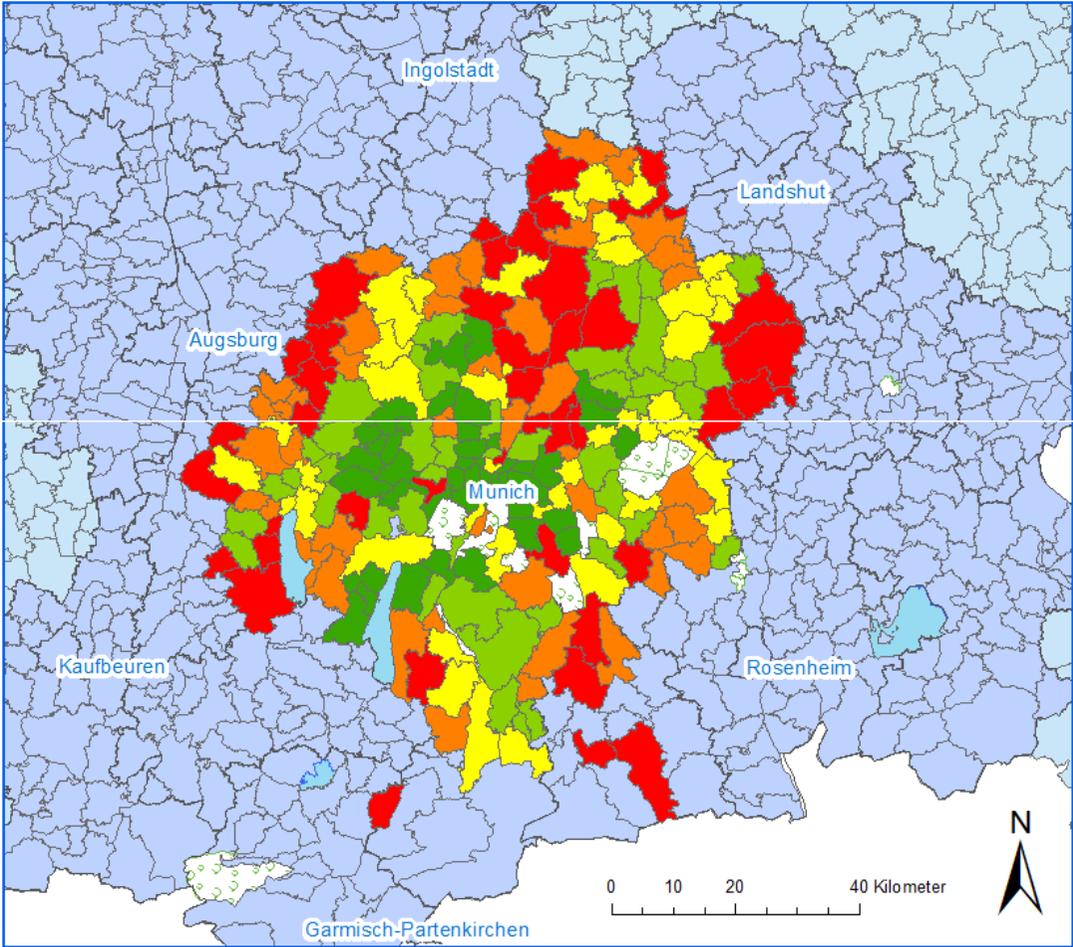
- „The ability or inability of individuals or social groupings to respond to, in the sense of cope with, recover from or adapt to, any external **stress** placed on their livelihoods and well-being“ (Kelly and Adger 2000)

# Three dimensions of vulnerability

- **Exposure** is the contact between system and stress
- **Sensitivity** is the degree to which sth./so. is affected by exposure to stress
- **Resilience** is the ability of sth./so. to absorb stresses wo. changes in its fundamental structure or function

(Kaspersons et al. 2006)

# Exposure: VKT per capita



Stress tests for a sustainable mobility

Exposure:  
Vehicle-km per capita

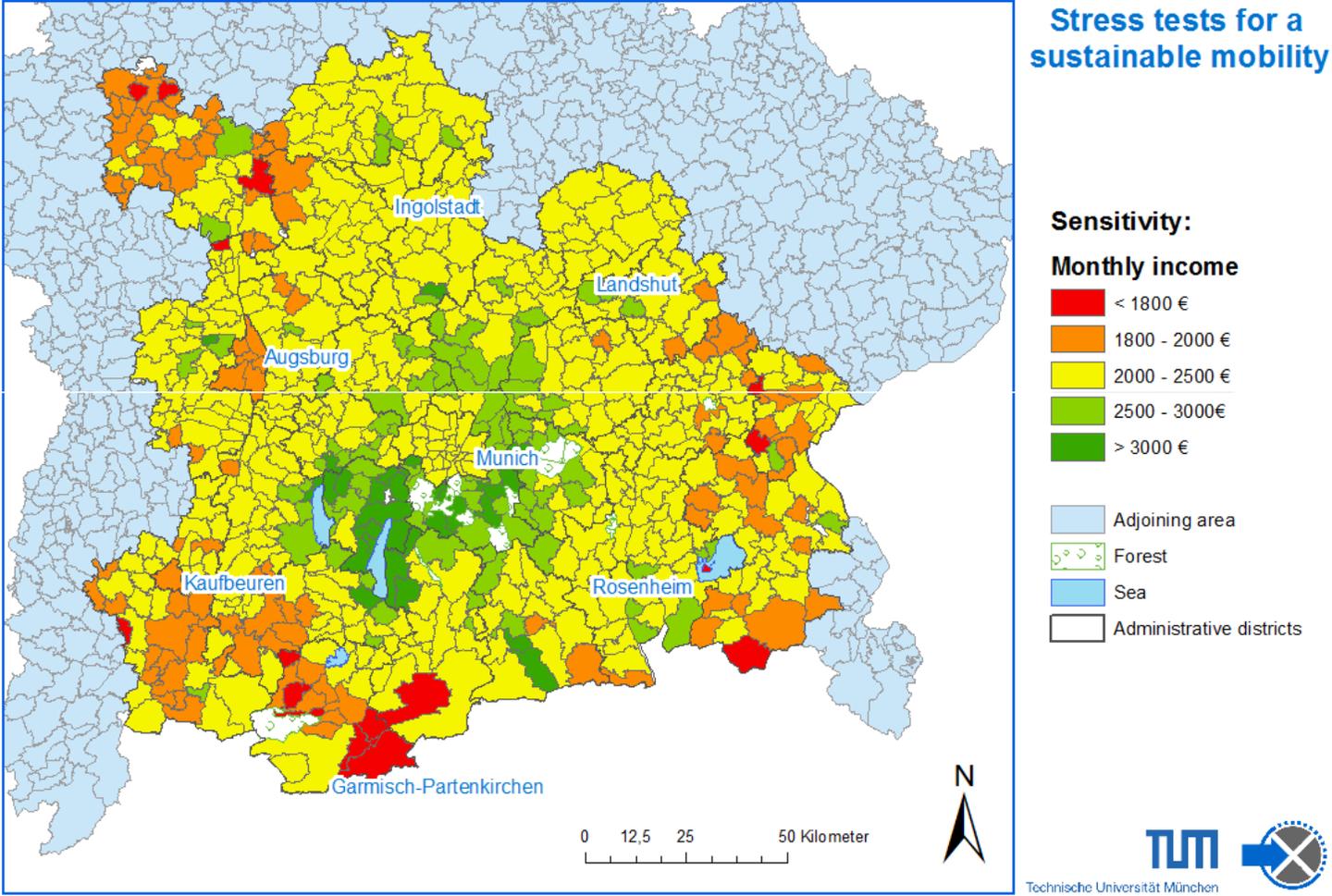
- < 32 km
- 32 - 38 km
- 38 - 42 km
- 42 - 50 km
- > 50 km

- EMM
- Adjoining area
- Forest
- Sea
- Administrative districts

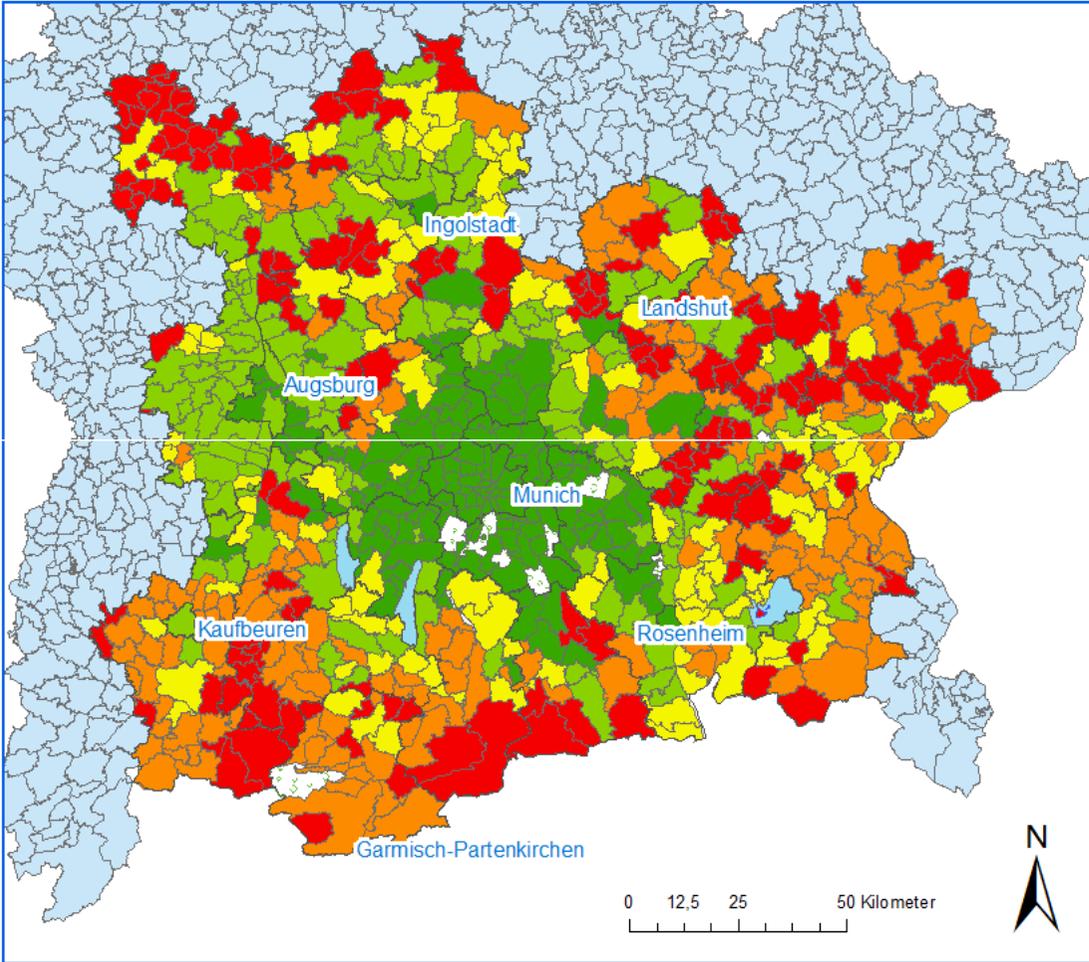


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# Sensitivity: Monthly Income EMM



# Resilience



## Stress tests for a sustainable mobility

**Resilience:**  
**Accessibility by PT**  
**Jobs within 1h**

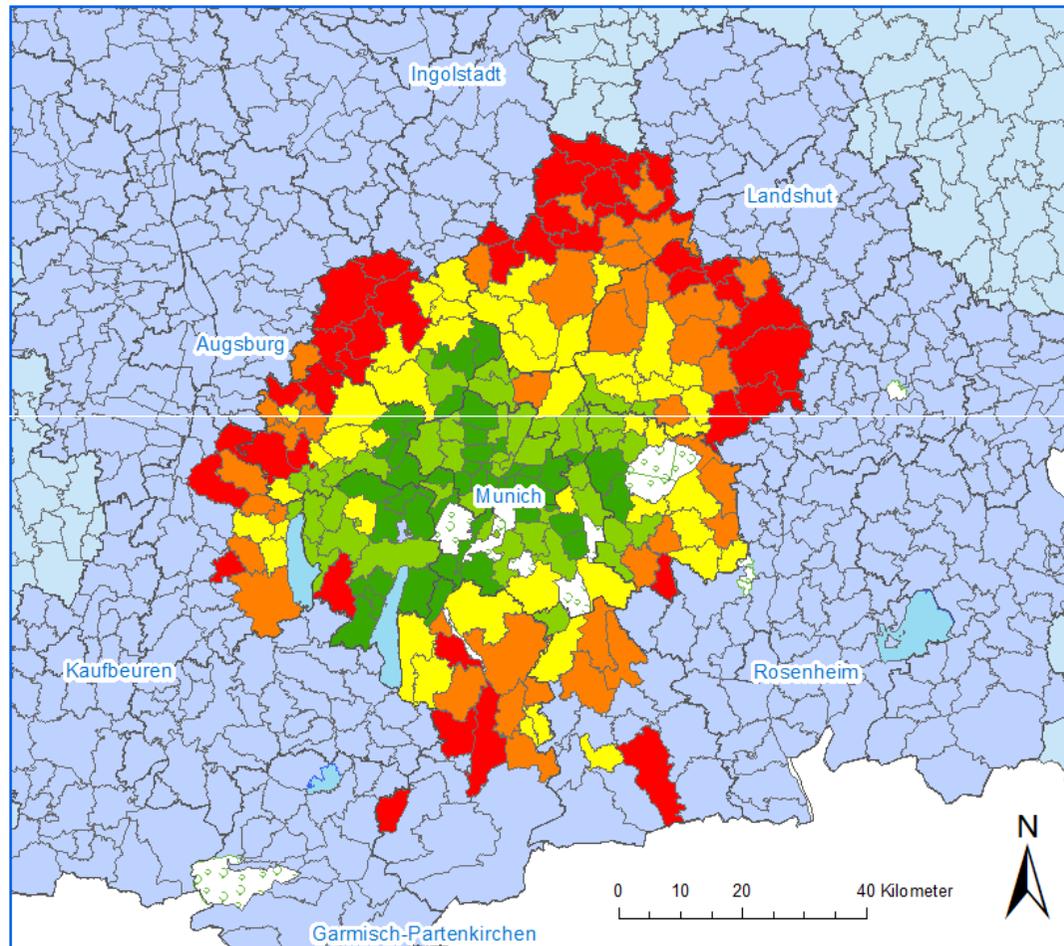
- < 20000
- 20001 - 50000
- 50001 - 100000
- 100000 - 300000
- > 300000

- Adjoining area
- Forest
- Sea
- Administrative districts



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# Vulnerability



Stress tests for a sustainable mobility

### Vulnerability

- very low
- low
- medium
- high
- very high

- EMM
- Adjoining area
- Forest
- Sea
- Administrative districts



# Households and Storylines (e.g. suburban)

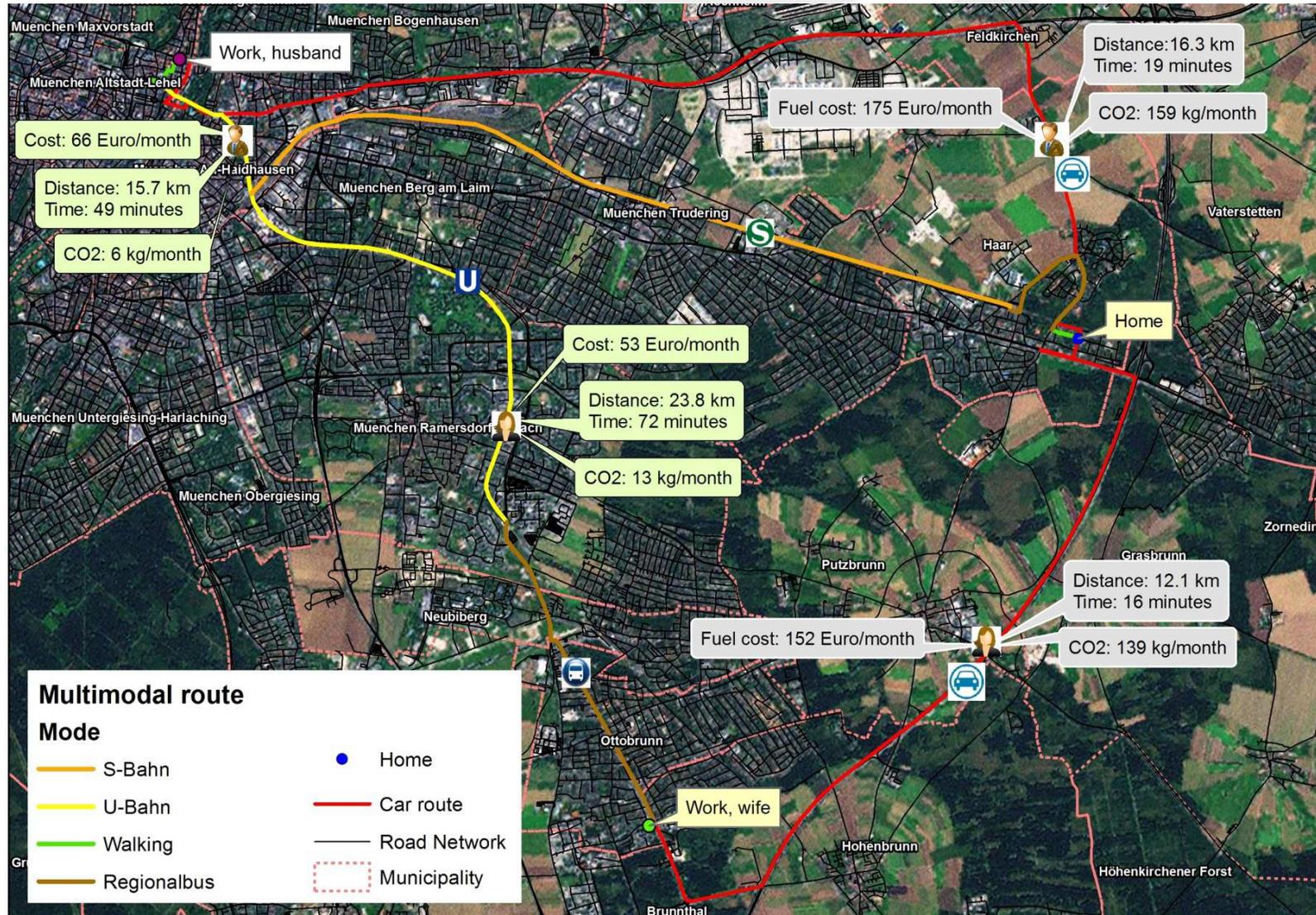
Person	Age	Regular Activity	Short-periodic Activity	Long-periodic Activity
Husband	39	Job (full time)	Bowling	Barber
Wife	35	Job (full time)	Shopping for daily goods	Yoga
Son	9	School	Football	Doctor
Daughter	4	Kindergarten	Doctor	Birthday parties

All activities have to be georeferenced

# Haar

Work:  
5 days/week

Households	Exposure	Sensitivity	Resilience	Vulnerability
Category 2	High ↑	High ↑	High ↑	Medium →



# Conclusion

- Taking residential as well as mobility costs into account for a sustainable development of urban and transport structure
- Testing the vulnerability on a regional and on an individual level
- By means of shock scenarios guidelines and strategies for future planning will be developed
- MOR€CO tool kit in combination with stress testing the study regions will lead to a more sustainable way of transport and spatial planning

# Outlook

## Next steps

- Finishing the analysis phase (June 2012)
- Developing first drafts of the tools (October 2012)
- Implementing them in the Pilot Sites (2013)

*For further information see <http://www.moreco-project.eu/>*

Thank you very much for your attention

# Conditions in the alpine space region



**more€CO**  
mobility and residential costs

Factsheet



Alpine  
SPACE  
COOPERATION

## City of Munich and Munich Transport and Tariff Association Area\*

**Inhabitants<sup>[1]</sup>**

	Munich City	Rest of Region	Munich Region
2010	1.353.186	1.333.594	2.686.780

**Development Trend<sup>[2]</sup> growing population**

Munich City	
2030	1.509.900

**Area of Pilot Site<sup>[3]</sup>**

Munich City	Rest of Region	Total
310 km <sup>2</sup>	5.160 km <sup>2</sup>	5.470 km <sup>2</sup>

**Structure<sup>[4]</sup>**

> 1.000.000 inhabitants	1 municipality
municipalities in total	175
counties in total	13

**Location in the Alpine Space Region**

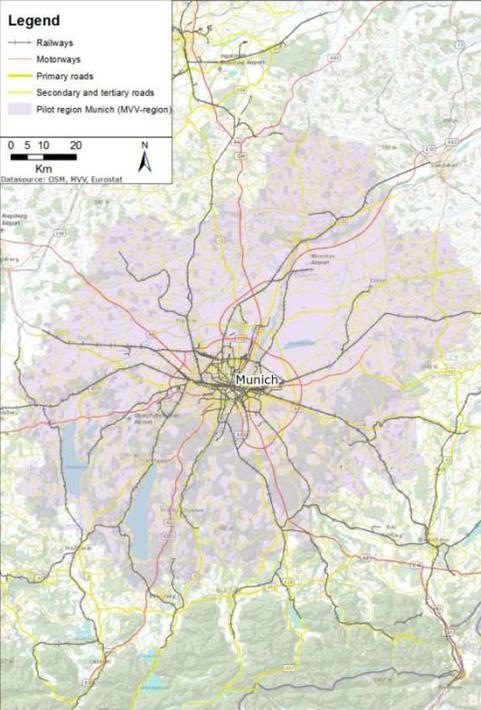


Source: www.alpine-space.eu

**Legend**

- Railways
- Motorways
- Primary roads
- Secondary and tertiary roads
- Pilot region Munich (MVV-region)

0 5 10 20  
Km  
Data source: cc: OSM, MVV, Eurostat

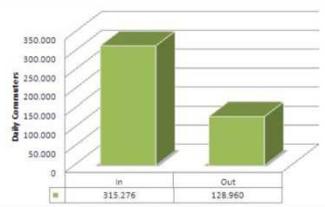


\*slightly different from Munich Region (Munich Region = Planungsregion München)

**Number of workers by place of work<sup>[5]</sup>**

Year	Munich City	Rest of Region	Munich Region
2009	690.111	445.433	1.135.544

**Commuting<sup>[6]</sup>**



**Traffic Key Data<sup>[7]</sup>**  
Journeys in the year 2008 given in percentages

	Car	Public Transport	Bike	Walking
Munich City	37,0 %	21,0 %	14,0 %	28,0 %
Munich Region	47,0 %	15,0 %	13,0 %	25,0 %

**Real Estate<sup>[8]</sup>**

Munich City	
Rent (€/m <sup>2</sup> )	9,03 - 17,08
Property (€/m <sup>2</sup> )	2.540 - 8.135

Trend: prices are heavily increasing

**Main Challenges**

- rising prices in real estate
- public transportation network is still strongly focused on the city center of Munich

**Main Potentials**

- high number of people making their daily ways by bike or foot
- dense network of the different transportation means within Munich region
- good public transportation network

[www.moreco-project.eu](http://www.moreco-project.eu)

[1] Bayerisches Landesamt für Statistik und Datenverarbeitung (Hauptwohnsitz) ; [2] https://www.statistik.bayern.de/statistik/bytz/REGION14.pdf [3] and [4] http://www.mvv-muenchen.de/de/der-mvv/mvv-in-zahlen/index.htm#2215; [5] https://www.statistik.bayern.de/statistik/kommunales/02\_02.pdf [6] = nur sozialversicherungspflichtig Beschäftigte, Bundesagentur für Arbeit; [7] http://www.muenchen.de/mehd/ahnr/\_der/der/mh/raus/pam/saaten/waerung/verkehrspendung/pdf/020204ue\_MD\_P01.pdf; [8] http://www.wohnungsboerse.net/immobilienpreise-Muenchen/2081\_und

# Conditions in the alpine space region



**more€CO**  
mobility and residential costs

Factsheet



Alpine SPACE  
THE PROJECT IS CO-FUNDING BY THE EUROPEAN REGIONAL DEVELOPMENT FUND  
INVESTING IN YOUR FUTURE

## Val Belluna and Val Boite e Centro Cadore

**Inhabitants<sup>[1]</sup>**

	Val Belluna	Val Boite e Centro Cadore	Total
2010	155.107	25.446	180.553

**Development Trend<sup>[2]</sup> *shrinking population***

	Val Belluna	Val Boite e Centro Cadore	Total
2029	150.165	23.537	173.702

**Area of Pilot Sites<sup>[3]</sup>**

	Val Belluna	Val Boite e Centro Cadore	Total
	1.628km <sup>2</sup>	826km <sup>2</sup>	2.454km <sup>2</sup>

**Structure<sup>[4]</sup>**

> 15.000 inhabitants	2 municipalities
5.000 – 15.000 inhabitants	6 municipalities
< 5000 inhabitants	38 municipalities

**Location in the Alpine Space Region**

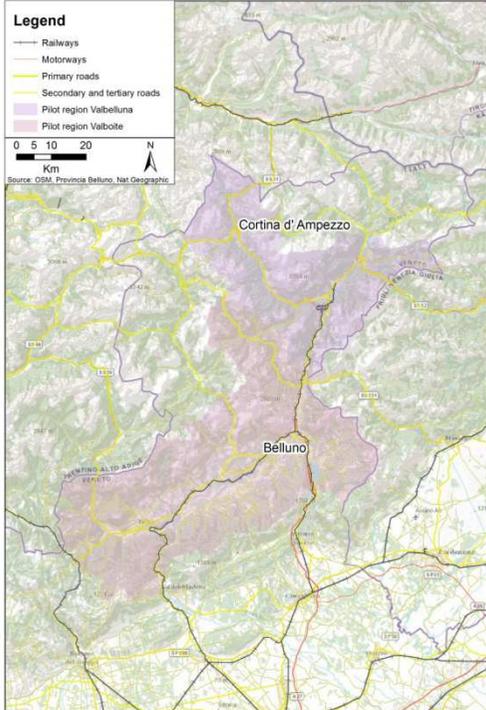


Source: www.alpine-space.eu

**Legend**

- Railways
- Motorways
- Primary roads
- Secondary and tertiary roads
- Pilot region Valbelluna
- Pilot region Valboite

0 5 10 20  
Km  
Source: OSM, Province Belluno, Nat Geographic

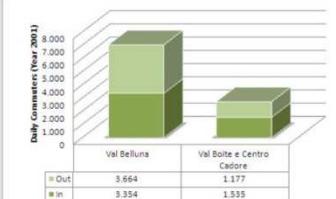


Cortina d'Ampezzo  
Belluno

**Number of workers by place of work<sup>[5]</sup>**

Year	Val Belluna	Val Boite e Centro Cadore	Total
1991	52.240	13.868	66.108
2001	59.703	11.816	71.519

**Commuting<sup>[6]</sup>**



	Val Belluna	Val Boite e Centro Cadore
Out	3.664	1.177
In	3.354	1.555

**Traffic Key Data<sup>[7]</sup>**  
Journeys in the area given in percentages

	Car	Public Transport	Bike	Walking
Val Belluna	69,2 %	16,6 %	2,8 %	11,4 %
Val Boite e Centro Cadore	60,7 %	14,9 %	0,4 %	24,0 %

**Real Estate<sup>[8]</sup>**

	Val Belluna	Val Boite e Centro Cadore	Range
Rent (€/m <sup>2</sup> )	2 - 7,5	2,5 - 26	2 - 26
Property (€/m <sup>2</sup> )	700 - 1.600	800 - 10.700	700 - 10.700

**Main Challenges**

- Accessibility issue isn't faced in overall and strategical methodology
  - Low public rail transport quality
- development of high-added value services and industrial sectors

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**Main Potentials**

- Settlements framework distributed on well-defined, hierarchically structured axes;
  - Settlements distribution along few axes;
- Parts of the Pilot Sites have good connection to the highway network

[1]1971-2001 ISTAT (National Institute of Statistics) census data; 2010 Municipalities registry offices (published on ISTAT web site - www.demco.istat.it); [2]Province of Belluno - Office of Statistics; [3]Province of Belluno - Piano Territoriale di Coordinamento Provinciale (Provincial Coordination Country Plan); [4]2010 Municipalities registry offices (published on ISTAT web site - www.demco.istat.it); [5]1991-2001 ISTAT census data; [6]2001 ISTAT census data - school and work commuting only; [7]2001 ISTAT census data - school and work commuting only; [8]2010 Agenzia del territorio - OMI.