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## ANLAGE/ANNEXE/ALLEGATO/PRILOGA

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# DEMOGRAPHIC CHANGES IN THE ALPS

## REPORT ON THE STATE OF THE ALPS

## ALPINE CONVENTION

## Alpine Signals – Special Edition 5

*Final report - Advanced draft*

THE ALPINE CONVENTION IS THE FIRST INTERNATIONAL TREATY FOR THE PROTECTION AND PROMOTION OF THE SUSTAINABLE DEVELOPMENT OF A CROSS-BORDER MOUNTAINOUS REGION

italian presidency 2013-2014
alpine convention

MINISTERO DELL'AMBIENTE
E DELLA TUTELA DEL TERRITORIO E DEL MARE

The present report has been approved by the Alpine Conference through its XIII meeting in Turin, on November 21st 2014.

The preparation of this report has been coordinated by the Italian Presidency of the ad-hoc Working Group in coordination with the Permanent Secretariat of the Alpine Convention.

The text was drafted by the Italian Presidency of the ad-hoc expert group and its members, with the cooperation of the Permanent Secretariat.

The report includes different "thematic analyses", in-depth analyses reported on yellow background; the authors of these analysis are reported directly in the text.

Different European Territorial Cooperation Projects have been involved during the preparation of the text and the collection of good practices; contributors from the ETC Projects are listed below.

The preparation of the maps was done by Eurac Research, thanks to the Institute for Regional Development and Location Management.

This report starts from the basis of the preliminary assessment elaborated by the Working Group Demography and Employment.

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# Table of contents

# 1. Introduction

The Alpine Convention is an international treaty between the Alpine countries (Austria, France, Germany, Italy, Liechtenstein, Monaco, Slovenia and Switzerland) and the EU, aimed at promoting sustainable development in the Alpine area and at protecting the needs of the people living within it. It embraces the environmental, social, economic and cultural dimensions.

The Alps**,** with their biodiversity capital, water and wood reserves, are the natural, cultural, living and economic environment for nearly 14 million people and an attractive tourist destination for approximately 120 million guests every year.

## 1.1 The role of demography in the Alps and the contribution of the Alpine Convention

The Alps represent an example of human-shaped environment, whose characteristics are worldwide famous and appreciated. Their landscape was shaped by centuries of diffused human presence and the related social, cultural and economic production. In the past, each alpine valley with acceptable climatic conditions was, inhabited and taken care of, with the aim of keeping the living and working environment safe and productive. Nevertheless, in the XX century, wide areas of the Alps experienced a severe depopulation trend, which resulted in an increased difficulty in providing basic services to the local population, thus posing at risk their living standards. A persistent exacerbation of this negative trend, if prolonged in time, can trigger negative cycles not only for the resident population, but also for other issues, such as tourism and hydro-geological safety. Therefore, in order to maintain the specific alpine characteristics, the presence of local population in the Alps needs to be safeguarded and preserved. At the same time, in order to preserve their attractiveness not only for tourists, the alpine areas should provide jobs, services and social cohesion.

Socio-economic and cultural aspects are considered central by the Alpine States for the implementation of an integrated policy ensuring the protection and sustainable development of the Alps. The importance of this topic for the State parties is reflected in the Declaration on Population and Culture of the Alpine Convention (Alpine Convention, 2006). This Ministerial Declaration considers the Alps as a living and economic territory, in which the inhabitants should benefit of a wide access to services such as transport system, health and education. The Alpine population, furthermore, should have the opportunity to work in the Alpine territory, thus strengthening local value chains and aiming at creating a social and environmental – friendly regional development (see also the Box "The Declaration on Population and Culture of the Alpine Convention").

The establishment of the politic, economic and infrastructural conditions that allow the Alpine territory to be competitive, attractive and sustainable in the XXI century need to start from an exhaustive picture of the Alpine population and an analysis of its characteristics and movements. This is why "demographic change" is one of the five thematic pillars of the Multiannual Work Programme 2010-2016 of the Alpine Convention (Alpine Convention, 2011). In order to tackle this issue, an hoc expert group was established by the Alpine Ministers at the XII Conference of the Parties in 2012 with a mandate to prepare the fifth Report on the State of the Alps focusing on demographic changes and their driving forces.

The expert group continued the work started by the Working Group Demography and Employment set up by the X Alpine Conference in 2009, which prepared a first overview on demographic framework of the Alps. This overview served as the starting point for the work of the ad hoc expert group and provided a basis for more specific research studies and activities. For the preparation of the Fifth Report on the State of the Alps,

good practices dealing with demographic changes and their impacts on labour market and service provision were also collected in order to provide examples in these fields to policy-makers.

This ad hoc expert working group which drafted this report this report includes representatives from the Contracting Parties and Observers, experts in these fields of science, and other stakeholders.

## 1.2 Aims of the Report

This report addresses the following questions: how is it possible, to deal with the demographic phenomena in the Alps? How is it possible to influence the demographic changes in order to keep the Alpine areas inhabited?

The first step to answer in the practice to these questions is the creation of a common framework of knowledge, with comparable data and common considerations, including a set of good practices dealing with demographic changes, their causes and their consequences. In this sense, the main objective of the ad hoc expert group on demographic change (and its drivers) established by the Alpine Convention was to prepare the fifth Report on the State of the Alps, by the XIII Alpine Conference (the 13th Conference of the Parties, held in Turin in 2014).

The main aims of this Report are to:

- cast light on and analyse the changes in the population dimension, distribution, structure;
- observe labour market dynamics and their connections with demographic changes;
- consider the roles of different levels of education and training and their effects on society;
- recognise the strengths and weaknesses in the various areas and chart them;
- focus on some thematic analyses that cover peculiar aspects observed in particular areas (such as the urbanization in the Alpine area or "new mountain inhabitants");
- collect good practices, selected on the basis of specific criteria;
- provide guidance to policy-makers regarding the use of best practices and their transferability.

In order to focus on all the topics here above listed, the report is structured in three main chapters:

- Chapter 2 - Demographic overview. This chapter focuses on the analysis of the status quo of the population in the alpine area, on the structure of this population (mainly according to gender, age and origin of the population) and on the dynamics that affected population growth or decrease in the last 10 years.
- Chapter 3 – Employment and education. This chapter aims at describing the structure of the alpine labour market through an analysis of the activity, employment and unemployment rates. Moreover, the chapter includes a description of the level of education of the alpine population.
- Chapter 4 - Some applications on demographic and labour market data. In this chapter two statistical methods have been applied.
- Chapter 5 – Population and services. This chapter describes the status quo of specific welfare services that can foster the maintenance of the population on the territory. In particular, the chapter describes the status of health care facilities and infancy day care services at alpine level.

Moreover, the report contains six in – depth thematic analyses on the following themes:

- An analysis of the changes in the geography of migration and the new orientation of integration processes (Chapter 2).
- A study on immigration to and emigration from the Alps with respect to the "new highlanders" (Chapter 2).
- An analysis on the social features of the Italian Alpine region as a mosaic of local economies (Chapter 3).
- An in depth focus on the use of European studies to investigate the alpine situation (Chapter 3).
- A focus on hospitals in the Alpine area (Chapter 4).
- An analysis of the public transport system in the South Tyrol region with a focus on mobility and accessibility (Chapter 4).

## 1.3 Geographical level of analysis

The availability of data at a suitable territorial level is one of the main challenges when aiming at comparing demographic, labour market and education dynamics at alpine level. In order to be able to account for detailed differences and developments, the level of geographical detail selected for the report is LAU 2, namely the municipal level. Data concerning demography were therefore collected at this geographical level of detail and, together with a series of demographic indicators, they are represented in several maps throughout the report. Concerning education and labour market indicators, the data availability was not homogeneous at alpine level: for Germany and Switzerland the highest level of detail displayable is the NUTS 3 level[1]. Therefore, for employment and education, the data for Switzerland and Germany have been mapped separately from the other countries, where the data are available at LAU 2 level.

*Note for the reader:* in order to increase readability and to foster the simplification of the text, the indicators elaborated are fully described in Appendix 1 at the end of the report and not in the report text itself.

[1] For Germany, this level corresponds to the districts (*Landkreise*) and the urban districts (*Kreisfreie Städte*). For Switzerland, this level corresponds to the Cantons.

**Box | The Declaration on Population and Culture of the Alpine Convention**

Although demography is not the object of a specific protocol, of the Ministers of the parties to the Alpine Convention have tackled this issue in the declaration "Population and culture", which has been adopted in November 2006.

Within this declaration, the Alpine Convention recognises the socio-economic and cultural aspects of the Alpine area as essential in order to develop an integrated policy for sustainable development in the Alps. Based on the awareness towards the impacts that demographic change can have on the living and working conditions in the Alps, and in order to give the Alpine population the right to permanently live in the Alpine area and to engage in economic activities, the Declaration on Population and Culture highlights a series of principles related to five main topics: community awareness and cooperation, cultural diversity, living environment, quality of life and equal opportunity, economic area and the role of urban and rural areas.

Regarding *Community awareness and cooperation*, the declaration affirms the co-responsibility between Alpine and non-Alpine populations for the maintenance of the Alpine unique culture. Accordingly, the declaration emphasises the principle of facilitation of cooperation among the various linguistic groups and among Alpine and non-Alpine inhabitants.

The topic of *Cultural diversity* is tackled by the Declaration on Population and Culture through several principles, mainly affirming the priority of research, maintenance and development of the material and immaterial cultural heritage, the promotion of linguistic diversity and the support of the artistic expression of Alpine themes.

Several principles are encompassed under the umbrella topic *Living environment*, quality of life and equal opportunity: first of all the principle of maintenance and modernisation of the existing settlements, implemented accordingly to the specific characteristics of each site. The principles then emphasise the importance of maintaining and developing decentralised services regarding primary health care and education also in remote areas. This is also valid for leisure activities and cultural programmes, whose importance is emphasised not only for tourists, but also for local residents. Finally, the principle of facilitation of access of the Alpine population to advanced communication technology is underlined.

Regarding the *Economic area*, the declaration on Population and Culture foresees principles that focus on the implementation of policies which could foster regional development through the use of potential linked to the territory, on the strengthening of local value chains and on the development of measures aiming at guaranteeing attractive jobs in the Alps.

Finally, the last topic *Role of urban and rural areas* encompasses principles that, on the one hand, emphasise the role of the Alpine cities as centres of social, cultural and economic activities. On the other hand, the role of rural Alpine areas is recognised on the basis of their heterogeneous economic, natural and cultural functions. The principle of building and strengthening relationships between the different typologies of Alpine areas and between Alpine and non-Alpine areas is then emphasised.

# 2. Demographic overview

The demographic changes which occurred and still are occurring in the whole Alpine Countries are also reflected in the territory of Alpine municipalities, but unevenly and with different signs depending on the different territories. All in all, the resident population as a whole has increased with a mostly increased incidence of the foreign population (often in combination with negative natural changes). In some areas, however, these processes were not enough to slow down the aging of the population and the declining of the population of working age. In other areas, instead a high birth rate and the inflows of foreigners may be the basis of the relatively young population that resides therein. All these aspects have resulted in a complex mosaic, where certainly the main axes of communication and the attractiveness of the tourist sites have constituted a factor in the attraction and acceleration of the phenomena.

## 2.1 Resident population and population density

As of 2013, the Alps were inhabited by 14,512,528 people on a 190,854.6 km$^2$ territory, with an average population density of 76.04 inhabitants per km$^2$, (Table 1). This makes the Alps one of the less populated areas in central Europe (although Countries such as Greece and Ireland have similar population densities) but also one of the most dense mountain areas worldwide (Alpine Convention, 2007). The countries that most contribute in terms of percentage to the overall alpine population are Italy (30.1%) and Austria (22.9%). France contributes to the alpine population up to 18.5%, followed by Switzerland (13.3%), Germany (10.2%) and Slovenia (4.6%). Monaco and Liechtenstein, being also in terms of surface by far the smaller alpine countries, contribute with percentages below 1%. Table 1 displays the contribution in terms of surface and population of each Alpine country.

| | *Alpine inhabitants* | *Surface (km$^2$) of the Alpine area* | *Alpine pop. density* | *National population density* |
|---|---|---|---|---|
| Austria | 3,320,719 | 54,759 | 60.6 | 102.3 |
| France | 2,683,801 | 40,801 | 65.8 | 103.4 |
| Germany | 1,476,519 | 11,160 | 132.3 | 225,5.4 |
| Italy | 4,364,538 | 51,995 | 83.9 | 201.8 |
| Liechtenstein | 36,838 | 160 | 229.6 | 230.2 |
| Monaco | 36,950 | 2 | 16,010 | 18,475 |
| Slovenia | 663,739 | 6,766.6 | 98.1 | 101.6 |
| Switzerland | 1,929,424 | 25,211 | 76.5 | 201 |
| **Alpine region** | **14,512,528** | **190,854.6** | **76.04** | - |

Table 1: Population, surface, and population density in the Alpine region. Data at January 1st, 2013, except for France (census data, year 2010) Sources: National statistical offices, year 2013, with the exception of France, whose data refer to the national census in 2010.

The population is spread on territories that have different size; therefore, in order to better assess the human pressure on a territory, the population density (namely the ratio between the population living in a territory

and the surface in terms of km² of the territory) can be used. While, on the one hand, a high level of population density can be associated to an higher pressure on the environment and therefore a possibility of degradation of the environment itself, on the other hand, in the alpine area, where orographic constrains limit the presence of permanent population in a wide part of the territory, a certain level of population density may be connected to the persistence of the population in the territory and therefore can represent a guarantee of the continuity of its safeguard as well as the safeguard of its cultural heritage.

The analysis of population density in the Alpine territory by LAU-2 level (Figure 1) reveals that higher population concentrations in relation to the municipal surface can be mainly found in the peri-Alpine areas (e.g. in the flat areas of the Italian foothills, in the French Côte d'Azur and Haute-Savoie, along the Swiss Voralpen, in Oberbayern, in the surroundings of Vienna and in the Slovenian valleys host of the major transport corridors) and in the wider valley bottoms such as the ones of the rivers Adige, Rhone (Valais), Alpenrhein, Adda (lower Valtellina), Inn, Drava and upper Sava.

A particular case is represented by the Principality of Monaco, characterised by the highest population density in the world. In any case, from a demographic point of view, Monaco always represents a situation *sui generis* if compared with the rest of the Alps.

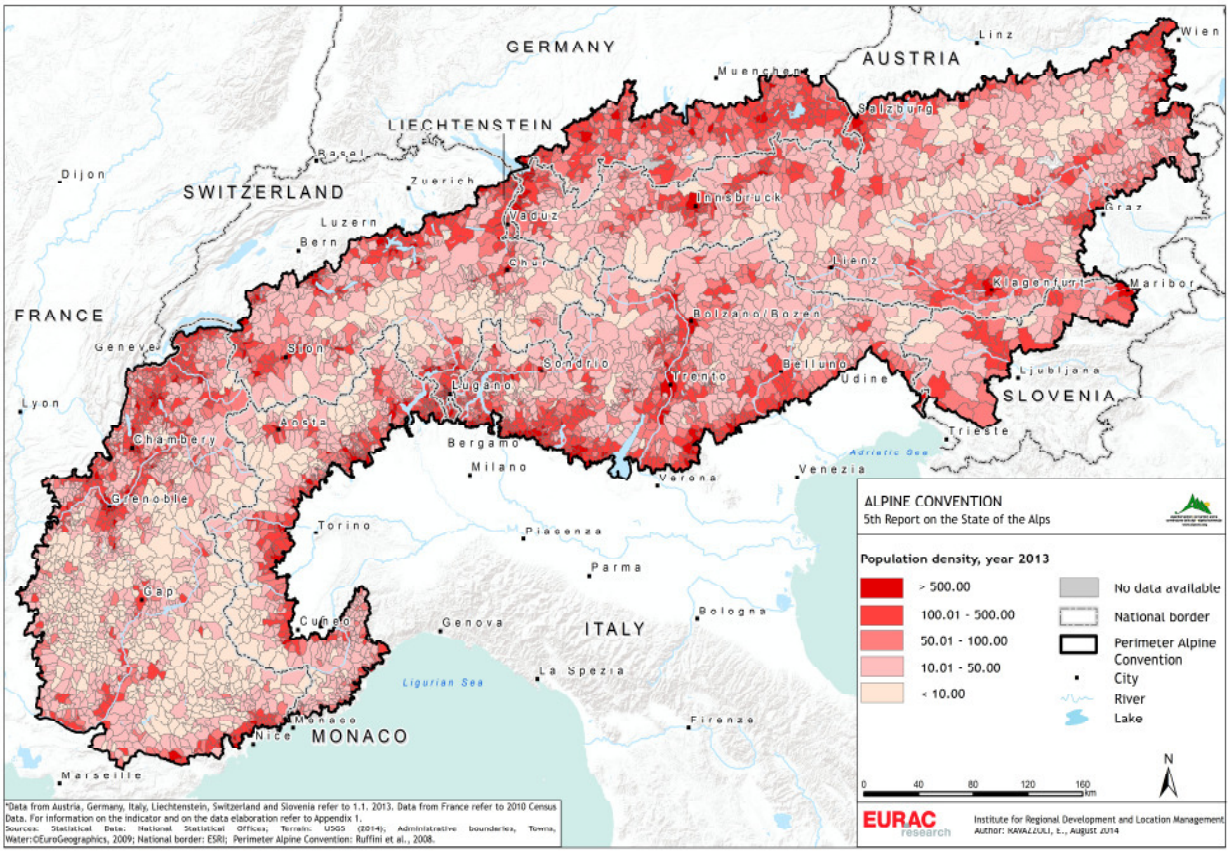


Figure 1: Population density (residents per km²).

In contrast to the ones located in the large intra-Alpine valleys and the peri-alpine areas, the majority of the municipalities with low population density are located in territories characterized by a low level of accessibility. These territories are, in particular, the ones close to the central mountain ridge and located farthest from the

metropolitan areas of the plains, especially in the Maritime, Provence, Cottian, Dauphiné, Lepontine, Western Raethian, Tauern, Carnic and Julian sectors of the Alps.

The data highlight that topography plays an important role in the distribution of human settlements. Independently from the municipal average density, population concentration appears to be higher in valley bottom areas as they allow easier settlement and offer more spaces for infrastructure, housing and productive activities. In fact, even in generally scarcely populated areas, the valley bottom areas are characterised by high population density levels. In these areas, the population density reaches values comparable to non – alpine regions, taking in account the area of permanent settlement of the population (see definition in Annex A).

This concentration of the population density valley bottoms is a recent tendency related to the last century: in the 1900s, when the Alpine economy was strongly based on un-mechanized agriculture, higher rates of population used to concentrate preferably on the south-oriented mountain slopes, being more sunny, warmer, and nearer to freshwater springs and to mountain pastures, as well as less exposed to flood hazards (Bätzing, 2005).

## NATIONAL CONTRIBUTIONS

### AUSTRIA

The Austrian National Contribution will be integrated in the REV1 version.

### FRANCE

The French Alps cover around 40,000 km², two NUTS2 areas (regions Rhône-Alpes and Provence-Alpes-Côte d'Azur), 7 NUTS3 areas (departements de Haute-Savoie, Savoie, Isère, Drôme, Hautes-Alpes, Alpes-de-Haute-Provence and Alpes Maritimes), and 1749 LAU2 areas (communes). In 2010, the French Alps had around 2,700,000 permanent residents – but, due to tourism presences, the population more than doubles during the winter and summer holidays.

Broadly speaking, three very different areas can be distinguished inside the French Alps:

- the central part of the territory, which is composed of thinly populated mountain areas (less than 10 inhabitants per km²), with a mainly touristic economy. Some of the deep valleys that traverse this area have a long industrial history (brought by the availability of hydraulic electrical power), but that activity is in sharp decline.
- the southern brim of the massif, where population density is higher because of commuting inhabitants who work in the large cities bordering the Mediterranean sea (e.g. Marseille, Toulon, Nice). Land pressure on the coast is very high, leading part of the population to move more and more inland, 30 to 50 km away from the city centers.
- the largest part of the population of the French Alps live in the northern part of the area, which is outside the high mountain areas and under the influence of four important cities: Grenoble (675,000 inhabitants in the large urban area and 157,000 in the city itself), Annecy (219,000), Chambery (216,000)and Geneva. Geneva is in Switzerland, but extends its urban area in France: around 300,000 people live in the French Geneva urban area, 60,000 of whom commute every day to work in Geneva center. This part of the French Alps is demographically and economically fast growing and it is densely populated; its population is younger, with high levels of education and high activity and employment rates. Industry still plays an important role in parts of the territory (mechanical engineering industry in the Arc valley, for example), but the tertiary activities dominate, both in the cities and their suburban surroundings: human services, construction works, business, research, etc.. The presence of Geneva and Grenoble (a major academic and technology-industry town, specializing in nanotechnology and electronic industry) favors the growth of the knowledge economy.

### GERMANY

The German Alps extend over a total of thirteen NUTS 3 administrative units, all located in the state of Bavaria: ten districts (Landkreise) and three urban districts (Kreisfreie Städte). Taking in account the smaller LAU2 units, excluding the urban districts, the German Alpine area encompasses 282 municipalities. All in all, the German area of the Alpine Convention counts 1,476,519 inhabitants (year 2012), which correspond to the 10.18% of the total population of the Alpine Convention. Moreover, the territory of the German Alps covers approximately 11,160 km² - c.a. the 6% of the overall Alpine Convention surface.

As for what concerns the differences in the population distribution according to the districts, the most populated German alpine district is Rosenheim, with 247,133 inhabitants, while Lindau (Bodensee) is the least populated (78,641 inhabitants). At municipal level, the German Alps present a smaller variability in terms of population values. A low incidence of very small and small municipalities below 1.000 inhabitants - which constitute the 5.26% of the total municipalities - and a high share (66.32%) of municipalities in a size range from 1.000 to 5.000 inhabitants can be observed. All in all, nearly 90% of the German Alpine municipalities count less than 10.000 inhabitants.

Taking into account the municipal level, the German alpine municipalities, as well as the districts, are in general more densely populated than the alpine average (approximately 75.5 inhabitants/km²). An analysis at LAU2 unit shows that, while nearly 38% of the German alpine municipalities are less densely populated than the average alpine ones, the majority of German alpine municipalities (62.42%) are more densely populated than the overall alpine average, while more than one third (36.53%) are more densely populated than the German alpine average (approximately 133 inhabitants/km²).

### ITALY

Spread all over the territory, with some concentrations (big numbers), the Italian alpine population shows a greater presence along the main roads and towards the valleys and the plain.

The Italian Alpine arc extends over a total of seven of the twenty Italian regions: Piemonte, Valle d'Aosta, Lombardia, Trentino-Alto Adige, Veneto, Friuli-Venezia Giulia, Liguria. Totally or partially covers twenty-four of the 110 provinces and 1,749 municipalities, corresponding to 21.6% of the 8,092 Italian municipalities existing at January 1st, 2013. The surface of the Italian Alpine area, measured considering the municipal boundaries, is equal to 52,041 square kilometers and represents 17.2% of the total area of the country (302,073 sq km).

In terms of population, at 1st January 2013 the residents in the Alpine municipalities amounted to 4,365 thousand, 7.3% of the total Italian resident population (59 million). Almost three-quarters of Alpine population reside in the municipalities of three NUTS-2 regions: Lombardia (29.6%), Trentino-Alto Adige (23.8%), Piemonte (20%).

At NUTS-3 level, the larger part of Alpine population is concentrated in the two Autonomous Provinces of Trento and Bolzano-Bozen (respectively 12.2% and 11.7%): they are two completely Alpine provinces, in the sense that 100% of the municipalities in the province are part of the Alpine Area. The municipalities of Trento (TN) and Bolzano-Bozen (BZ), respectively 115,540 and 103,891 inhabitants, are the two most populous communities in the Alps and the only two that exceed the threshold of 100,000 inhabitants. They are provincial capitals, as well as the municipality of Biella, which immediately follows in the ranking (43,675 inhabitants). The municipality of Bassano del Grappa (in province of Vicenza), with its 43,127 residents, is the fourth for amount of population. The larger part of the municipalities of the Alpine area is of medium, small or very small size: 90% of them show a population less than 10,000 inhabitants, 24% less than 500 inhabitants. The municipalities with the lowest number of residents are mostly common in Piedmont and Lombardy: i.e. the municipality of Pedesina (SO), Moncenisio and Ingria (TO), Morterone (CO), Briga Alta (CN), Menarola (SO) and Cervatto (VC), all have less than 50 inhabitants.

Overall in the Alpine area, as presumably, the population density is lower than in the rest of Italy. The number of inhabitants per km² in the Alpine area is approximately 84, while the national average is equal to more than double (198 inhabitants per km²). The maximum value at NUTS-2 level is observed for the alpine municipalities of Lombardia (132 inhabitants per km²), the minimum for the municipalities of Valle d'Aosta

(39.2) - where you have the widest non-liveable areas in Italy due to high altitudes and glaciers. It is observed a certain variability at NUTS-3 level: provinces with Alpine territory most densely populated are Gorizia (343 inhabitants per km²) and Varese (337); Imperia is the least densely populated (31 inhabitants per km²) followed by Aosta and Udine (39). Most of the municipalities (63.8%) show a population density of less than 100 inhabitants per km², 29.6% between 100 and 500, only 6.6% more than 500. Most densely populated Alpine municipalities are Fiera di Primiero (TN), Fiorano al Serio (BG) and Malgrate (CO), all with more than 2,000 inhabitants per sq. km. The town of Briga Alta (CN) is the one with the lowest population density (52 inhabitants per km²). In general, the municipalities with the highest population densities are concentrated along the lower outer perimeter of the Alps, at the foot of the mountains, along the main river dorsal and/or arterial roads, highways and railways (e.g., along the valley of Adige - and thus along the A22, in the low Valtellina, in the valley of Piave).

### SLOVENIA

In Slovenia, 62 municipalities are located in the Alpine Convention area (45 entirely and 17 partially). Geographically, this covers 6,766.6 km2, representing one third of the country (33.4%).

On January 1st 2013, Slovenia counted 2,058,821 people, of which 1,019,061 male (49.5%) and 1 039 760 female (50.5%). At alpine level, in early 2013, 663,739 residents lived in the Slovenian municipalities of the Alpine Convention; this accounts for 32,24% of the total resident population of Slovenia. At that time, the resident population consisted of 329,380 men and 334,359 women (50.4%). This figure is an overestimation, since it takes into account the total resident population in all municipalities, including those that are only partially located in the Alpine Convention area. The actual resident population of the Alpine Convention area is therefore significantly smaller because larger urban centres such as Maribor, Kranj, Nova Gorica and Postojna are located outside the Alpine Convention area.

It is worth noting that 284,071 residents live in the area of 45 municipalities located entirely in the Alpine Convention area, while 379,668 residents live in 17 municipalities that are only partially located in the Alpine Convention area.

| Year<br>1.1. 2013 | Total resident population (absolute values) | Women residents population (absolute values) | Women per 100 residents<br>% |
|---|---|---|---|
| Slovenia | 2,058,821 | 1,039,760 | 50.3 |
| Total AC Area | 663,739 | 334,359 | 50.4 |
| Whole LAU2 in AC area | 284,071 | 142,479 | 50.2 |
| Part of LAU2 in AC area | 379,668 | 191,880 | 50.5 |

Table 1: resident population in Slovenia, 2013Source: Statistical Office of the Republic of Slovenia

A demographic analysis at the settlement level would provide an insight into the actual number and structure of the resident population in the Alpine Convention area. According to the population and housing census of 2002, 365,614 residents, i.e. 18.6% of the total population of Slovenia, lived in 1193 settlements (in less than one fifth of all the settlements in Slovenia) in the Alpine Convention area.

Areas with the lowest and the highest population densities in Slovenia are located in the Alpine Convention area. Scattered and relatively sparse settlements are typical for Slovenia in general. In early 2013, there were,

on average, 101.6 residents living per square kilometer in Slovenia. Slovenia ranks in the middle among Member States of the European Union in terms of population density. The level of population density is the highest in the municipality of Ljubljana with more than 1000 residents per square kilometer. In the municipalities of the Alpine Convention, a somewhat lower level of population density was recorded than for Slovenia. In early 2013, there were 98.09 residents living per square kilometer in these areas.

Due to the natural conditions and historical development of settlements, differences in population density between municipalities in Slovenia are very large. In general, municipalities with big cities, highly populated municipalities with small areas located in the periphery of major employment centres, and especially municipalities in the valley and lowland areas are the most densely populated.

The same applies for the Alpine Convention area. Those municipalities that are located on the outskirts of the Alpine Convention area and those that are only partially located in the Alpine Convention area are more densely populated. The population density in this area ranges from 755.1 residents per km$^2$ in the municipality of Maribor to 368.0 residents per km$^2$ in the municipality of Kranj. High population density is also registered in municipalities that are mostly residential municipalities of nearby urban centres such as Šenčur (210.1 residents per km2) Hoče– Slivnica (208.4 residents per km$^2$) and Medvode (204 residents per km$^2$).

The most densely populated area in the Alpine Convention area is located within the traffic corridor Ljubljana - Kranj - Jesenice, which is also one of the most urbanized areas in Slovenia. There are 282.00 residents per km$^2$ living in the municipality of Jesenice, which is the most densely populated municipality located entirely in the Alpine Convention area, followed by the municipality of Radovljica with 159.00 residents per km$^2$, Škofja Loka with 156.00 residents per km2, Bled with 113.3, and Žirovnica with 99.4 residents per km$^2$. Higher population densities are also registered in municipalities located in other valley areas of the Alpine Convention area, in particular in the Meža Valley, the Savinja Valley, the Šalek Valley, and in the Sava River valley area. The registered population density in these municipalities ranges from 50 to 100 residents per km$^2$. Within this area, municipalities in the Meža Valley are particularly densely populated – the municipality of Ravne na Koroškem, which is the second most densely populated municipality located entirely in the Alpine Convention area (180.00 residents per km$^2$), followed by the municipalities of Mežica with 137.6 residents per km$^2$ and Prevalje with 117.3 residents per km$^2$. In accordance with the State's strategic development documents this area is located in the so-called third development axis (with the first two passing along the main traffic corridors of Koper-Ljubljana-Maribor and Jesenice-Kranj-Ljubljana-Novo mesto-Brežice). High population density in the Alpine Convention area is also registered in municipalities located in the gravitational area of Maribor such as Hoče-Slivnica (208.4 residents per km$^2$), Rače – Fram with 137.1 residents per km$^2$ and Ruše – 118.8 residents per km2.

On the other hand, municipalities that are considered most sparsely populated municipalities in Slovenia are also located in the Alpine Convention area. In 2013, 23 out of 62 municipalities in the Alpine Convention area, which is 37.1%, had less than 50 residents per square kilometre. All of these municipalities are located entirely in the Alpine Convention area. The most sparsely populated municipalities are located in hilly and mountainous areas in the Alpine Convention area. These areas include three municipalities that were considered the most sparsely populated municipalities in Slovenia in early 2013: the municipality of Solčava with 5 residents per square kilometre, the municipality of Bovec with 8.7 residents per km2 and Jezersko with 9.2 residents per km$^2$.

The population density of municipalities in the Alpine Convention area coincides with natural geographical conditions and trends in human settlement development. It is characterized by increasing urbanization of the valley areas and intensive suburbanization of the surrounding and predominantly rural municipalities, where the phenomenon of mixed urban-rural settlement structure is occurring. In contrast, the hilly and

mountainous areas are recording increased depopulation, together with a pronounced ageing of the population.

### SWITZERLAND

At LAU2 level (municipalities), the total number of Swiss municipalities located within the borders of the Alpine Convention perimeter has lowered from 856 to755 between 2008 and 2012, due to administrative mergers. Considering the surface of these alpine municipalities as a basis, it can be calculated that the overall Swiss area included in the Alpine Convention perimeter corresponds to 24,901 square kilometres and represents the 61% of the total Swiss area (41.285 km²).

As for what concerns the population, the total resident population in the Alpine Swiss municipalities amounts to 1,929,000 inhabitants. This represents the 24% of the total Swiss Resident population, which amounts to 8.03 million.

At NUTS3 (Cantonal) level, the Alpine population is distributed as follows: the most populated Cantons are Ticino and Valais, which, combined, contribute to more of 30% of the entire Alpine Swiss population. The Cantons Bern, Luzern, Graubünden contribute, each, to the 10% of the overall Alpine Swiss population. The remaining 40% of the population lives in the other ten Alpine Cantons.

The population is not homogeneously distributed on the territory and, therefore, different population density values (population/km²) can be observed both at cantonal and at municipal level. For the whole Switzerland, the average population density amounts to 201 residents per km²; this value is higher than the average population density in the Swiss Alpine areas (c.a. 77 residents/km²). Nevertheless, relevant differences in the levels of population density can be observed between Cantons: in the Cantons Graubünden, Uri, Glarus, Valais and Obwalden, which are in particularly characterised by high mountains and are fully included in the Alpine Convention Perimeter, the population density is lower than the Alpine area average. The Cantons only partly included in the Alpine perimeter show lower population density values in the portions of territory within the Alpine Convention compared with the overall cantonal values; this suggests that, for the partially Alpine Cantons, the population tends to concentrate outside the mountainous areas. One exception is the Canton Luzern, where a higher population density can be observed for the portion of territory located within the Alpine Convention. On a more detailed territorial level, the majority of the Alpine Swiss municipalities can be classified, on the basis of the resident population, as very small, small or medium: 96% of the 755 municipalities included in the perimeter of the Alpine Convention has, in fact, less than 10,000 inhabitants, and a relevant share (28.8%) has less than 500.

The biggest urban areas are constituted by the Cantonal capitals of Luzern in the homonymous Canton (79,478 inhabitants) and Lugano in the Canton Ticino (56.038 inhabitants). The highest amount of smaller municipalities with less than 100 inhabitants can be observed in the Cantons Graubünden, Ticino and Valais, with the smallest alpine Swiss municipality being Corippo in the Canton Ticino (12 inhabitants).

The Swiss Alpine municipalities are, in general, characterized by a low population density: more than the half of the municipalities (59.5%) show population density values below 100 residents per km², while 27% of the municipalities have a population density level between 100 and 500. Only 13.8% of the alpine Swiss municipalities have a population density of more than 500 inhabitants per km². These high – density municipalities are mostly located in the Cantons Ticino, St. Gallen, Luzern and Bern. At municipal level, the highest population density values can be observed for the municipality of Massagno in Canton Ticino (with a population density of 8,139 residents per km²), while the lowest can be found in the municipality of Mulegnes in the Canton Graubünden (0.8 residents per km²).

## 2.2. Population structure (gender, age, citizenship)

In order to analyse the structure of the Alpine population, four main indicators have been selected and calculated on a municipal basis: the percentage of women, number of foreign residents, the population aging index, the percentage of elderly population and the percentage of working-age population. A summarization of these indicators at alpine level, with a comparison of the data at national level is displayed in Table 2.

| | | *Women (per 100 residents)* | *Foreign resident population (per 1000 residents)* | *Elderly population (per 100 residents)* | *Ageing index* | *Working-age total resident population (per 100 residents)* |
|---|---|---|---|---|---|---|
| Austria | Alps | 51.2 | 96.7 | 18.7 | 129.3 | 66.8 |
| | National | 51.2 | 118.0 | 18.1 | 125.3 | 67.5 |
| France | Alps | 50.9 | 62.3 | 16.9 | 92.2 | 64.7 |
| | National | 51.6 | 62.4 | 17.6 | 96.4 | 63.9 |
| Germany | Alps | 51.1 | 72.5 | 21.4 | 155.1 | 64.7 |
| | National | 50.8 | 93.8 | 20.7 | 158.4 | 66.2 |
| Italy | Alps | 51.1 | 78.7 | 21.8 | 154.2 | 64.1 |
| | National | 51.6 | 73.5 | 21.2 | 151.4 | 64.8 |
| Liechtenstein | Alps | 50.5 | 335 | 14.9 | 96 | 69.6 |
| Monaco | National | 55.78 | 54 | 24.4 | - | 57.9 |
| Slovenia | Alps | 50.4 | 41.3 | 17.6 | 120.3 | 67.9 |
| | National | 50.5 | 44.4 | 17.1 | 118.1 | 68.4 |
| Switzerland | Alps | 50.5 | 203.6 | 17.1 | 128.3 | 67.2 |
| | National | 50.6 | 232 | 17.4 | 116.5 | 67.7 |
| **Alps** | | **51.0** | **94.7** | **19.5** | **129.8** | **65.5** |

Table 2: Main indicators of population structure, for the Alpine area and the whole national territory of the eight Alpine countries. Data at January 1st, 2013, except for France (census data, year 2010). Source: Eurostat database, for Monaco: Monaco Statistics (2013).

### 2.2.1 The distribution by gender

The distribution by gender[2] is in general linked not only with the population reproductive ability, but also with its structure by age and with the characteristics of the labour market. At Alpine level, the distribution of

[2] See annex A for a definition of the indicator.

the population by gender does not differ significantly from the national averages and is on the whole fairly balanced: in the Italian Alps, women represent 51.1% of the total population (51.6% on the whole national territory), in the Slovenian Alps they represent 50.4% (in comparison with the national average of 50.5%). In Liechtenstein women correspond to 50.5% of the population, while in France the Alpine values are quite similar to the national average, with 50.9% of women on the total population in the Alpine territory and 51,6% at national level. The same applies for the Swiss and German Alps, where values in line with the national averages can be observed. Some more detailed insights can be gained by the analysis of the municipal situation (Figure 2), which shows a homogeneous higher concentration of women in municipalities in the Eastern Alps, whereas the situation in the Western part is absolutely heterogeneous.

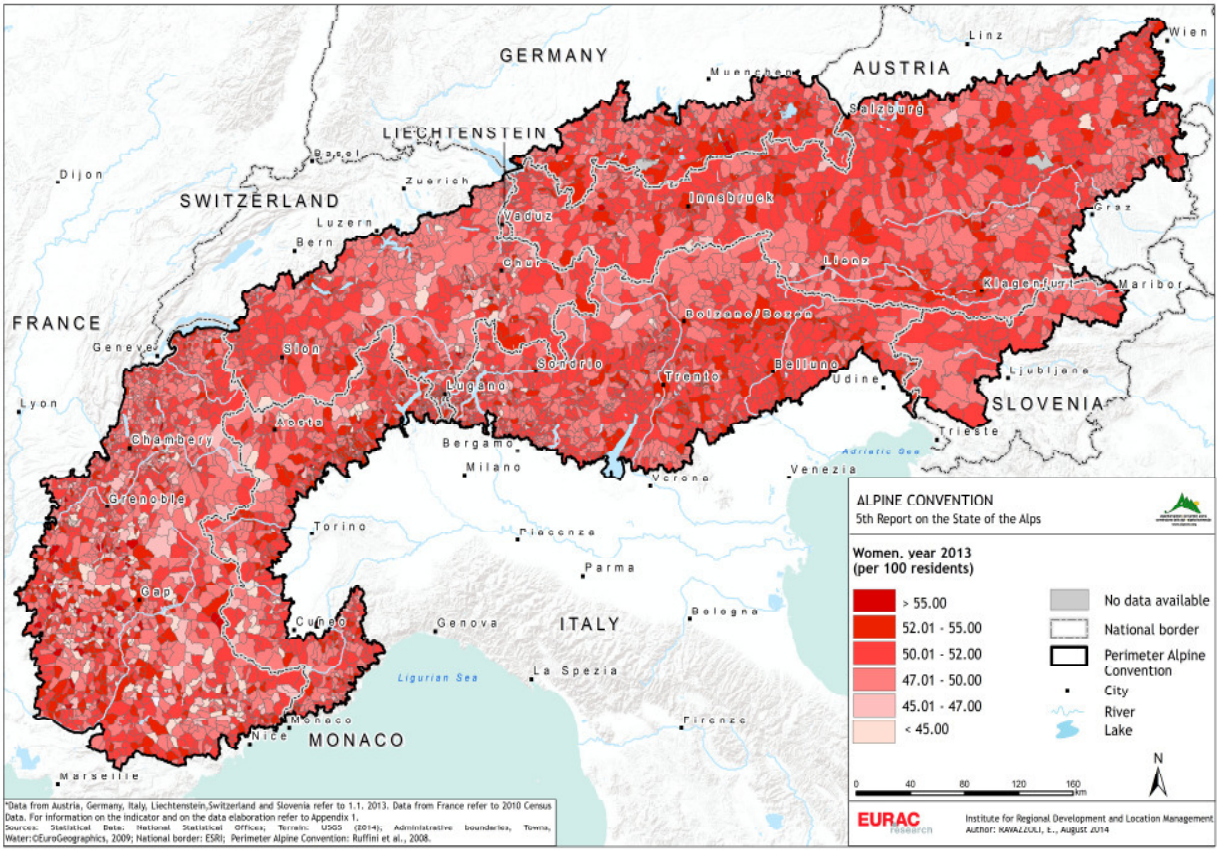


Figure 2: Women (per 100 residents).

The ratio of women on the total population can be explained through the link to other indicators, such as, for example, the crude birth rate (paragraph 2.4) and the percentage of elderly population (paragraph 2.2.2). In general, high values of the birth rate increase the percentage of male population (statistically, 106 males are born for every 100 females), whereas a particularly aged population is linked to an increase of the female ratio (women life expectancy is up to 5 years longer than male life expectancy). These indicators appear connected in particular in the Eastern Alps and only in few cases in the Central-Western Alps. For example, in the North-Eastern Austrian Alps, in Carnia and in the Dolomites high rates of women in combination with an older population exist (see also Figure 3), while in Alto Adige/Südtirol and in the central part of Tyrol low rates of women combined with moderately high birth rates can be observed. Finally, in the Western Alps, specifically in the Ossola Valley and in the surroundings of Biella and in the Langhe, there are high rates of women combined with an aged population. No particular evidence emerges from the Western Alps, where

the reduced size of several municipalities contributes to an increase of the general variability of the resulting indicators.

### 2.2.2 The distribution by age

Without being an exclusively Alpine trend, the resident population ageing is a phenomenon which also affects Alpine municipalities accordingly, although not in a homogeneous way. This is represented in Figure 3, which shows the percentage of population above 65 years on the total.

At alpine level, the highest elderly population rate is observed in Italian Alps, above all in Eastern area, with an incidence of the elderly population of 21.8%, compared, for example, with the 14.9% of Liechtenstein and 16.9% of French Alps. The comparison of the Alpine averages with the national ones results in a fragmented picture: while in Austria, Germany, Italy and Slovenia, the alpine population tends to be slightly older than the national, in France and Switzerland the opposite situation occurs.

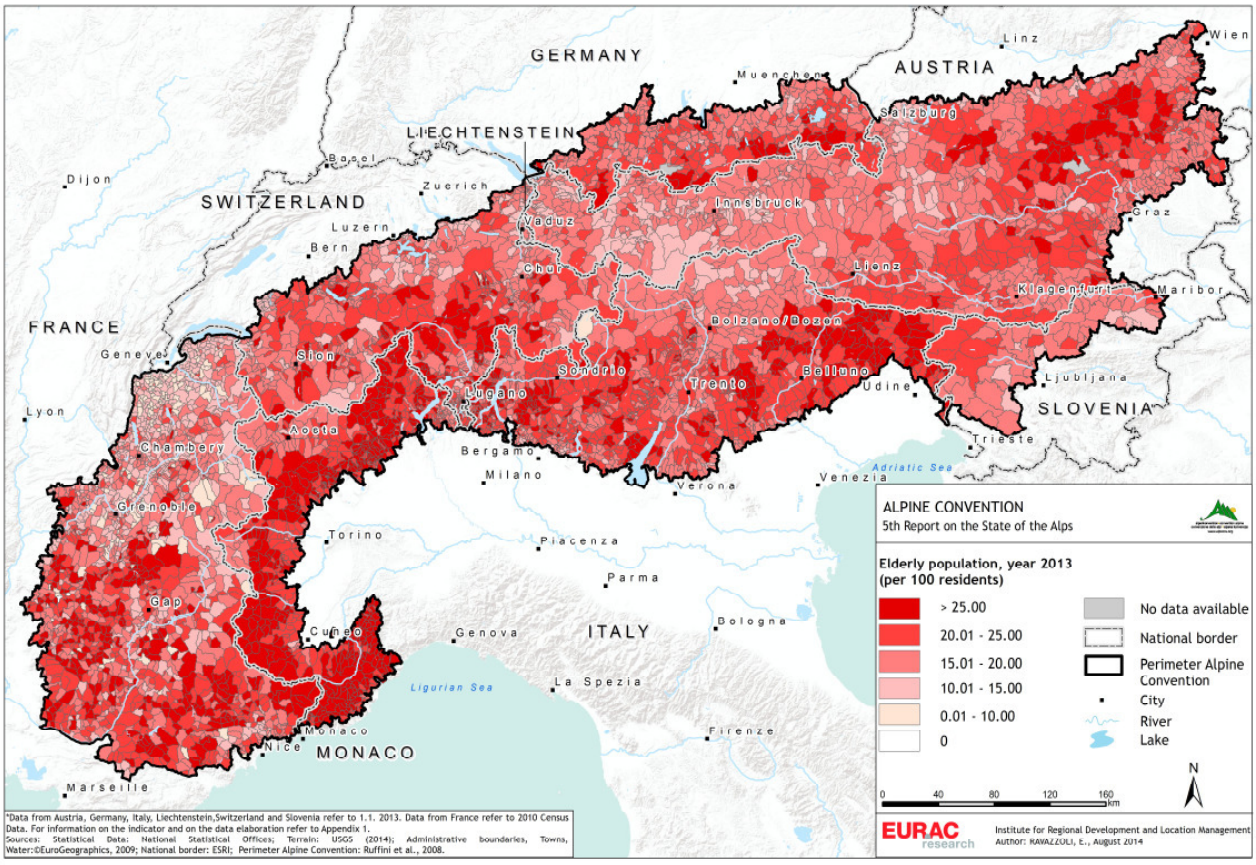


Figure 3: Elderly population (per 100 residents).

Another indicator, strictly connected to the percentage of elderly population, but actually different and able to add other important information to the phenomenon of the ageing of population is the total resident population aging index, namely the ratio between the inhabitants that are older than 65 and those younger than 15 (for the detailed definition, see Annex A). This indicator is able to give therefore an idea of the "substitution rate" in the population composition by age. Likewise, at alpine level, the highest aging population index value is registered in German Alps (155.1%) compared to the lowest in French Alps (92.2) (Table 2). Except for France and Germany, it can be observed that the values of each country for the Alpine

area are higher than the national averages (e. g. Swiss Alpine index is 128.3 while the national average is 116.5).

The percentage of population in working age, namely the population aged 15 to 64 is another important indicator, strictly related to labour market. Figure 4 shows the percentage of working-age total resident population, calculated for the last year available (normally 1st January 2013)[3] .The working age total resident population rate for Alpine area is 65.5%, with minimum in Italy (64.1%) and the maximum in Liechtenstein (69.6%). For almost all countries national averages are higher than Alpine national rates.

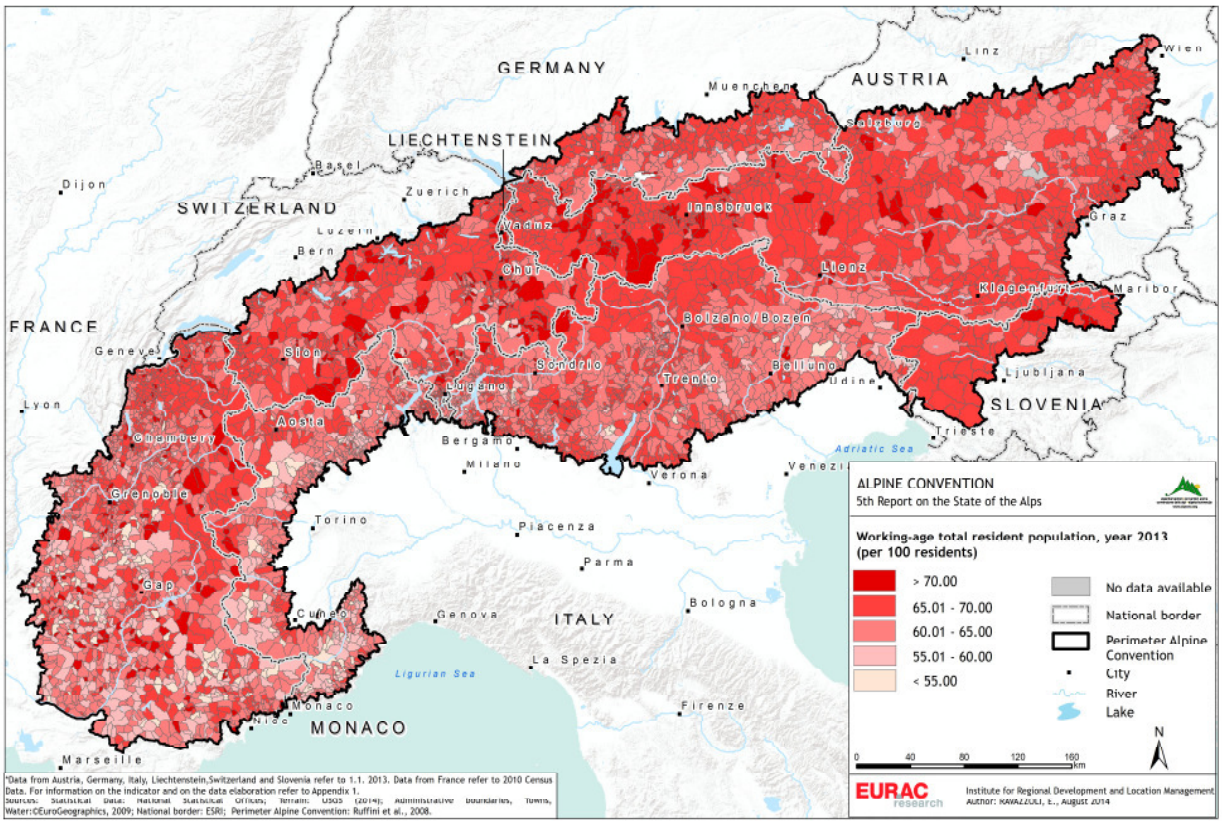


Figure 4: Working age total resident population (per 100 residents).

### 2.2.3 Foreign resident population

Migration is an important factor for the development of a territory, especially for areas, such as the alpine ones, subject to de-population or aging population. In these cases, the autochthonous population may not be sufficient to fulfil the needs of the labour demand or to face lower birth rates or the aging population. This is the reason for the foreign population resident in a territory being an important indicator to understand changes in the demography and its driving forces and also for analysing the labour market[4] (Figure 5). In the

[3] For some countries the indicator may be referred to another year, due to the unavailability of data (see the notes in the map).

[4] The percentage of foreign population on the total is a static dynamic which does not account for migratory flows, but rather depict their impacts. A detailed analysis of the migration dynamics in the Alps is included in the thematic analysis "Study on immigration and emigration from the Alps with respect to the "new highlanders".

whole Alpine area there is an overall average of 87.4 foreign residents out of 1,000 residents, but the situation is very heterogeneous according to the country taken in consideration: the lowest rate is in the Slovenian Alpine area with 41.3 foreign residents each 1,000 (followed by the French Alpine area with 62.3 foreign residents each 1,000), while the highest one is observed in Liechtenstein (335.0) and Switzerland (203.6). Comparing national averages with the Alpine areas, it can be observed that in Austria and Germany the national value is much higher than the Alpine value while in Italy it is the opposite, and the Alpine areas have a higher concentration of foreign population than the non-alpine ones (Table 2). For Italy the national average is probably lower due to the fact that the foreign resident population is sparsely concentrated in the Southern non-alpine part of the country.

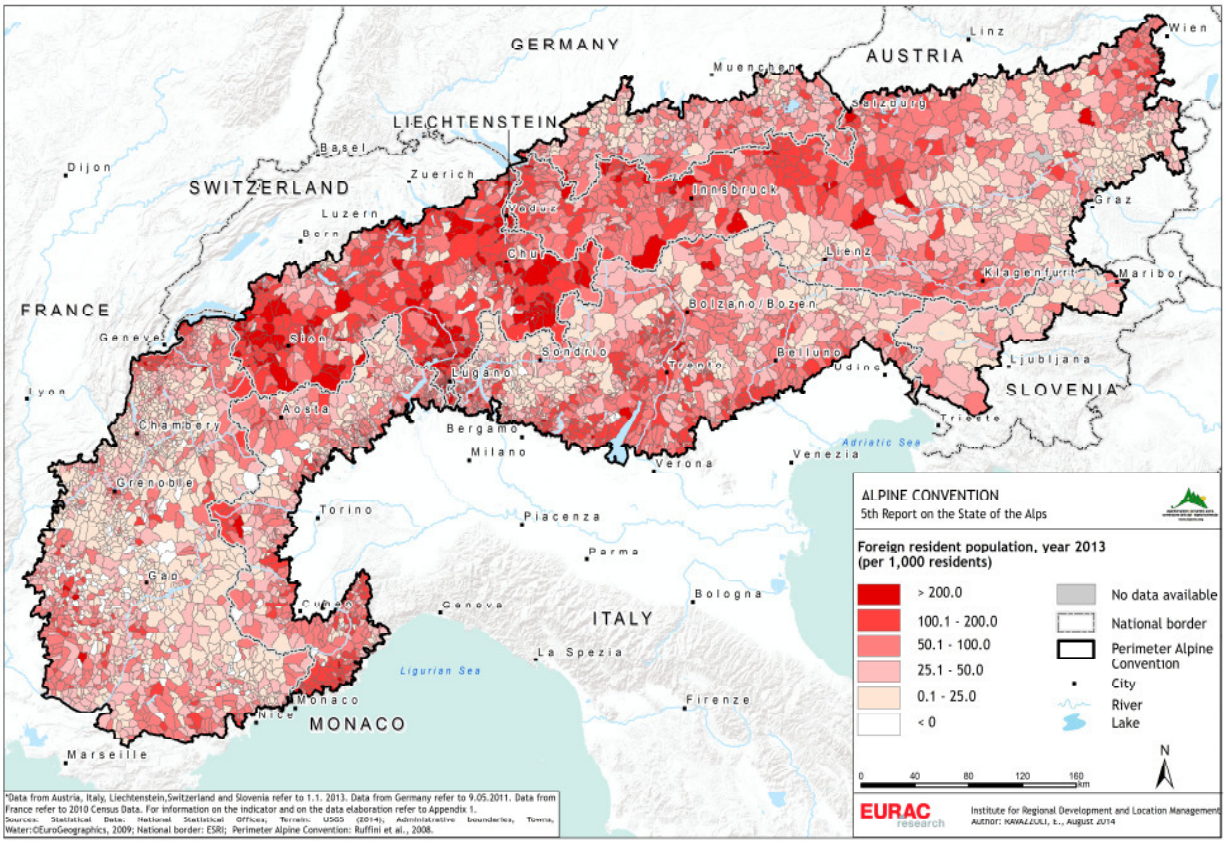


Figure 5: foreign resident population (per 1,000 residents).

## NATIONAL CONTRIBUTIONS

### AUSTRIA

The Austrian National Contribution will be integrated in the REV1 version.

### FRANCE

The population is very close to the national averages in terms of youth: 18% of the population is under 15, and 17% over 64 (15% in 1999). The percentage of women, the total resident population aging index, the working-age total resident population index are equal to the national averages.

The similarities between alpine rates and national ones may seem unexpected, but this is due to the mainly urban and suburban population of the northern part of the massif and of its southern brim, which are similar to other urban and suburban population of France. The situation is quite different if we examine the population structure of the central part of the territory. For example, the elderly (over 64) represent 20% of the population of the department des Hautes-Alpes, 3 points over the national and alpine level. The departure of young people who leave these part of the Alps to go work or study in the large cities in the perimeter (Grenoble, Annecy, Chambery…) or elsewhere means that the percentage of elderly people is going to continue to grow in this part of the territory, leading to specific and urgent needs of specific equipment, housing facilities, transports services, etc.

| | | Alpes | | France | |
|---|---|---|---|---|---|
| | | 2010 | % | 2010 | % |
| | Total population | 2,683,801 | | 62,765,236 | |
| | 0-14 years | 493,341 | 18.4% | 11,507,484 | 18.3 |
| | 0-19 years | 657,322 | 24.5% | 15,367,287 | 24.5 |
| | 20-64 years | 1,571,705 | 58.6% | 36,732,464 | 58.5 |
| 1.4 | 65 years and more | 454,774 | 16.9% | 10,665,487 | 17.0 |
| 1.5 | Total resident population aging index (per cent residents) | 0.92 | | 0.92 | |
| 1.6 | Working-age total resident population (per cent residents) | 1,735,686 | 64.7% | 40,592,264 | 64.7 |

Table 1: Population structure indicators, 2010.

6% of the population is foreign. The five nationalities most represented are Italians (21,100), Algerians (17,600), Portuguese (17,600), Swiss (14,000) and Moroccan (12,500). A large number of Swiss people living in the northern part of the Alp work in Geneva, commuting every day.

| | Alpes 2010 | |
|---|---|---|
| Total population | 2,838,085 | |
| French | 2,667,884 | 94.0% |
| Foreign population | 170,201 | 6.0% |
| Italian | 21,154 | 0.7% |
| Algerian | 19,632 | 0.7% |
| Portuguese | 17,649 | 0.6% |
| Swiss | 14,074 | 0.5% |
| Moroccan | 12,499 | 0.4% |
| Turk | 11,773 | 0.4% |

Table 2: Total and Foreign population, 2010.

### GERMANY

The proportion of women on the total resident population in the German Alps (51.13% in year 2013) does not differ significantly from the alpine average (51.1%). The values do not differ substantially also at municipal level, since more than the half of all alpine German municipalities show values of women per 100 inhabitants that range between 49% and 51%. The lowest rate of women per 100 inhabitants is shown by the municipality of Ettal in Oberbayern (44.96%) and the highest by the municipality of Rottach – Egern, as well located in Oberbayern (55.57%).

For what concerns the population age, Germany, like most European and Alpine countries, has faced in the last decades a process of ageing population. The causes of this change lie, among others, in the longer life expectancy and in the enhanced quality of life that elderly people are experiencing, due also to their longer lasting involvement in the labour market and the subsequent benefits in economic terms (Bayerisches Staatsministerium für Arbeit und Sozialordnung, Familie und Frauen, 2011).

The percentage of the total elderly population in the German Alpine area in 2012 amounted to 21.44% and was the highest among all alpine countries. At municipal level, the majority (55.79%) of the municipalities show a rate of elderly people per 100 residents higher than the average alpine level (19.5 persons above 65 years old per 100 inhabitants).

At an overall level, the German Alps present a rate of 78.08 foreign residents per 1,000 inhabitants. This rate is in line with the overall national German one (77.05 foreign residents per 1,000 inhabitants), while it is lower than the overall rate for Bavaria (82.11). Compared to the rest of Bavaria, the alpine areas seem therefore to represent in a lower measure a residence choice for foreign residents.

This is also shown by the analysis of the distribution of the foreign residents' rate according to the districts. The data show that, while the urban area of Rosehneim displays the higher rate of foreign residents per 1,000 inhabitants, the surrounding district presents a significantly lower rate (60.29). The district of Ostallgäu displays the lowest rate of foreign residents among all the alpine districts (50.82). Therefore, on the whole, non-urban areas appear to have lower rates of foreign resident population.

Finally, at municipal level, it can be observed that the majority of the German alpine municipalities (61.75%) display a rate of foreign residents lower than 50 each 1,000 inhabitants or between 51 and 100 foreign residents per 1,000 inhabitants (30.53%).

### ITALY

The distribution of the Alpine population by gender does not differ significantly from the national average and is on the whole fairly balanced: women are 51.1% of the total population, 51.6% on the whole national territory. Even at NUTS-2 level variations are small, ranging from 51% in Trentino-Alto Adige and Liguria to 51.4% in Piemonte and Friuli-Venezia Giulia. The NUT3-3 highest value lies in Biella (52.5%); Verona and Imperia are the provinces that have smaller values (50.1%). A greater variability was observed at the LAU-2 level: in the municipality of Balmuccia (VC) and in the municipality of Introzzo (CO) every ten residing individuals more than six are women. Values of the rate higher than 55% were also recorded in the municipalities of Ingria (TO), Montagne (TN), Sala Comacina (CO), Tremenico (LC), Palazzo Canavese (TO), Quassolo (TO).

The Alpine region is characterized by a decline in fertility rate, a depopulation in the age group of the active population and a consequent aging of population.

Ageing is a general trend in European countries, being the result of low fertility rates and longer life expectancy. However, as population structure depends not only on both fertility and mortality but also on

immigration/emigration the demographic effects are clearly visible in the Alpine area with an increase of population ageing.

The national percentage of elderly is 21.2%, slightly lower than that of alpine area (21.8%).

Women living in the Alps are older than men: the female indicator is 24.5%, the male one is 19.0%.

The older areas in the Alps are those in the west, above all in the provinces of Liguria and the province of Cuneo; another old area is in the east, the province of Trieste and the area between Tarvisio and Udine. An opposite situation is presented in Alto Adige which shows the lowest percentage of total elderly population, and the highest fertility rate. Another young area is that around Aosta

The youngest municipality is in the province of Bergamo (Brembate), the oldest in the province of Udine (Drenchia) where half of the residents has more than 65 years.

| *Percentage of total elderly population* | *Italian Alpine area* | *Italy* | *Italian Alpine area male* | *Italy male* | *Italian Alpine area female* | *Italy female* |
|---|---|---|---|---|---|---|
| *1.1.2013* | *21.8* | *21.2* | *19.0* | *18.6* | *24.5* | *23.6* |

The ageing index is a composite demographic ratio, defined as the percentage between the old age population (over 65) and the young population (under 15). It is one of the several demographic indicators (e.g. old age dependency index, average age, turnover index) that can be used to measure the rate at which a population ages.

This indicator takes into the account the "population turnover" and emphasizes the situations of lower fertility rates as well as the effects of age-selective exodus of young adult in a procreating age.

In Italy the demographic processes that have accompanied us for several years and which influence the ageing index are caused by the rise in the old age population, the fall in the young population, the rise in survival rates and the limited fertility rate, well under the level of the generational turnover (2.1 children per woman). These factors mean that total resident population ageing index has increased reaching 151.4% as on 1st January 2013.

The degrees of this index in the alpine area is higher (154.2 percent) than the national average due, probably, to the age-selective exodus of young people, the depopulation of mountain area leads to low fertility rate and as a consequence, to the population ageing.

There is a big difference between male and female in the alpine area: the ageing index for male is 128.0 percent, for female is 181.8 per cent.

Municipalities with an high ageing of population are located in West area and in Liguria (that is the most "ageing region" in Italy). Savona, Genova and La Spezia, three of the four provinces of Liguria, are among those with the highest index in Italy. A similar situation affects the higher parts of Orobie (Bergamasque alps) and middle Valtellina.

Younger municipalities are in Trentino Alto-Adige probably thanks to high fertility, in particular in the province of Bolzano.

In the East the province of Trieste is the one with the highest aging index of that area.

| *Total resident population ageing index* | *Alpine area* | *Italy* | *Alpine area male* | *Italy male* | *Alpine area female* | *Italy female* |
|---|---|---|---|---|---|---|
| *1.1.2013* | *154.2* | *151.4* | *128.0* | *125.4* | *181.8* | *178.9* |

At a national level the percentage of working-age total resident population is 64.8%, for the Alpine area is 64.6%.There aren't differences between Italian and alpine area data, percentages are quite the same for male, female and total.

In the last decades there has been a constant decrease in the share of people aged 15-64 due above all to a massive process of mountain exodus (depopulation) for better job opportunities or studies.

| *Percentage of working-age total resident population* | *Alpine area* | *Italy* | *Alpine area male* | *Italy male* | *Alpine area female* | *Italy female* |
|---|---|---|---|---|---|---|
| *1.1.2013* | *64.6* | *64.8* | *66.8* | *66.5* | *62.5* | *63.3* |

The exodus of young adults in a procreating age will lead to an increase of the ageing process of the population structure of the Italian Alps also in the future.

Working-age population aims to concentrate where there are better job opportunities. So, the highest concentration of this age group of population is in the valley area and around "tourist municipalities" such as Tarvisio, Mont Blanc and Frejus tunnel, and the areas around Trento and Bolzano.

Municipalities with an high aging of population are mainly located in the western alpine area, and particularly in Liguria (that is the most "aging region" in Italy), as well in the central part of Carnia (Friuli Venezia Giulia)

Younger municipalities are in Alto Adige probably thanks to high fertility

The highest level of population aging index is registered in Ribordone (TO), the lowest in Livigno (SO).

The foreign resident population consists of non-Italian citizens registered in the municipal registers of the resident population. The percentage of the total foreign population in the Italian Alpine area as a whole at 1st January 2013 amounted to 78.6 per thousand, a value higher than the national average (73.5 per thousand).

Italy has a brief history of colonial power, certainly not equal to that of other countries bordering the Alpine arc as France, for example. This aspect strongly influenced the heterogeneous composition of foreign population in Italy. The most important citizenship is the Romanian. Among non-EU countries prevail Moroccans, Albanians, Ukrainians, Macedonians, Chinese, Moldovan, Pakistanis, Senegalese. The composition in terms of countries of citizenship of foreign residents in the Alpine area differs somewhat from the national one. Even for the Italian Alps as for some other areas especially in the North and Center of Italy, the attractiveness played by the job opportunities and by the gain of better economic and living conditions (and also by family networks) determined inflows of foreign nationals from abroad or from other parts of the country, helping to draw the complex mosaic of the foreign presence in the area. Actually positive net migration with foreign countries have been recorded in the last decade almost everywhere in Alpine Area, with particular reference to the eastern part of Liguria, in the valleys and along the main arteries of communication, as well as in the areas of the National and Regional Parks of Dolomites, Belluno and Friuli-Venezia Giulia. Imperia is the province where the Alpine municipalities show, on the whole, the highest incidence of the foreign population (over 130 foreigners per thousand inhabitants). Treviso (115), Brescia (100), Vicenza (93) and Trento (92) follow in this ranking. In the provinces of Udine (44 foreigners per thousand inhabitants) and Sondrio (46) the incidence of foreign population is significantly lower than the national average (79). More than 230 residents per thousand are foreign citizens in the municipalities of the province of Imperia: Airole (with the maximum value of 274 per thousand), Chiusavecchia (269), Vessalico (268), Pietrabruna (231). The incidence of foreign population is also high in the municipalities of

Fortezza (239), in province of Trento, Campione d'Italia (238) and Veleso (236) in province of Como, Pragelato (238) in province of Torino, Odolo in province of Brescia (233). Only in 31 of the 1,749 municipalities included in the Alpine arch (corresponding to 1.8 %) at 1st January 2013 there were no resident foreign nationals.

With reference to the citizenship of interest are observed concentrations of nationalities in specific parts of the territory. It's the case for example of the Chinese in Barge, Envie, Bibiana, Paesana, Bagnolo Piemonte in the province of Cuneo. Since the '90s this area has been witnessing extensive and continuous arrivals of immigrants, particularly from China, mainly employed in the manufacturing process of the stone (in particular the marble tombstones). It's still the case of the Macedonians in the Valley of Cembra, particularly in the towns of Faver and Valda (TN), or in Salorno (BZ), often employed in the process of porphyry, the main economic resource of the area.

From the figure below the ranking of the top ten nationalities (in descending order for number of residents in all the Italian alpine municipalities) has been identified separately for year 2004 and 2011. The most representative citizenship for each Italian alpine municipality has been then determined. If the citizenship belonged to the first 10 nationalities identified as explained above, it has been reported on the map with a dedicated color. The first citizenships that were not in the top ten have been classified together in the residual class "other."

It is possible to highlight some peculiarities such as Germans in South Tyrol, Moroccans in Valle d'Aosta, Chinese in Barge, Envie, Bibiana, Paesana, Bagnolo Piemonte (CN), Macedonians in Cembra Valley.

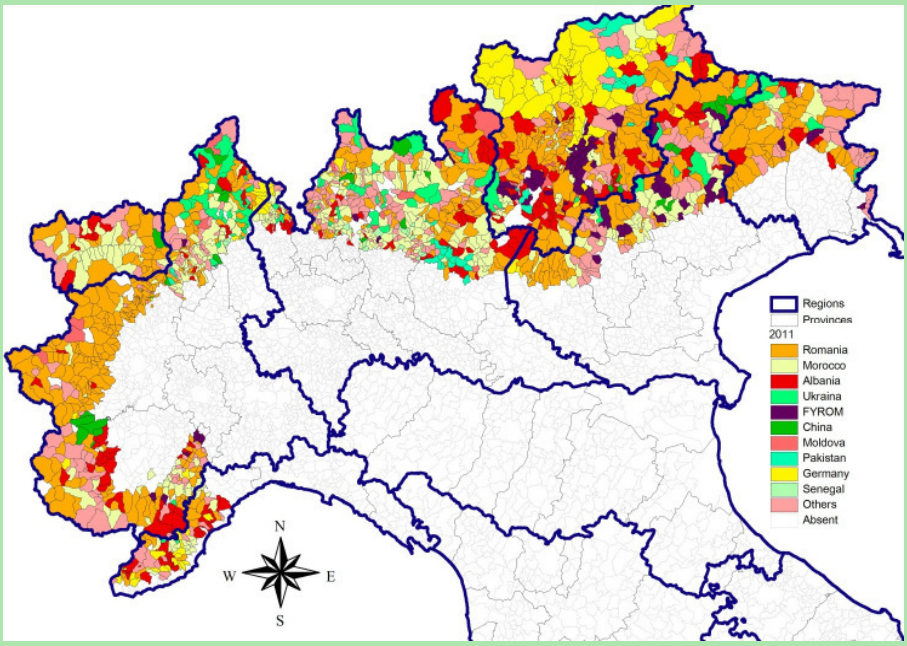


Figure 1: Italian alpine municipalities by first foreign resident citizenship.

## SLOVENIA

Slovenia, like most European countries, is facing the process of an ageing population. Because of the birth rate being too low and falling, together with longer life expectancy and a lower mortality rate, the age structure of the population is changing. On the one hand, the proportion of children (0–14 years) is decreasing, while on the other hand the proportion of the working age population (15–64 years) and in

particular the proportion of the elderly (more than 64 years) are increasing.

Such trends are not promising for the future (in 10 years and beyond), as they will lead to an increase in the proportion of the elderly and reduction in the proportion of the working age population.

In early 2013, somewhat more than 352,000 residents in Slovenia, i.e. 17.1% of the total resident population, were over 64 years of age; 20.2% of women and 13.9% of men (the proportion of men over 64 is therefore slightly smaller than the proportion of women over 64). Every third elderly person was living alone and was vulnerable to poverty. Around 1600 elderly people were employed (i.e. 0.2% of the active working population).

Five years ago (in 2008), the proportion of the elderly in the total resident population was smaller by exactly one percent. Population projections for Slovenia (EUROPOP2010) predict a further significant increase in the number and proportion of the elderly in the total population. By 2060, the proportion of the elderly would constitute 31.6% of Slovenia's total resident population, which means that by then every third person will be over 64 years old.

In early 2013, the proportion of the elderly (65+) in municipalities in the Alpine Convention area amounted to 17.6% and was not significantly different from the proportion of the elderly in the total resident population of Slovenia. The proportions of the elderly in different municipalities in the Alpine Convention area ranged from 13.7% (Zre e) to 21.9% (Kranjska Gora). It should be noted that quite a few municipalities with the highest proportions of the elderly among Slovenia's municipalities are located in the Alpine Convention area. This is particularly true of the markedly hilly municipalities located in the western part of the Alpine Convention area along the western border. In municipalities such as Kranjska Gora, Bovec and Bohinj, the proportion of the elderly was over 21.0%. At the same time these municipalities also registered a high ageing index (183.0 in the municipality of Kranjska Gora, 176.1 in the municipality of Bovec, and 151.0 in the municipality of Bohinj), indicating a highly unfavourable age structure of the population and alarming prospects for future demographic and overall developments (the challenge of maintaining settlements and man-made environments, and stopping depopulation of areas and overgrowing of cultivated land).

The proportion of the elderly population higher than 20% was registered in nine out of 62 municipalities (i.e. 14.5%) in the Alpine Convention area. All of these municipalities, with the exception of the municipality of Maribor (which registered 20.2 elderly people per 100 residents), are located entirely in the Alpine Convention area and, as already mentioned, mostly in the western part of the Alpine Convention area in Slovenia. In 2013, the registered proportion of the elderly in most municipalities of the Alpine Convention (72.6%) ranged from 15 to 20 per 100 residents. Only seven municipalities of the Alpine Convention registered a proportion of the elderly lower than 15 per 100 residents in 2013

| 1.1.2013 | Total elderly population (P65+)(absolute values) | Elderly population (P65+) (per 100 residents) | Percentage of working age - total resident population (P15-64) |
|---|---|---|---|
| Slovenia | 352,145 | 17.1 | 68.4 |
| Total AC Area | 116,786 | 17.6 | 67.8 |
| whole LAU2 in AC area | 50,623 | 17.8 | 67.5 |
| part of LAU2 in AC area | 66,163 | 17.4 | 68.1 |

Table 3: Demographic structure indicators, Slovenia, 2013. Source: Statistical Office of the Republic of Slovenia.

In addition to the high proportion of the elderly, data on the ageing index also indicate an unfavourable age structure of the population both in Slovenia and in the Alpine Convention area. In early 2013, the ageing index in Slovenia amounted to 118.1, which means that there were 118 elderly people (65+) per 100 young people (aged less than 15 years).

In 2013, the ageing index in the Alpine Convention area was not significantly different from the overall ageing index in Slovenia. The ageing index in the Alpine Convention area was somewhat higher in 2013 and amounted to 120.8. The municipalities that are located entirely in the Alpine Convention area registered a somewhat higher ageing index, i.e. 121.6 elderly people per 100 young people.

In the same period, the ageing index in 29 out of 62 municipalities (47.5%) in the Alpine Convention area was higher than the overall ageing index recorded in Slovenia, mostly in the municipalities located entirely in the Alpine Convention area. In 2013, the highest ageing indexes were recorded in the municipalities of Kranjska Gora (183.0), Bovec (176.1) and (Maribor 176.1), which are characterised by unfavourable demographic structure and trends. The lowest ageing indexes were recorded in the municipalities of Gorenja vas-Poljane (67.5), Logatec (76.8) and Cerklje na Gorenjskem (82.7).

| | *Total resident population aging index* |
|---|---|
| Slovenia | 118.1 |
| Total AC Area | 120.8 |
| whole LAU2 in AC area | 121.6 |
| part of LAU2 in AC area | 120.3 |

*Table 4: Total resident population aging index, Slovenia, 2013. Source: Statistical Office of the Republic of Slovenia.*

The ageing of the population also puts a greater burden on the working age population (people aged 15 to 64 years). Statistical analyses show that the share of the working age population in Slovenia slowly began to decrease after decades of continuous growth since 2003 when it stood at 70.4%. In 2013, it fell by 2

percentage points to 68.4. The decline in the working age population in Slovenia is the result of the ageing of the population and a declining number of births. Even though immigrants of age 15–64 represent the highest proportion of immigrants in Slovenia, this cannot stop the decline in the share of the working age population in Slovenia.

The share of the working age population in the Alpine Convention area is lower by 0.6 percentage points, amounting to 67.8. 32% of the entire working age population of Slovenia live in the Alpine Convention area.

The share of the working age population in municipalities in the Alpine Convention area ranges from 71.1% (in the municipality of Vuzenica) to 65.8% (in the municipality of Vipava). In 53 out of 62 municipalities (85.5%) a decline in the working age population has been noted in the last decade (2003–2013). The decline was the biggest in the municipality of Kranjska Gora, i.e. by 4.6%, followed by the municipalities of Radlje ob Dravi and Dravograd by 3.9%, the municipality of Ruše by 3.8%, and the municipality of Muta by 3.1%. These municipalities have at the same time recorded the biggest increase in the proportion of elderly (65+) in the last decade (2003–2013).

The number of the working age population will eventually decrease due to low birth rates.

| | Working-age total resident population (absolute values) | Working-age total resident population (per cent residents) |
|---|---|---|
| Slovenia | 1,408,581 | 68.4 |
| Total AC Area | 450,309 | 67.8 |
| whole LAU2 in AC area | 191,815 | 67.5 |
| part of LAU2 in AC area | 258,494 | 68.1 |

Table 5: Working-age total resident population, Slovenia, 2013 1st January. Source: Statistical Office of the Republic of Slovenia.

In terms of the ratio of foreigners, Slovenia belongs to the group (one third) of EU Member States with the lowest ratio of foreigners. On 1 January 2013, 91,385 foreigners accounted for 4.4% of the Slovenian population, of which 62,121 were men and 29,264 were women (32%). At that time, there were 44.4 foreigners per 1000 residents in Slovenia. Citizens of countries from the former Yugoslavia accounted for the highest share of foreign citizens, amounting to 86.3%.

As of 1 January 2013, there were 27,622 foreigners, i.e. 41.6 foreigners per 1000 residents, living in the municipalities of the Alpine Convention. This represents 30.2% of all foreigners in Slovenia.

But even here there were differences between those municipalities that are located entirely in the Alpine Convention area and those that are only partially located in it. Municipalities that are located entirely in the Alpine Convention area had 29.6 foreigners per 1000 residents(i.e. 3.0%), while municipalities that are only partially located in the Alpine Convention area had 50.6 foreigners per 1000 residents(i.e. 5.1% of all residents). Most foreigners were living in municipalities with larger urban centres or in industrial cities: 68 foreigners per 1000 residents in Postojna, 64.7 per 1000 residents in Jesenice, 62.2 per 1000 residents in Kranj, Nova Gorica and Šoštanj, and 57.9 per 1000 residents in Maribor. Small numbers of foreigners, i.e. less than 10 foreigners per 1000 residents, were living in municipalities in the eastern part of the Alpine Convention area, namely the municipalities of Lovrenc na Pohorju, Muta, Oplotnica, Ribnica na Pohorju, Mislinja, Podvelka and Solčava (which had the smallest ratio at 1.9 foreigners per 1000 residents). These are mainly rural municipalities with no big cities.

The highest share of foreigners is represented by citizens from the countries of former Yugoslavia.

Because of their age structure, foreign nationals are lowering the age of the Slovenian population, with the average age of the entire population of Slovenia being over 42 years and the average age of foreign nationals being 33.5 years in the last five years.

### SWITZERLAND

The following section presents a national focus on the Swiss population structure, based on the analysis of three indicators collected at municipal level: the rate of women each 100 residents, the rate of elderly (>65 years old) people each 1,000 residents and the rate of foreign residents each 100 residents. The analysis is mainly based on the municipal values; nevertheless, due to the heterogeneity of these values, which, in some cases, do not allow identifying clear patterns, the analysis has also foreseen an aggregation of the municipal values at Cantonal (NUTS 3) level.

The proportion of women on the total resident population in the area of the Alpine Convention in Switzerland does not differ significantly from the national Swiss average (50.5% in year 2013). Also at municipality level, the values do not differ substantially from the Swiss average, since two thirds of the Swiss alpine municipalities present ratios of women on the total resident population ranging from 48 to 52%.

For what concerns the population age, Switzerland, like most European and Alpine countries, is facing a change in the age structure of the population, with an evidence of population ageing. The possible causes of this change lie, among others, in a lowering of the birth rates, combined with a longer life expectancy and a lower mortality rate (FSO, 2014). The percentage of total elderly population in Switzerland in 2012 amounted to 17.4% of the population and is increasing (FSO, 2014). This phenomenon appears more pronounced in the Alpine Swiss area, which presents an average rate of elderly people higher than the average Swiss one (18.43%); moreover, more than the half of the Alpine Swiss municipalities (67%) present a share of elderly people that is even higher than this average and one third of these municipalities present a rate of elderly people higher than 22%.

Regarding the foreign resident population, at an overall level, Switzerland presents an average rate of 232.61 foreign residents on 1,000 total residents. The majority of these residents stem from EU27 countries and a high contribution of foreign residents comes from other partly alpine countries such as Italy (which contributes for 15.6% to the overall Swiss foreign resident population), Germany (15.19%) and France (5.56%). All in all, foreign residents from the other Alpine countries constitute up to nearly 40% of the overall foreign population resident in Switzerland.

In comparison with the overall Swiss values, a lower average value of foreign residents can be observed in the Swiss municipalities entirely located in the perimeter of the Alpine Convention (203.63); nevertheless, in general, the municipal foreign resident rates are generally higher in comparison with the values displayed by the municipalities in other alpine countries.

The foreign resident population is not evenly distributed across the different alpine Cantons: for example, the Cantons Vaud, Ticino, St. Gallen and Glarus present a higher rate of foreign resident population in comparison with the alpine average. In the case of Vaud and Ticino (with a rate of 267.32 and 224.97 foreign residents each 1,000 inhabitants), the rate of foreign residents is also higher than the average Swiss one. These Cantons appear to be attractors of foreign residents especially from the nearest alpine countries: for example, in Ticino, the foreign resident population from Italy constitutes the 57% of the overall foreign population, while in the Canton St. Gallen, the 20% of the resident population is from Germany.

On the other hand, the Alpine Cantons displaying the lowest rate of foreign residents are Appenzell Innerrhoden and Uri, which, with rates of 100.53 and 105.20 respectively, are located far below the Swiss and Alpine average.

The comparison of the data at national, cantonal and municipal level show a complex picture: on the one hand, the Alpine Swiss municipalities and Cantons are generally less interested by the phenomenon of foreign resident population than the overall Swiss territory, but, on the other hand, this phenomenon is unequally distributed among the Alpine Cantons. The aggregate data show that some specific Cantons (Vaud, Ticino, Valais, St. Gallen and Glarus) present a higher incidence of resident foreign population than the Alpine Swiss average.

In conclusion, the incidence of foreign residents on the total population does not seem to be associated to the fact that a Canton is fully or only partially included in the Alpine area, but seems rather related to local characteristics, such as the proximity to other countries and the specific situation of the cantonal and national labour market.

## 2.3 Population growth

Demographic evolution is influenced by trends in fertility, mortality and migrations. These changes can affect, but also can be affected by, economic and social changes in society. That's why it is crucial to consider the demographic changes in a wider context including also economic and social indicators. The relationship between the demographic development and the economic and social changes in the Alps is complex, since, on the one hand, social and economic changes are affected by the demographic development and, on the other hand, the demographic development is able to affect the economic and social dimension. This is the reason for considering the demographic changes in a wider context, including also economic and social indicators and taking into account the changes in the population structure that are occurring and have occurred at Alpine level.

At an overall level, demographic trends are not equally spread across the Alpine region and it is therefore not possible to highlight a single Alpine demographic population loss, stagnation or repopulation trend. Moreover, areas affected by population growth and population decrease are often located closely to each other, suggesting that specific conditions linked to the different administrative units considered may also play a relevant role in influencing demographic dynamics.

In general, at Alpine level, when analysing how population growth and decrease have been concentrated in the decade 2001 – 2011[5], the data show the highest population growth trends (Figure 6) can be found in the Austrian Bundesländer of Tyrol and Salzburg, in the French departments of Haute-Savoie, Savoie (mainly around the cities of Chambéry and Grenoble) and Var, in the Swiss cantons of Valais, Ticino and Central Switzerland (Nidwalden, Obwalden, Zug, Lucerne, Schwyz).

In these prospering regions of the Alps, the urbanisation of the urban valley centres is evident. Due to the influence of the growing tourism sector, which offers a steady source of income for the local inhabitants, population gains can be noticed also in remote municipalities that are not easily accessible, particularly in the tourism centres in the Austrian, French, Swiss and Italian Alps.

On the other hand, phenomena of population loss or stagnation can be observed in the central-eastern Austrian Alps (particularly in eastern Steiermark, in the southern parts of Niederösterreich and in the peripheral areas of Kärnten), in the Swiss Uri Canton and in several areas of the Italian Alps (Western side from Liguria to Val d'Ossola area, inner Lombardia, provinces of Pordenone and Udine). Furthermore, minor population losses are observed in the upper areas of the Slovenian Alpine region. All in all, the Alps as a whole show the emergence of agglomeration processes, where population tends to coagulate in the proximity of the urban areas and along the main transportation access routes to these urban areas. Nevertheless, different levels of incidence of this agglomeration phenomenon can be observed, both within-country and across countries. In France, Switzerland and Germany, this process seem generally slower, with a lower population decrease in remote areas in comparison with Italy and Austria. In the two latter countries, the situation varies greatly according to the territory considered and is not homogeneous, with a more severe population loss in more remote areas and a stable or increasing population along the main transportation axes and urban areas. Agglomeration processes seem here to have gone at a steadier pace in the last 10 years in comparison with France, Germany and Switzerland.

Different hypotheses can be advanced for the explanation of these changes; nevertheless, common denominators can be identified. Taking the Italian situation as an example, it is possible to see that the areas

[5] The main indicator analysed in this report for this scope is the population growth rate, whose description is available in annex A.

where specific policies have developed, for example in maintaining mountain agriculture, have had a lower loss of population. Fiscal autonomy is another important component of the picture. Another driving factor could be tourism, since it can be noticed that areas that have strong tourism structures are also the ones that show lower population losses.

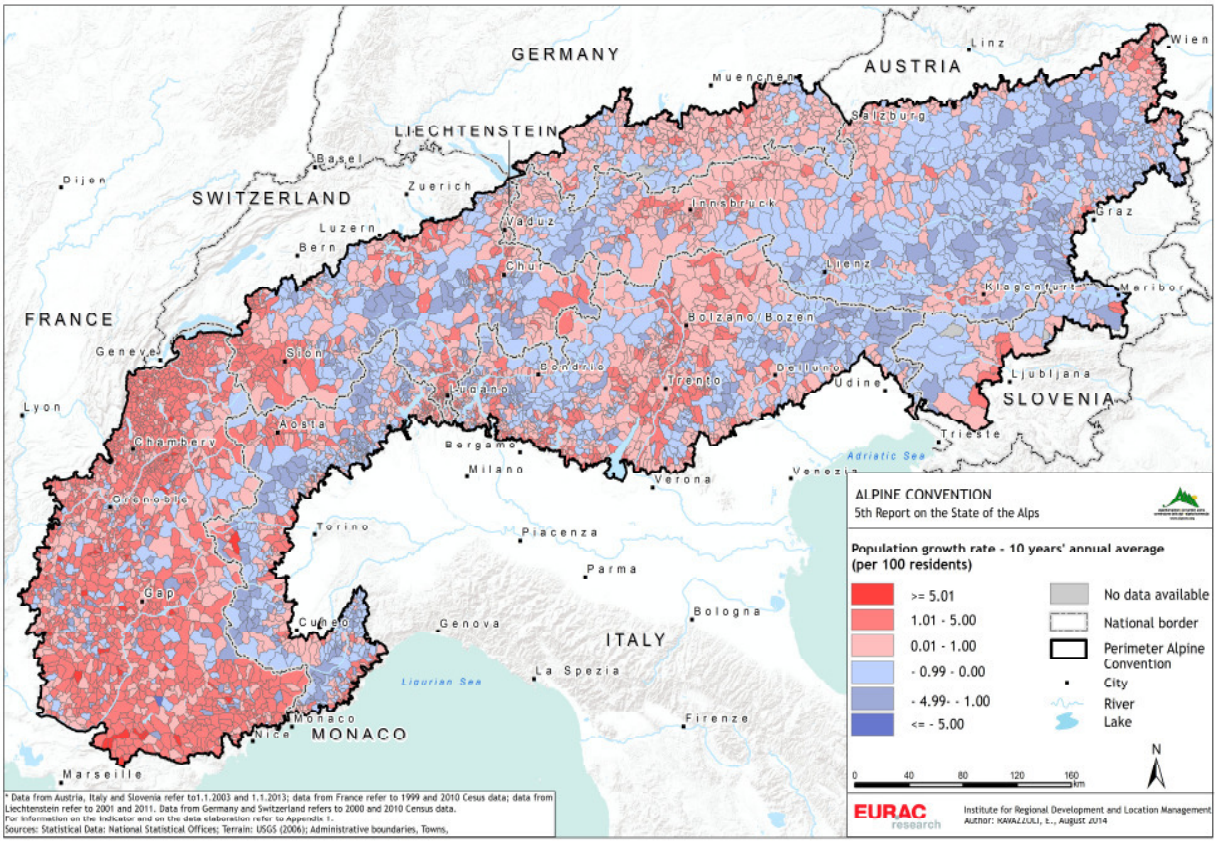


Figure 6: Population growth rate (per 100 residents)

## NATIONAL CONTRIBUTIONS

### AUSTRIA

The Austrian National Contribution will be integrated in the REV1 version.

### FRANCE

Over the last 10 years, the French Alps have gained almost 300,000 inhabitants. Its demographic growth rate (over 1% in annual rate) is higher than the national rate (0.7%). It is partly due to natural growth (0.4%), but two third of the growth are explained by the excess of arrivals over departures of population (0.7%). This in turn is explained by the economical attractiveness of the territory : the number of jobs offered grew by 17% over the same period (+13% in France), especially in the tertiary sector.

### GERMANY

For this national focus on population growth in the decade 2000 – 2010, the main indicators considered have been the overall population growth rate, namely the variation in percentage between the year 2000 and 2010, and the average yearly growth rate, namely the average rate of population increase or loss for each of the years between 2000 and 2010.

The German area included in the perimeter of the alpine Convention has seen, in the decade 2000 – 2010, an overall increase in the population of 3%. This growth rate is in line with the growth rate for the overall Bavaria, which has seen, always in the same decade of reference, a population increase of 2.5%.

The average yearly growth population rates for the above mentioned period are positive in almost all the districts, except in the district of Garmisch – Partenkirchen (-0.03% yearly average rate population loss rate) and in the urban district of Kaufbeuren (-0.11% yearly average population loss rate). Nevertheless, for these two districts, the overall picture for the decade 2000 – 2010 indicates signals of a population stagnation rather than of a substantial population loss: the overall rates of population growth for the entire decade were in fact respectively -0.28% for Garmisch Partenkirchen and -0.15 for Kaufbeuren.

At municipal level, the population trend in the German Alps in the year 2001 – 2010 can be considered either stable or increasing: more than one third of the municipalities (76%) have seen a positive population growth from 2001 to 2010, while more than the half of them (58%) have seen a population growth higher than 2.5%, with yearly average growth rates ranging from the -1.17% of Reit im Winkl (district of Traunstein) to +2.60% for the municipality of Balderschwang (Oberallgäu).

### ITALY

Eastern municipalities (above all in Tarvisio's area) have the most decreasing population. Most municipalities maintain during the considered period a stable population. Municipalities that increase for natural and migratory component are located along the highway (A22) while those who increase for only migratory component are located above all in the province of Torino. The highest population growth rates are along the highway (A22), in municipalities near the sea (in Liguria), in the centre of the Valle d'Aosta region and in the area of Bardonecchia. Lower population growth rates are in the area among Tarvisio, Tolmezzo and

Gemona (there was an earthquake in 1976).

The average annual rate of increase of the Alpine population between 2003 and 2013 was equal to 0.49%. In ten years, therefore, the population of Alpine municipalities grew on average, each year, one unit every two hundred. It is not a high value, but higher than the national average during the same period (+0.45%) and higher than the value recorded in the complex of the other Italian non Alpine municipalities (+0.44%). Of course, the situation is quite varied across the Alpine territory and areas where depopulation is definitely a problem are emerging. 42.1% of the municipalities of the Italian Alpine area present growth rates of the resident population between 2003 and 2013 null (for about ten municipalities) or negative. The municipalities with the highest negative growth rate are the municipalities of Sabbia in province of Vicenza, Cintano, Ingria and Moncenisio in province of Torino, Drenchia, Livosullo and Savogna (in province of Udine), Falmenta (in province of Verbano-Cusio-Ossola) where, on average, in each year of the period considered for every hundred inhabitants there has been a reduction of about 4 units. On the opposite side the population has grown by more than 5 per cent per year in the municipalities of Givoletto and Pragelato, in the province of Torino. This increase was affected in many cases by the migratory component.

More generally, the growth rate is positive in the foothills and along the southern border of the Alps, in the northern part of Valle d'Aosta and Trentino-Alto Adige. For the municipalities of Trentino-Alto Adige, the positive effect (in terms of population growth) of the migratory component is added to a positive natural balance (mainly due to the increase registered in births).

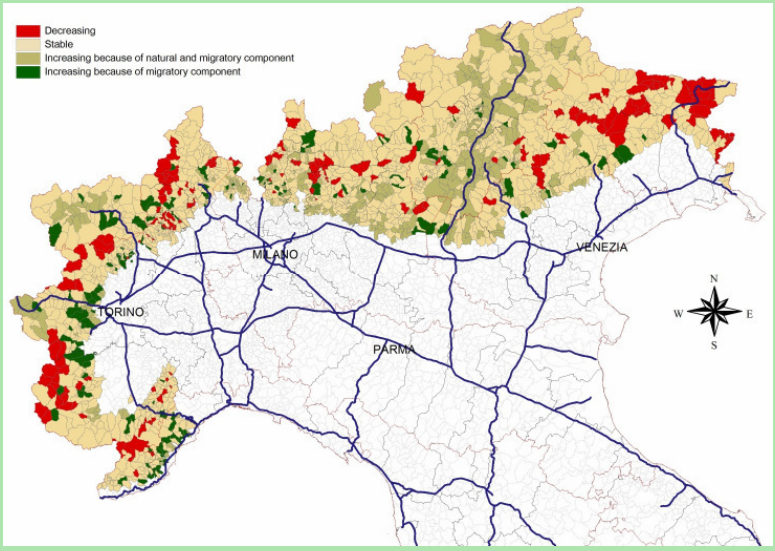


Figure 1: Italian alpine municipalities by demographic increase/decrease (Years 2004-2010).

## SLOVENIA

In the last decade (2001–2013), the population growth rate in Slovenia has been low. The average annual population growth rate in this period was 0.3%.

Regarding the Alpine Convention area, the registered population growth rate was higher than the overall population growth rate in Slovenia in 27.4% of municipalities (17 of 62 municipalities), the highest being recorded in the municipality of Logatec with a 2.0% growth rate, followed by the municipality of Prevalje with a 1.5% growth rate, and the municipalities of Ho e-Slivnica and Ra e-Fram with a 1.4% growth rate.

In the last decade (2003–2013), positive population growth rates in the Alpine Convention area have mostly been registered in municipalities that are partially located in the Alpine Convention area, and in municipalities located in the valley areas of the Gorenjska and Koroška region.

In the last decade (2003–2013), more than half of the municipalities of the Alpine Convention area, specifically 53.2% or 33 out of 62 municipalities, have faced a population decline, which has been the fastest in the municipality of Slovenska Bistrica with an average annual population decline of 1.6%, followed by the municipality of Nova Gorica with a decline of 1.2%, and the municipality of Podvelka with a decline of 1.0%. Negative population growth rates prevail in municipalities located entirely in the Alpine Convention area; 66.6% of them have registered negative average growth over the last decade. In contrast, a negative average growth rate has been recorded in only three municipalities that are partially located in the Alpine Convention area.

### SWITZERLAND

Switzerland has undergone an increase in population between the 1980s and the present, with a steady growing pace also in the last decade. In figures, the total population of Switzerland increased by 9.2% in the period 2000-2010 (Jeanneret & Goebel, 2012) displaying signs of agglomeration close to the main metropolitan areas.

Also in the Swiss areas located in the perimeter of the Alpine Convention, the population growth appears to be concentrated in proximity of the main transportation axes and of the bigger cities: the most relevant increases can be observed in the Canton Ticino, close to Lugano and Bellinzona, in the Canton Vaud, close to the Lausanne area, and along the main transport axes in the Canton Valais. All in all, the alpine municipalities of Switzerland do not appear as experiencing significant depopulation processes: less than 3% of the municipal units analysed for this report have seen, between 2001 and 2010, a population loss more severe than 2%.

In comparison with the alpine tendencies, in the Swiss mountain areas, the fact that population growth appears interested by phenomena of agglomeration concentrated in specific more accessible municipalities, is not combined with consistent parallel depopulation processes in other more remote alpine municipalities.

## 2.4 Population balance

As already pointed out in the previous paragraph, the demographic change is associated both with the inputs and outputs from the population stock due to natural causes (births and deaths) and with the population movements due to in- and out-migration.

In order to specify the *natural dynamics* that are at the basis of population growth or decrease, it is worth analysing three main different components separately: the natural change, the crude birth rate and the crude death rate (Table 3).

| | | *Natural change* | *Natural change (per 1000)* | *Crude birth rate* | *Crude death rate* |
|---|---|---|---|---|---|
| Austria | Alps | -1,721 | -0.5 | 5.6 | 5.8 |
| | National | - | -0.1 | 9.4 | 9.4 |
| France | Alps | 11,091 | 4.1 | 12.1 | 8.0 |
| | National | - | 3.8 | 12.6 | 8.7 |
| Germany | Alps | -4,195 | -2.8 | 8.2 | 10.2 |
| | National | - | -2.4 | 8.4 | 10.8 |
| Italy | Alps | -7,418 | -1.7 | 8.8 | 10.5 |
| | National | - | -1.3 | 9.0 | 10.3 |
| Liechtenstein | Alps | 133 | 3.6 | 9.7 | 6.1 |
| Monaco | | - | - | 12.7 | 8.1 |
| Slovenia | Alps | 870 | 1.3 | 10.6 | 9.3 |
| | National | - | 1.3 | 10.7 | 9.4 |
| Switzerland | Alps | 1,777 | 0.9 | 9.4 | 8.4 |
| | National | - | 2.2 | 10.3 | 8.0 |
| **Alpine region** | | **537** | **0.0** | **8.8** | **8.6** |

Table 3: main indicators for the demographic balance of the population, for the Alpine area and the whole national territory of the eight Alpine countries – year 2012. Data of year 2012, except for France (year 2010). Data Source for Monaco: Monaco Statistics (2013). For a detailed definition of the indicators, see Annex A.

The natural change (the number of live births minus the number of deaths) is associated with the inputs and outputs from the population stock due to natural causes (births and deaths). This factor is therefore influenced by the population structure, in particular by the percentage of elderly people on the total of the population. This influence can be observed in the Alpine area, where lower values of natural change in areas characterised by a high total elderly population index can be observed. Areas characterized by decreasing values are mainly located throughout Italian Alps, with remarkably low values on the Western and Eastern sides. A more fragmented framework is visible in other parts of France, Switzerland and Germany. Rather stable values can be observed in South-Western Austria. On the other hand, higher values can be found in a

corridor from Liechtenstein to Central Austria, including Italian South-Tyrol and Austrian Tyrol, where the total elderly population ageing index is lower. Similar trends are also visible in French department of Haute-Savoie and the city of Grenoble and its surroundings. In Slovenia the situation is complex, with higher rates of natural change near the city of Ljubljana and in the bottom valleys and lower rates in the most remote areas. In this relation it has to be highlighted that the higher rates shown in some Slovenian municipalities are partly due to the fact that the municipalities only partly belonging to the Alpine Convention perimeter have been considered in their entirety.

To better understand the values and signs of the natural change it is also necessary to analyse both its inner components: births and deaths. For the description of these components, the most used indicators are the crude birth rate and the crude death rate.

At overall Alpine level, a high variability of the crude birth rate (Figure 7) is observable, with the highest rate in the French Alps (12.1 per 1000) and the lowest values observable in the Austrian Alps (5.6 per 1000). All in all, the overall situation at Alpine level appears fragmented and heterogeneous according to the single municipalities considered and no clear pattern emerges. Local specific factors seem therefore to have a higher influence on the birth rate than general dynamics occurring at Alpine level.

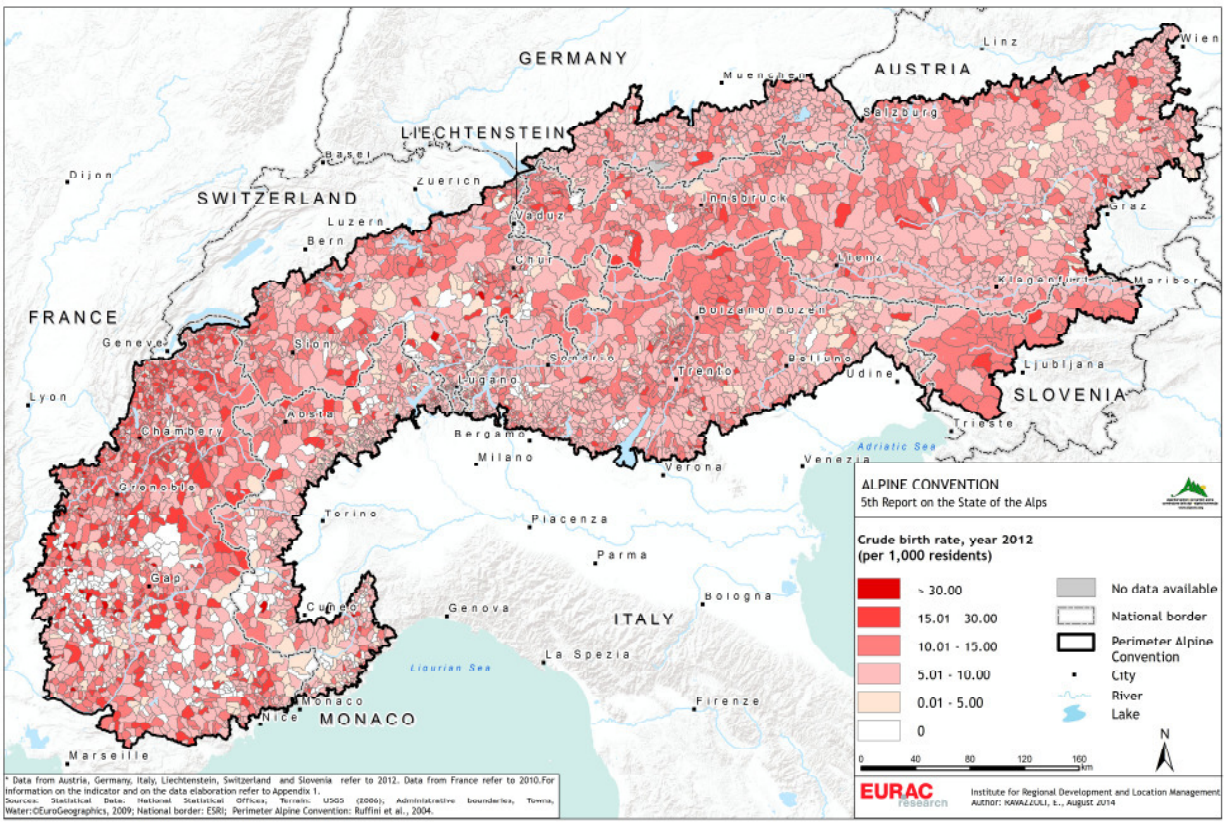


Figure 7: crude birth rate (per 1,000 residents).

For the Alpine territory in general, the crude death rate is strictly connected with phenomena such as an ageing population, with higher values of this indicator observable where the population is older. Therefore, despite the complex picture, which presents a high variability (Figure 8), a higher crude death rate is observable in the Alpine areas that present a high incidence of the older shares of the population (for

example, the more rural Alpine areas in Italy and Austria). On the contrary, the presence of foreign population with its young age structure could be one of the factors that reduce the value of the indicator for territories where it is mainly present.

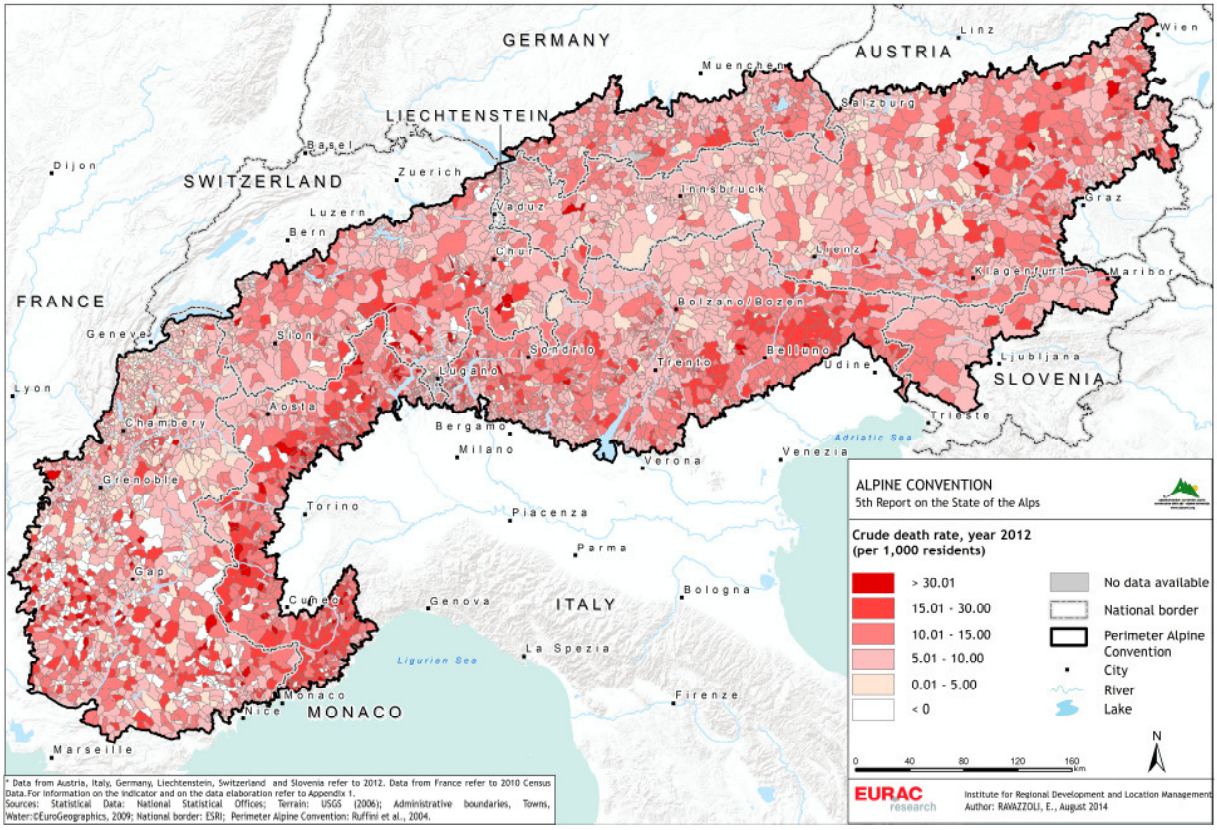


Figure 8: Crude death rate (per 1,000 residents).

Natural population changes are not only linked to the population age, but also to other factors, such as familiar and reproductive behaviours play, an influential role. Among others, the presence of facilities and services that can encourage women to have children and families can be considered important for natural change. Another factor which plays an important role is the fertility rate, namely the average number of children per woman[6]. Another information which can provide interesting insights into health conditions and quality of life in different areas and can therefore be considered a *proxy* for determining positive conditions for births, is the life expectancy at birth. Table 4 compares the fertility rates and the life expectancy at birth of the Alpine Countries. The link between a positive natural change and the fertility rate emerges clearly, with the countries presenting a higher fertility rate showing also positive natural change rates.

| | *Austria* | *France* | *Germany* | *Italy* | *Liechten-stein* | *Slovenia* | *Switzer-land* |
|---|---|---|---|---|---|---|---|
| *Total fertility rate* | 1.44 | 2.00 | 1.38 | 1.43 | 1.51 | 1.58 | 1.52 |
| *Life expectancy at birth* | 81.1 | 82.1 | 81.0 | 82.4 | 82.5 | 80.3 | 82.8 |

Table 4: Fertility rate and life expectancy at birth for the Alpine Countries.

[6] See Annex A for the detailed definition.

Another important factor that influences the total population change is the migratory component (Figure 9); the predominance of the "migratory component" is due both to the strengthening of the migratory flows and to the reduction of the fertility rates (the mortality can be considered quite stationary).

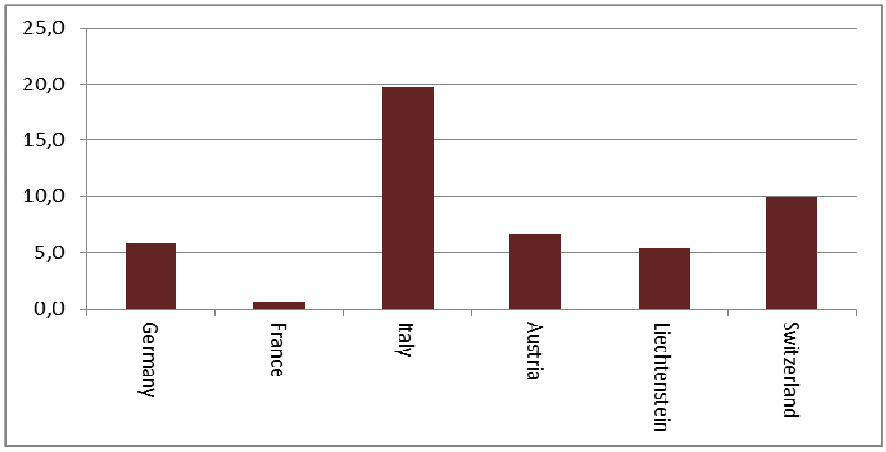


Figure 9: Crude rate of net migration plus statistical adjustment, 2013.

The mixed effect of the natural and migratory components may result in different values and signs of the total population change but, most of all, may have completely different impact on the characteristics of the stock of the resident population. The two main components of the migratory balance (in addition to the movement for "other reasons") are the internal migratory and the international migratory balances.

Migration seems to influence the Alpine territory in different ways. More specifically, regarding change in population due to migration, highest values can be seen in most of German Alpine municipalities, a great proportion of French territory, especially in Haute-Savoie, Var and Alpes de Haute Provence departments (even if sometimes fragmented), areas surrounding the cities of Salzburg and Wien. In Italy, the framework seems to be very more complex and fragmented: in any case, zones with higher values are generally located in peri-Alpine areas and in Central Alps (mainly Trentino – Alto Adige). Lowest values, at Alpine level, are visible in almost Swiss territory (with only a few exceptions). Central Austria and Slovenia show more stable values [7].

The thematic analysis "Rising immigrant population and integration in rural areas" offers a detailed analysis on the topic with a focus on Austria, while the thematic analysis "Study on immigration to and emigration from the Alps with respect to the 'new highlanders'" offers a detailed analysis of in- and out-migration in the Alps.

[7] Nevertheless, it is not easy to deal with migratory balance for a transnational territory such as the Alpine territory. For example, a distinction between "internal" and "international" migrations it is not easily applicable. The distinction would be possible only by taking into account the "departures-arrivals" matrix for changes of residence between couples of municipalities. Nevertheless, this matrix is not always available in official statistics. For example, the Italian data allow knowing the arrival and the destination municipality for internal migrations, but not know the destination municipality for changes of residence directed abroad (it could be an Alpine municipality or not). Thus, it is only possible to evaluate people coming in and people going out each Alpine municipality, giving a measure of "attractiveness" of each municipality in terms of migrations. However, these figures may be affected, for example, by different levels of accuracy of the statistical information about out-migration produced by each single Country taking part to the Alpine Convention. A good proxy for the level of attractiveness, moreover, can be provided by the stock of foreign population resident in Alpine municipalities, which is easier to measure and to compare at the international level.

## RISING IMMIGRANT POPULATION AND INTEGRATION IN RURAL AREAS Changes in the geography of migration and new orientation of integration processes

Thomas Dax and Ingrid Machold - Federal Institute for Less-favoured and Mountainous Areas

### Introduction

The traditional perception of mountain regions as peripheral areas threatened by a weak economic performance and out-migration of substantial shares of its population has to be readjusted following the recent trends in regional migration. Few social phenomena had such a significant impact on demographic, economic and cultural developments of our countries like migration. Beyond new waves of immigration towards cities that are widely acknowledged in research and public discussion more in-depth analysis of current migration trends suggest that increasingly rural regions in large parts of Western Europe are affected by high immigration rates as well. In many rural regions of France, Spain, Italy, Germany, Switzerland and Austria former migration losses have been displaced by positive migratory balances (Bauer and Fassmann, 2010). The most important feature bringing about this change was international migration that boomed due to economic, but also political reasons, like the EU enlargement and the rising number of extra-Europe migration (De Lima, 2014). The following analysis focuses on the mountain areas in Austria and highlights this migration turnaround that changed the character of the Alpine area of Austria from an out-migration area towards "immigration regions". This shift in migratory movements is not limited to Austria but is also relevant in most of the other Alpine regions. The discussion of how to organize useful integration processes has become an important issue for regional development and mountain areas as well. It will be shown that recognition of the new situation and a reorientation in the shaping of integration processes towards establishing "welcoming communities" is required in order not to spoil the development potential of immigrants.

### From out-migration to immigration societies

Movements of people within space are highly differentiated due to the geography and time dimension included. They can be differentiated into circulatory movements (like tourism, second-home dwellers and commuters), non-permanent migrations (like seasonal workers) and permanent migrations (Bender and Kanitscheider, 2012). The following analysis focuses on this latter group who also show a variety of motifs. Economic and political migrants are the most relevant group, but particularly in mountain areas amenity and retirement influenced migrations are also important. Bender and Kanitscheider point out several hotspots of immigration into the Austrian Alpine region, according to high shares of migrants aged over 50 years, and indicate that these areas might be shaped by the amenity type of migration (Bender and Kanitscheider, 2012: 240). However, that analysis does not differentiate between national (internal) and international migration. This thematic analysis focuses on the separation of migration types and the particular relevance of *international* migration for mountain areas in Austria which is primarily based on employment aspects.

Analysis within the research project "International migration in Austrian rural areas" led by the Federal Institute for Less-Favoured and Mountainous Areas[8] enabled to differentiate internal and international

[8] Commissioned by the Federal Chancellery and the Ministry of Agriculture, Forestry, Environment and Water Management, this project provided thematic inputs to the Working Group "Diversity and Integration within spatial development" of the Austrian Conference on Spatial Planning.

migration at the municipal level. The study findings (Machold et al., 2013) reveal that rural areas in Austria are characterised increasingly by international immigration so that almost in all regions a negative balance of natural demographic development is compensated by the positive migration balance. For the whole part of the Alpine regions in Austria this results in a positive migration balance of +6,100 people (period 2002-2010), with the international migration balance of +60,400 and the internal migration balance of -54,300 (Dax and Machold, 2014).

While foreigners account for the bulk of international migration, national citizens concentrate on internal movements. These figures highlight changes in place of living that go across municipal boundaries. The relevance of the contribution of immigration to demographic development in Austrian Alpine regions is stressed by the balance, showing that over the period 2002-2010 the population figure rose by more than 56.000 due to migration of foreigners, while the Austrian citizen migratory balance is -50.000.

The spatial differentiation within the Alpine region is mapped in Figure 1 and confirms the assessment that all regions within the mountain areas are affected by the positive international migratory balance (except Lienz with a balance of -0,1‰ p.a.). This was very different one or two decades ago, when hardly any region, and if then mostly those equipped with specific amenity features, expressed positive in-flows.

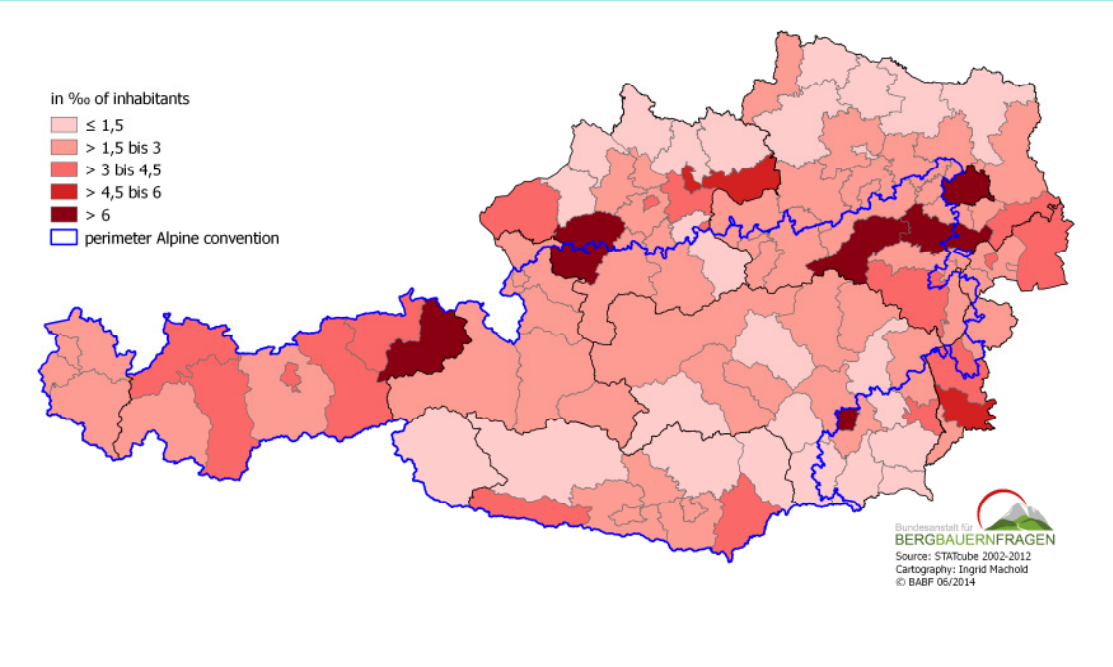


Figure 1: International migration balance 2002-2012 (p.a.).

In contrast to this positive balance of international migration, the internal balance for most rural areas, and particularly those of peripheral, mountain regions is negative (Figure 2). The spatial pattern of these movements is heavily influenced by the urban-rural dichotomy and the extension of agglomeration regions. This can be realized by the spaces of influence for the main cities in Austria which stretch out to areas within the Alpine Convention perimeter. Almost exclusively, for these areas a positive internal migration balance can be shown.

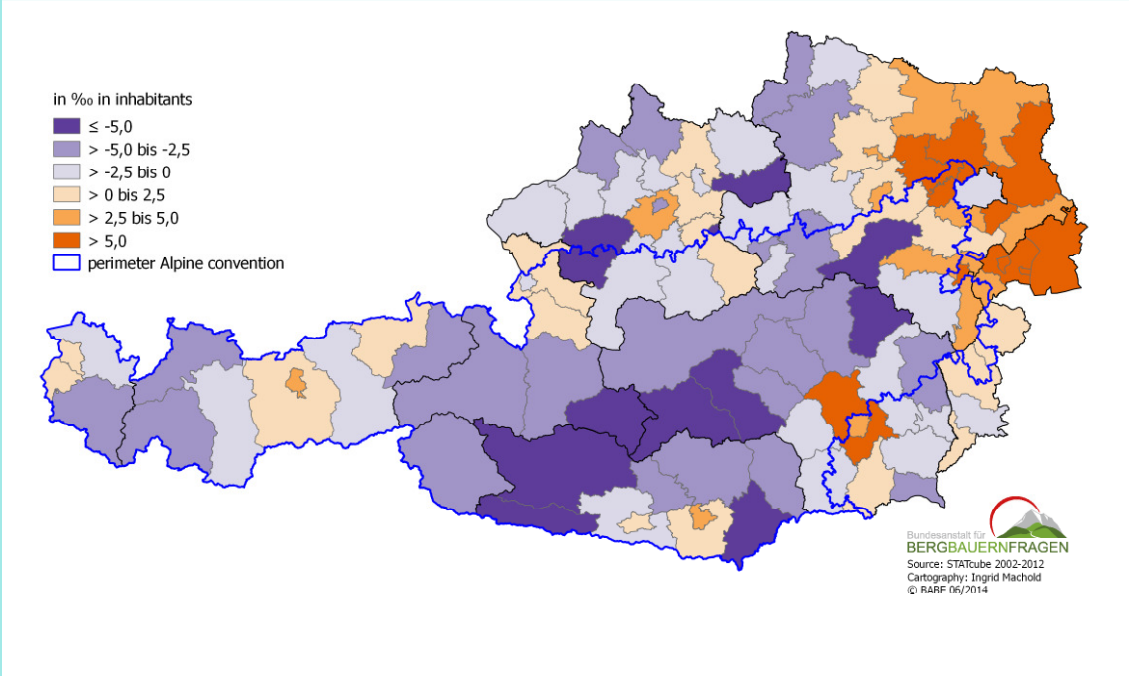


Figure 2: Internal migration balance 2002-2012 (p.a).

The overall effect of migration for urban and rural spatial types underlines the need to differentiate and analyze the various components of migratory movements. It underpins the positive balance for all types of regions (predominantly urban regions, interim regions, rural regions close to cities, peripheral rural regions) for the international migration and presents a divergent picture for the internal migration. Here predominantly urban and the interim regions which are the regions within the influence space of main cities show a positive (internal) migration balance. All rural areas are characterized by a negative development, in the case of the peripheral rural regions, by a significant negative development. With regard to the impact on overall development of population this means that international migration has to compensate the internal population losses in most peripheral rural regions (Figure 3).

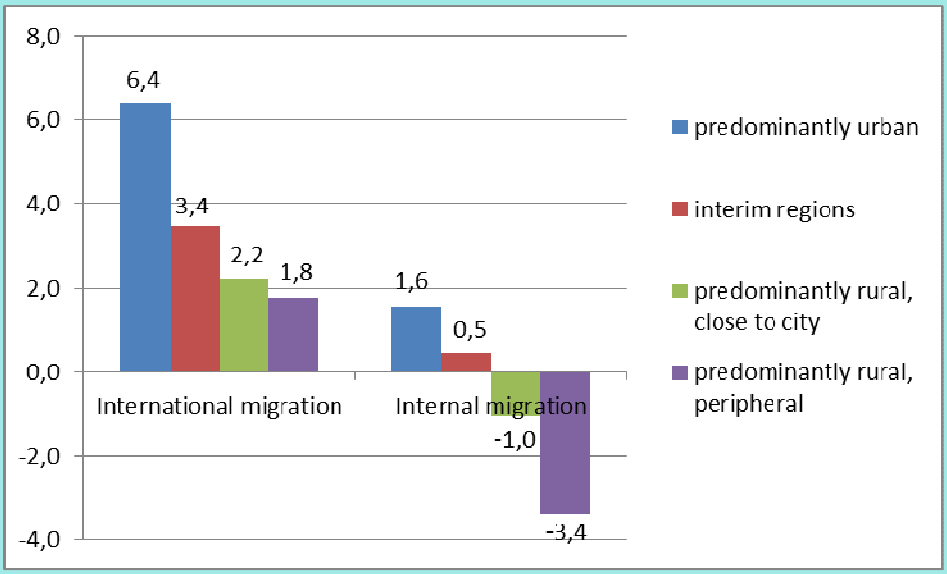


Figure 3: Migration balances in 1.000 persons, 2002-2012 (p.a.). Source: Machold et al. (2013), p. 148; update by BABF

**An enhanced focus on shaping regional integration processes**

Factors for improved (social) integration processes of new-entrants have to be investigated at local level. Through the analysis of two-small-scale regions with high incidence of migrants and emerging positive experiences of integration initiatives the above mentioned study aimed at assessing views and perspectives of migrants and inhabitants of rural communities. One of the study areas was in Lower Austria and the other one in Vorarlberg, both situated within the Austrian Alps. Through qualitative interviews (with 61 respondents) interesting approaches and a set of general preconditions for community action to support integration processes were elaborated. These should in particular take into account:

- To engage in pro-active initiatives in order to establish "welcoming communities" for new-entrants (Depner and Teixeira, 2012),
- To address not just economic and employment issues, but to develop also appropriate supply schemes for housing facilities in rural areas,
- To take account of cultural diversity and attach high priority and commitment to language skills development (for all age groups),
- To establish "open access" through the provision of "meeting places" (physically and mentally) within and across different social groups.

These exemplary experiences of local migrants underpin the widespread impressions about persistent failures in tackling these development needs and highlight the different living spheres within the communities. Quite often it seems there are still huge barriers in place (which we termed "barriers in mind-sets") that prevent integration of different population groups in rural communities. The challenges include significant spatial/regional dimensions that are increasingly addressed in the discussion of regional policy as well.

The Austrian Conference on Spatial Planning provided a framework through its thematic "Partnership" activities to discuss and elaborate appropriate region-specific approaches and good-practice that take

account of spatial specificities for integration processes (OREK Partnerschaft, 2014). This discussion showed that more and more initiatives engage in harnessing opportunities and are focused towards new development potentials that is made available by current migration patterns (Dayton-Johnson et al., 2007) (instead of taking a problem-oriented perspective). While the basic features of such an altered perspective are widely accepted in research, its implications for regional action are only partly clear. The rising number of "integration" examples gives evidence of the local interest in improving the situation at that level, but implementation in programmes remains tedious. Nevertheless local support, like action through the Leader and Community-Led Local Development (CLLD) programmes, Local Agenda 21 groups and numerous other thematic community networks within the Alps, might serve as springboards for reflexive action and coordination of relevant activities.

The shift in migration movements and the need for integration activities call for the extension of the debate also to rural and mountain areas. Such a re-orientation implies a new definition of the role of migration contributing to enhance the attractiveness of regions as living and working environment. The Alpine regions (Corrado, 2013) seem to present an attractive social and economic environment with increased immigration trajectories and development opportunities that should be appreciated and acknowledged by creative local and regional policies.

## NATIONAL CONTRIBUTIONS

### AUSTRIA

The Austrian National Contribution will be integrated in the REV1 version.

### FRANCE

As in the rest of France, fertility is high (fertility index is over 2), birth rate and mortality rates are both a little higher than the national level. Life expectancy is similar to the national ones: around 85 years at birth for the women, and 79 for the men; around 23 years at 65 for the men, and 27 for the women.

Most of the arrivals in the French Alps come from the rest of France. They are explained by several different mechanisms. Part of the arrivals concern people that work (or intend to work) in the main cities that lie just outside the territory (Geneva, Nice…). Very often, they lived previously in these cities, and move to the country to live in larger individual homes, with a garden, in suburban surroundings. This usually concerns families with children, which explains the positive index of migration of 0-14 years old. These are short distance migrations.

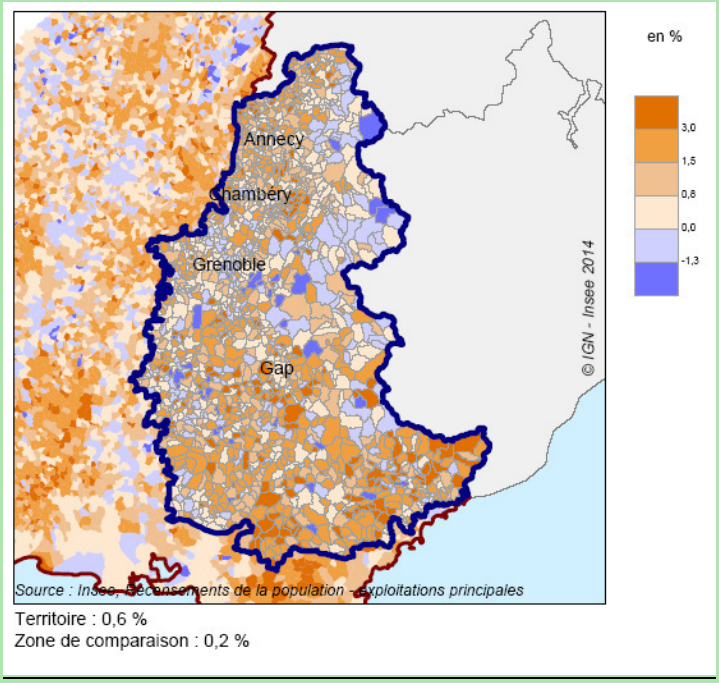


Figure 1: net migration 1999 – 2010.

The other part of the demographic attractiveness comes from a dynamic economy that attracts people looking for work. They come from longer distances, predominantly from the north of France and the Paris region. All active ages are concerned, including 24-29 years old: jobs in the touristic economy often concern young people (sport, cultural and social animation).

Arrivals are also determined by the general attractive environment of the Alps (landscape, scenery,

weather…). These arrivals concern people that are retired or close to retirement (over 55 years old).

The only age strata which has more departures than arrivals is the [15-24] years old strata: these young people are attracted by large cities, either looking for employment or for tertiary studies. The only large academic town in the area is Grenoble, which has a positive migration index for [20-29] years old. The rest of the territory sees its youth leave for the big academic cities of France and Europe.

### GERMANY

The German Alps from 2005 to 2009 experienced a migration balance at +2.8 per 1,000 inhabitants per year, while Bavaria has shown a ratio of +2,2‰ and the whole Germany +0,2‰. The largest migration loss of German nationals from Bavaria in 2009 was with Switzerland (-2,024) and Austria (-1,433). So far, the losses from emigration have been numerically compensated by the immigration from other parts of Germany – albeit with a downward trend. For 2009 Bavaria's migration balance was as follows: emigration abroad of 6,978 German nationals against immigration of 14,073 German nationals from the rest of Germany. The migration gain per 1,000 inhabitants in the German Alpine region between 1972 and 2009 generally was significantly higher than in Bavaria or Germany.

In order to describe the population balance for the German Alps and to make possible the comparison with the other alpine countries, three main indicators have been analysed both at LAU2 – municipal – and NUTS 3 – district - level: the natural change, the crude birth rate and the crude death rate.

In absolute terms, the German Alps have seen a negative natural change for the year 2012, with a negative difference of -3,306 between births and deaths. At an overall level, in Bavaria, this negative natural change has been compensated by the positive migration balance (Bayerisches Staatsministerium für Arbeit und Sozialordnung, Familie und Frauen, 2011); nevertheless, for the German alpine areas, it is not possible to draw analogous conclusions, due to the lack, for the current report, of dynamic data on migration.

The crude birth rate (the incidence of births on the total population) in the German Alps is, with a value of 8.2, lower than the general alpine average of 8.8, while the crude death rate (the incidence of deaths on the overall population) is, with a value of 10.2, higher than the average alpine rate (8.6). These data reflect the higher incidence of elderly population in the German Alps, compared with the overall alpine area; this factor, combined with other ones such as the prolongation of the life expectancy, plays an important role in the determination of the German alpine values of crude birth and death rate. A comparison with the data for the overall Bavarian state confirms this picture: Alpine German areas display, in fact, slightly lower values for the crude birth rate and slightly higher ones for the crude death rate than the average values for Bavaria (which are, respectively, 8.55 and 10.02).

By analysing the data at district level, it emerges how all the districts have had a negative natural change in the year 2012, with the exception of the urban district of Rosenheim, which has seen a positive balance of 38 births. Among all the districts (excluding the urban ones), the higher crude death rate, combined with the lowest crude birth rate is registered in the district of Garmisch – Partenkirchen, which is also the alpine district showing the higher rate of elderly people on the total of inhabitants.

As for what concerns the analysis of the three population balance indicators for the municipalities, a complex picture, with no clear patterns, emerges. In this respect, the situation in the German alpine municipalities is similar to the one pictured in the other Alpine ones, and appears extremely fragmented according to the local conditions at municipality level.

In conclusion, the picture provided by the indicators analysed shows a situation in which the alpine German

areas, also due to their higher share of elderly population, see, at an average level, a higher incidence of deaths and a lower incidence of births than the overall German (and, to a lesser extent, Bavarian) ones. Nevertheless, the complex picture at municipal level shows that the ageing factor, although relevant, is not the only driver of natural changes in the population. Therefore, the drivers have to be searched also in local and context – specific factors of the single municipalities and areas.

### ITALY

Municipalities that increase for natural and migratory component are located along the highway (A22) while those who increase for only migratory component are located above all in the province of Torino. Positive balance of migration flows from abroad have been recorded almost everywhere especially in the eastern part and in Liguria, particularly in lowland areas and along the arterial roads (Dolomiti National and Regional Parks, Belluno and Friuli-Venezia Giulia).

The measure of the population change allows us to study separately the different components that determine a population increase or decrease.

Most municipalities show a steady natural change or a negative one. In 2012 only 29.6 per cent of municipalities registered a positive natural change. Considering the whole Italian Alpine area the natural change per 1,000 residents is -1.7 comparing to the Italian average of 1.3. The situation becomes more critical considering some municipalities in Piemonte (Alpine municipalities in the provinces of Cuneo, Vercelli, Verbano-Cusio-Ossola and Torino), Friuli-Venezia Giulia (Alpine municipalities in the province of Udine with an average of -6.5) and Liguria (Alpine municipalities in the province of Imperia with an average of -7.8). The municipalities of Valloriate, Roaschia and Rittana show a natural change particularly negative (more than -60 per 1,000).

On the opposite side, with a positive natural change, we found the Alpine municipalities of the two autonomous provinces of Trentino-Alto Adige (2.4 for Bolzano and 0.9 for Trento). Considering the single municipalities the highest positive change (more than 20 per 1,000) is observed in Roascio (province of Cuneo), Pedesina (province of Sondrio), Morterone (province of Lecco) and Claviere (province of Torino).

The crude birth rate (per 1,000 residents) in the Alpine area is 8.8, perfectly coherent with the one observed at Italian national level (9.0 per 1,000). The main valley floors are particularly attracting for younger population; on the contrary, remote valleys and regions at higher altitudes are characterised by a low birth rate because young people are leaving these areas.

Considering as a whole the Alpine municipalities in the provinces of Bolzano, Trento, Aosta, Verona and Bergamo show the highest values (more than the average). Obviously the relation between this indicator and the natural change is very strong and we find, among the municipalities with the highest values, the situation of some municipalities already discussed. It's the case of Roascio (province of Cuneo), Pedesina (province of Sondrio) and Morterone (province of Lecco).

However it is worrisome that most of the municipalities show crude birth rates below the national average value. In particular, the municipalities in the province of Imperia and Udine registered a very low crude birth rate (6.8 per 1,000 residents). In 127 Alpine municipalities no births occurred in the year 2012. Most of them are located in Piemonte, in the provinces of Cuneo, Vercelli, Verbano-Cusio-Ossola and Torino.

It is also interesting to compare this situation with the one observed ten years before. Between 2002 and 2012 slight increases were registered in the Alpine municipalities that compose the provinces of Imperia, Pordenone and Cuneo. An increasing trend is observed in the Alpine municipalities that compose the

provinces of Novara, Treviso and Bergamo.

The crude death rate (per 1,000 residents) in the Alpine area is 10.5, value that substantially equals the Italian average one of 10.3. Observing the geography of this indicator compared to the birth rate it issues an almost opposite situation. Particularly high values of crude death rate were registered in the Alpine municipalities that belong to the provinces of Vercelli, Biella, Udine and, mostly, Imperia. This last province is well known as one of the most "aged" areas of Italy. Once again the Alpine area most interested by this critical situation is the one of Piemonte (Alpine municipalities in the provinces of Cuneo, Vercelli, Verbano-Cusio-Ossola and Torino). Rittana, Raschia and Valloriate (in province of Cuneo) show incredibly high levels of this rate (more than 60 per 1,000).

The leaving-areas are facing both low birth rates and high death rates due to the changes in the structure of population, wich displays increasingly higher shares of elderly.

On the opposite side the Alpine municipalities that belong to the province of Bolzano, Trento and Lecco show the lowest level of death rate. This means that presumably young families are moving to more attractive Alpine locations.

In order to better analyze the level of natural dynamicity of the Italian Alpine area another indicator seems to be particularly interesting to consider: the total fertility rate (per 1,000 women.

Unfortunately these data are not available at LAU-2 level but only at NUTS-3. However some findings already discussed seem to be here confirmed. The strengthening of migratory phenomena in the last decade and the higher rate of fertility of migrants, combined with the age-structure of the migrant population, determined a slight increase in the total fertility rate. This indicator at Italian level is 1.42. the Alpine situation is similar to the national scenarios. Among the provinces that contain one or more Alpine municipalities the highest level of this indicator is observed in Bolzano (1.67), Trento (1.60), Bergamo (1.58) and Aosta (1.57). The last of the ranking are Biella (1.31), Verbano-Cusio-Ossola (1.34) and Imperia (1.34). These last areas we have already found analysing also the previous indicators concerning low levels of birth rate and high levels of death rate.

At a national level life expectancy at birth of women, in 2012, was 84.4 years, while for men was 79.6 years.

Analyzing data at NUTS-3 level, as this indicator is not calculated for Italy at LAU-2 level, we can stress that, generally, it has a higher life expectancy for men in the Eastern Italy than in the Western provinces. An exception is Gorizia in Friuli Venezia-Giulia, one of the provinces to the East of Italy where life expectancy is low (78.9 years) .

Lowest levels of life expectancy at birth are in Sondrio and Verbano-Cusio-Ossola (78.7 years), Belluno (79.0). Highest levels are Trento and Lecco (80.8 years), Treviso (80.7 years).

In reference to the female life expectancy we note the same geographical distribution, where in the West there is a lowest life expectancy at birth, in particular in Biella, Savona and Cuneo (84.1 years).

Highest levels of this indicator are almost all located in the Eastern Italy: Como (85.7 years), Treviso and Trento (85.9 years).

If we analyze the data from the last twelve years (2000-2012) we note that the Italian province of the Alps, where he was the biggest increase in terms of male life expectancy is Bergamo (+4.4 years), while the lowest is Udine (+3.0). For female the biggest increase is in Lecco (+2.8) and the lowest in Sondrio (+1.2).

Life expectancy at 65 years (or average life span) is a statistical index used to measure the average number of years of life remaining for a person (male/female) who is 65 years old. At a national level life expectancy at birth of women, in 2012, was 21.8 years, while for men was 18.3 years. As for life expectancy at birth, life expectancy at 65 years has a remarkable gender difference in favour of women.

Analyzing Alps provinces we notice that lowest levels of this indicator are located in the Western Italy expect for the province of Sondrio, in Lombardia, (18.2 years). The male highest levels are concentrated, especially, in the East: Trento (19.3 years), Bolzano (19.2 years), Treviso (19.1 years) and the Central province of Lecco (19.0 years). For male there aren't big differences between the maximum and the minimum of the Alpine provinces. Concerning female levels of life expectancy at 65 years the lowest value are: Savona and Cuneo (21.7 years), Bergamo (21.8); the highest are in Trento (23.1 years), Treviso (23.0 years) and Pordenone (22.9 years).Differences between 2000 and 2012 data for male are maximum in Lecco (+2.8 years) and minimum in Savona (+1.4 years). The increase of female differences are smaller than the male ones, the maximum is in Biella (2.2 years).

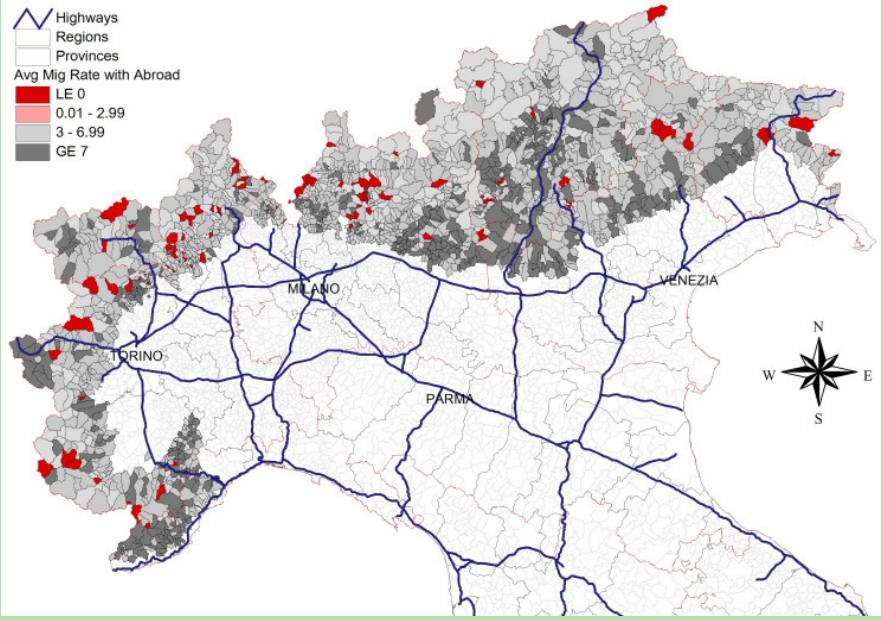


Figure 2: Italian alpine municipalities by Average Annual Migration Rate with Abroad. Years 2004-2011

Positive balance of migration flows from abroad have been recorded almost everywhere especially in the eastern part and in Liguria, particularly in lowland areas and along the arterial roads (Dolomiti National and Regional Parks Belluno & F-V.G.).

## SLOVENIA

| Indicators Year 2012 | Slovenia | Total area AC | Whole LAU in AC area | Part of LAU2 in AC area |
|---|---|---|---|---|
| Natural change (absolute values) | 2.681 | 848 | 251 | 597 |
| Natural change (per 1000) | 1.3 | 1.3 | 0.9 | 1.6 |
| Crude birth rate (per 1000) | 10,7 | 10,6 | 10,1 | 10.8 |
| Crude death rate (per 1000) | 9.4 | 9.4 | 9.3 | 9.2 |

Table 1: Main indicators of population demographic balance, for the Alpine area and the whole national territory, Year 2012. Source: Statistical Office of the Republic of Slovenia

In 2012, natural change in Slovenia was positive for the seventh year in a row. In that year, there were 2,681 more births than deaths. Natural change amounted to 1.3 per 1000 residents, which means that for every 1000 residents, there was a little over one birth more than there were deaths. In 2012, there were on average 1.58 live births per woman in Slovenia.

In the municipalities of the Alpine Convention, the population increased by 848 residents through natural change in 2012. Natural change per 1000 residents was the same as the overall population growth in Slovenia and amounted to 1.3 residents per 1000 residents.

A detailed inspection shows that in 2012, the natural change in municipalities of the Alpine Convention area was very diverse. More than half, i.e. 63% of municipalities of the Alpine Convention, registered a positive natural change. In 32 municipalities (51.6%) of the Alpine Convention, the registered natural change was higher than the overall population growth in Slovenia. The highest was registered in the municipality of Gorenja vas – Poljane, with 9.7 residents per thousand residents. Among all the municipalities of the Alpine Convention, this municipality registered the lowest ageing index (67.5) in early 2013, followed by the municipalities of Logatec (a municipality partially located in the Alpine Convention area) with a natural change of 6.6 residents per thousand residents, Ajdovščina (a municipality partially located in the Alpine Convention area) with 6.2, and Mozirje (6.1).

Most municipalities which recorded a positive natural change in 2012 are located on the outskirts of the Alpine Convention area, namely in the area of the Sava plains (Kranj - Jesenice). Almost all municipalities (15 out of 17 municipalities) that are partially located in the Alpine Convention area registered a positive natural change.

In the remaining twenty-three (23) out of sixty-two (62) municipalities, i.e. 37.1% of the municipalities of the Alpine Convention, a natural population decrease was recorded in 2012, meaning that the number of deaths exceeded the number of births in the municipality population. Most of these municipalities are also characterized by a negative age structure of the population; more than half of these municipalities have registered a negative average growth rate, i.e. depopulation, over the last decade (2003–2013). In 2012, the most negative natural change was recorded in the municipality of Gornji Grad, where 14 more residents died than there were born for every 1000 residents.

| *Year 2012* | *Number of births* | *Crude birth rate (per 1000 residents)* |
|---|---|---|
| *Slovenia* | *21938* | *10,7* |
| *Total AC Area* | *7058* | *10,6* |
| *whole LAU2 in AC area* | *2975* | *10,1* |
| *part of LAU2 in AC area* | *4083* | *10,8* |

Table 2: Crude birth rate (per 1000 residents). Source: Statistical Office of the Republic of Slovenia

In Slovenia the fertility rate has been decreasing for decades. It has been declining particularly sharply since 1980. The lowest number of live births was registered in 2013 (17.321), after which the number of births started to rise slightly again. In 2012, 21.938 living children births were registered in Slovenia. In that year, the value of the crude birth rate, which indicates how many children per 1000 residents were born, was

10.7. Approximately the same value was also registered in all municipalities of the Alpine Convention in 2012, where there were 7058 live births, i.e. 10.6 children, per 1000 residents. 28 out of 62 municipalities of the Alpine Convention, i.e. 45.9%, registered birth rates that were higher than the overall rate of Slovenia. The birth rate was the highest in the municipality of Solčava, where on average 17.4 children were born per 1000 residents, followed by the municipality of Gorenja vas with 15.9 children per 1000 residents, Mozirje with 14.4 and Ajdovščina (a municipality partially located in the Alpine Convention area) with 14.3 children per one thousand residents. The lowest birth rate in the Alpine Convention area was registered in 2012 in the municipality of Ribnica na Pohorju (5.8 children born per 1000 residents), followed by the municipalities of Kranjska Gora (6.2), Lovrenc na Pohorju (7) and Ruše (7.2). All of these municipalities also registered a negative natural change.

Most municipalities in the Alpine Convention area (39 out of 62 municipalities, i.e. 63% of municipalities) registered birth rates between 10.0 to 15.0 children born per 1,000 residents. Most of these municipalities (79.5%) registered a positive natural change. Most municipalities (71.4%) that registered birth rates between 5.01 and 10.00 children born per thousand residents – such municipalities represented 33.9% (21 out of 62 municipalities) – registered a negative natural change.

| *Year 2012* | *Number of death (absolute values)* | *Crude death rate (per 1000 residents)* |
|---|---|---|
| *Slovenia* | *19257* | *9,4* |
| *Total area AC* | *6210* | *9,4* |
| *Part of LAU in AC area* | *3486* | *9,2* |
| *Whole LAU in AC area* | *2724* | *9,3* |

Table 3: Crude death rate (per 1000 residents) Source: Statistical Office of the Republic of Slovenia

While in Slovenia the number of births is declining, the number of deaths has not changed significantly in recent decades. The number of deaths per year in the given period ranges from 17,000 to 19,000.

In 2012, 19,257 residents died in Slovenia. The mortality rate reached 9.4 per 1000 residents.

In the area of the municipalities of the Alpine Convention, the mortality rate per thousand residents (crude death rate per 1000) in 2012 was the same as the overall mortality rate of Slovenia: 9.4. In 2012, mortality rates registered in individual municipalities of the Alpine Convention ranged from the highest mortality rate in the municipality of Gornji Grad (27.0) to the lowest in the municipality of Oplotnica (5.7).

In 2012, 25 out of 62 municipalities of the Alpine Convention, i.e. 41%, registered a mortality rate that was higher than the overall mortality rate of Slovenia.

In 2012, a major proportion of municipalities of the Alpine Convention (69.4%) in Slovenia registered a mortality rate in the range of 5.01 to 10.00 deaths per 1000 residents. 27.4% of municipalities of the Alpine Convention registered a mortality rate in the range of 10.01 to 15.00 deaths per thousand residents. These municipalities are mostly located in the western and northeastern part of the Alpine Convention area. In 2012, a mortality rate above 15.1 deaths per thousand residents was registered in only two municipalities.

In 2012, the total population change in Slovenia – natural change and net migration together – amounted to 1.6 residents per 1000 residents, i.e. a total of 3325 residents.

In Slovenia, somewhat more than half of all municipalities (123) registered a negative overall net migration,

which was in most cases a result of negative net migration between municipalities. On the other hand, 87 Slovenian municipalities registered a positive overall net migration in 2012, which means that more residents immigrated to a given municipality than emigrated from it.

In 2012, 61.3% of municipalities (38 out of 62 municipalities) in the Alpine Convention area registered an overall population decline.

The reason for the negative total population change lies mainly in the emigration of the population, i.e. negative net migration, together with low or negative natural change. The highest negative total population change was registered in the municipality of Črna na Koroškem (–15.4 residents per 1000 residents), followed by the municipalities of Podvelka (–12.4 residents per 1000 residents ) and Vitanje (–12.3 residents per 1000 residents).

On the other hand, 24 out of 62 municipalities (38.7%) in the Alpine Convention area registered a positive total population change. Most of these municipalities registered a positive natural change as well as positive net migration. The highest total population change was registered in the municipality of Hoče-Slivnica with 22.4 residents per 1000 residents, followed by Logatec (20), Rače-Fram (17) and Medvode (14.5). All of the above municipalities are located on the outskirts of the Alpine Convention perimeter, with only a small part of their territory included in it.

In 212, the overall net migration (i.e. the sum of net (internal) migration between municipalities and net migration from abroad) was negative in 67.2% of municipalities (in 41 out of 62 municipalities). The highest decline in migration was registered in the following municipalities: Gorje (–13.6 residents per 1000 residents), Črna na Koroškem (–12.6 residents per 1000 residents), and Vitanje (–11.9 residents per 1000 residents).

In 2012, a positive overall net migration was registered in 34.4% of municipalities, i.e. 21 out of 62 municipalities. The highest level was in the municipality of Hoče-Slivnica (19.6 residents per 1000 residents), followed by the municipalities of Logatec (13.4 residents per 1000 residents) and Rače-Fram (12.9 residents per 1000 residents). All of the above municipalities are located on the outskirts of the Alpine Convention perimeter, with only a small part of their territory included in it.

| *Year 2012* | *Total resident population (absolute values)* | *Priseljeni iz tujine - Skupaj* | *Odseljeni v tujino - Skupaj* | *Selitveni prirast s tujino - Skupaj* | *Priseljeni iz tujine na 1000 prebivalcev* | *Odseljeni v tujino na 1000 prebivalcev* | *Selitveni prirast s tujino na 1000 prebivalcev* |
|---|---|---|---|---|---|---|---|
| *Slovenia* | *2058821* | *15022* | *14378* | *644* | *7,3* | *7* | *0,3* |
| *Total AC area* | *663739* | *4507* | *4242* | *265* | *6,8* | *6,4* | *0,4* |
| *Part of LAU2 in AC area* | *379668* | *3131* | *2900* | *231* | *8,2* | *7,6* | *0,6* |
| *Whole LAU2 in AC area* | *284071* | *1376* | *1342* | *34* | *4,8* | *4,7* | *0,1* |

Table 4: International net migration.

In addition to natural change, changes in the population number are also affected by international migration. For 50 years now (with the exception of a few individual years – 1991, 1992 and 1998), Slovenia has been considered a country of immigration. Although until 1993 the number of residents has been increasing primarily as a result of natural change, in the last years the number of residents in Slovenia is said to have

been increasing primarily due to net migration from abroad. The number of immigrants in Slovenia strongly exceeded the number of people who emigrated from the country in the first years after Slovenia joined the European Union (between 2005–2009). In 2010, this trend was reversed. However, already the following year net migration from abroad was positive again.

In 2012, 15,022 people immigrated to Slovenia, while 14,378 people emigrated, which means that the net migration from abroad amounted to 0.3 residents per 1000 residents.

In 2012, 4507 people immigrated to the total Alpine Convention area (i.e. 6.8 foreigners per 1000 residents), which accounts for 30.0% of all immigrants in Slovenia in that year. Most immigrants (69.4%) moved to municipalities that are only partially located in the Alpine Convention area. In terms of total numbers, most immigrants from abroad immigrated in municipalities with larger urban centres: Maribor (1189), Kranj (496), Nova Gorica (268), Kamnik (195) and Jesenice (160). Relative to municipality populations, the highest numbers of immigrants from abroad moved to the municipality of Nazarje (12.3 foreigners per 1000 residents), followed by Maribor (10.7 foreigners per 1000 residents) and Bovec (9.7 foreigners per 1000 residents).

In 2012, 4,242 people emigrated from the Alpine Convention area, which is 29.5% of all people that emigrated from Slovenia in that year. Most of the people that emigrated from the Alpine Convention area, i.e. 68.3%, emigrated from municipalities that are only partially located in the Alpine Convention area. In terms of total numbers, in 2012 most people emigrated abroad from municipalities with larger urban centres: Maribor (1234), Kranj (409), Nova Gorica (241) and Jesenice (248).

Relative to the populations of individual municipalities of the Alpine Convention, the highest numbers of people emigrated from the following municipalities: Jesenice (11.6 emigrants per 1000 residents), Maribor (11.1 emigrants per 1000 residents) and Kranjska Gora (8.1 emigrants per 1000 residents).

In 2012, the overall net migration from abroad, which shows the difference between immigration from abroad and emigration abroad, in the total Alpine Convention area was positive and amounted to 0.4 residents per 1000 residents, i.e. a total of 265 persons. The overall net migration from abroad was slightly higher in municipalities that are partially located in the Alpine Convention area (0.6 residents per 1000 residents) and slightly lower in municipalities that are located entirely in the Alpine Convention area (0.1 residents per 1000 residents).

### SWITZERLAND

In order to describe the population balance for Switzerland and to make possible a comparison with the other alpine countries, three main indicators concerning the population balance have been analysed both at LAU2 – municipal – and NUTS 3 – cantonal - level: the natural change, the crude birth rate and the crude death rate.

At an overall level, the number of births in Switzerland has increased of approximately 5% from year 2009 to year 2012. The phenomenon is characterized by a tendency observable also at European and Alpine level, namely the fact that the average age in which women give birth is increasing (from 31.2 years in 2009 to 31.5 in 2012) (FSO, 2014). The average number of kids per woman in Switzerland has increased from the year 2009 and is now 1.53.

As for what concerns the alpine Swiss municipalities, the general tendency points out to a positive or stagnating natural change, with 61% of the alpine municipalities having recorded in year 2011 more births than deaths, and with a positive overall surplus, in absolute terms, of 1,777 births (average of 2.35 births for

municipality). All in all, at the municipal level, the phenomenon of natural change in the alpine areas of Switzerland, as in the other alpine countries, appears fragmented and presents no clear pattern, except a slight predominance of a positive natural change close to urban areas.

An analysis at cantonal level, which sums all the births and deaths for the overall Cantons in year 2012, shows a positive natural change in almost all the alpine Cantons, except Glarus (which has a only slightly negative difference of -2 between births and deaths), Graubünden (-58) and Ticino (-159). For the Cantons located only partially in the perimeter of the Alpine Convention, just Bern has a negative natural change (-279), while the others all display positive values.

Regarding the crude birth and death rate, namely the number of births and deaths each 1,000 inhabitants, the alpine Swiss areas show a lower average crude birth rate (9.35) than the average Swiss one (10.22), while the average crude death rate (8.43) is higher than the overall Swiss one (7.98). The reasons for the lower crude birth rates and higher crude death rates at Alpine Swiss level are not straightforwardly interpretable and an analysis of these two indicators at municipal gives a complex picture, with no clear patterns emerging. In this respect, the situation in the Swiss alpine municipalities is similar to the one pictured in the other Alpine ones, and appears fragmented according to the local conditions. Although these indicators are usually associated to other demographic features, such as the incidence of women on the total population, the overall differences regarding the incidence of women between Switzerland and the Alpine Swiss areas are not so relevant as to fully explain the phenomenon. One possible reason is represented by the higher incidence of elderly population on the total population displayed by the alpine Swiss areas. This factor would also explain the higher incidence of the crude death rate in the Alpine Swiss municipalities.

An aggregate analysis at cantonal level provides a clearer picture: in the Alpine Cantons that have an overall higher rate of elderly population, lower birth rates and higher death rates can be observed. For example, in the Canton Ticino, which has the overall highest share of elderly population on the total among the Alpine Cantons (21.04), the lowest crude birth rate is recorded (8.31). The highest crude birth rate in the alpine Cantons is present in the Canton Vaud (11.18), partially located in the Alpine Convention perimeter, which is also one of the alpine Swiss Cantons with the lowest share of elderly population (16.03).

In conclusion, the picture provided by the analysis of the indicators shows a situation in which the alpine Swiss areas, also due to their higher shares of elderly population, see, at an average level, a lower incidence of births and a higher incidence of deaths in comparison with the overall Swiss rates. Nevertheless, the complex picture at municipal level shows that the ageing factor, although relevant, is not the only driver of changes in the population consistency: besides the general demographic factors, other drivers have to be searched also in the local and context – specific situation of the single administrative units.

## STUDY ON IMMIGRATION TO AND EMIGRATION FROM THE ALPS WITH RESPECT TO THE 'NEW HIGHLANDERS'

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### Issues and key questions

Currently, after a long period of emigration from predominantly rural Alpine regions, we can observe a trend reversal fittingly described as 'new immigration'. Studying this phenomenon has become a high priority, as emphasized by the working group Demography and Employment of the Alpine Conference, and has been pursued intensively in the Romance-speaking Alpine countries (see Bender& Kanitscheider 2012 with further references). Yet large parts of the northern Alps, roughly from Grenoble to Salzburg, have experienced dynamic population growth for many decades with high in-migration (cf. Bätzing 2003). Even so the question remains in how far the 'new highlanders' arriving there may be seen as part of a pan-Alpine trend or whether other processes of socio-demographic population development are at work in terms of the types of in-migrants, the migration motives and distances as well as the volume of immigration.

The study seeks best possible answers to the following key questions:

- How strong is the immigration, where are its origins and does it compensate for the emigration?
- Who are the in- and out-migrants or how can they be classified into types? What kinds of impact on the local population structure result from migration?
- What are the national and regional differences in in- and out-migration?

The results from the Alpine areas and municipalities should provide indications for better managing the risks and opportunities of immigration.

### Data basis

Census data have hitherto allowed calculating a migration balance for a particular territorial unit from the population figures and the number of births and deaths, usually without any further indications of the spatial mobility of the population. Around the turn of the new millennium, central registration of residents was introduced which now captures migration at municipality level by geographic origin and destination (place and country) as well as by socio-demographic traits (gender, age, nationality and sometimes also birthplace) of the people on the move.

Such data were provided for this ongoing study by the national statistics authorities in Germany, Austria, Italy and Slovenia via (sometimes paid-for) special analysis. In France and Switzerland no central registration of residents seems to exist, migration is dealt with in the census by means of asking for the residence at an earlier point in time (in France: residence five years ago). This method fails to capture potential additional moves between that point in time and the census date so that the migration volume derived from these data is slightly underestimated compared with that of the other countries (Tab. 1).

### Initial results from a comparison of Alpine countries – and some hypotheses derived from them

Below I summarize initial results of the study, focusing on the differences between the Alpine countries. So far, data have been provided by Austria, France, Germany, Italy and Slovenia[9].

It must be emphasized, that only migration across municipal boundaries was analysed and the results aggregated to larger territorial units.

Tab. 1 shows in- and out-migration as a proportion of the number of residents. In terms of numbers alone, the whole population would have been exchanged through migration over 20 years; only in Italy it would need about ten years longer. From the countries which provided us with data from extra-Alpine areas as well (Austria, Germany, Slovenia) we know that this exchange would proceed slightly more slowly in the Alps (except for Austria) than in the extra-Alpine lowlands, i.e. the rates of in- and out-migration are a bit lower here. In all countries investigated in this matter the total migration gain is also lower in inner-Alpine vs extra-Alpine areas, in Slovenia there is even a slight negative balance[10].

| | MIGRATION BALANCE | | | IN-MIGRATION TO | | | OUT-MIGRATION FROM | | |
|---|---|---|---|---|---|---|---|---|---|
| Total area of | Total | Alpine area | Extra-Alpine* | Total | Alpine area | Extra-Alpine | Total | Alpine area | Extra-Alpine* |
| Austria | 3.9 | 1.1 | 5.8 | 50.7 | 51.5 | 50.2 | 46.9 | 50.5 | 44.5 |
| *France* | *n.a.* | *n.a.* | *n.a.* | *n.p.* | *54.8* | *n.p.* | *n.a.* | *n.a.* | *n.a.* |
| Germany | 5.2 | 3.9 | 5.7 | 68.5 | 65.9 | 69.4 | 63.3 | 62.0 | 63.7 |
| Italy | n.p. | 7.0 | n.p. | n.p. | 36.0 | n.p. | n.p. | 29.0 | n.p. |
| Slovenia | 3.2 | -0.6 | 4.1 | 52.6 | 44.4 | 54.6 | 49.4 | 45.0 | 50.4 |

Tab. 1: Average annual changes (2002-11; F: 2003-08; SI 2008-12) in per mill of total population (1.1.2002; FR: 1.3.1999; SI: 1.1.2008): Alpine area compared with non-Alpine area of the same region[11].(n.a. = not available; n.p. = not provided).

Migration into the Alpine Convention areas of these countries is largely (78-93%) domestic and even from the national Alpine area (the latter except for Slovenia)–(Tab. 2). On closer inspection, about a third of the new residents in Austria and Germany (59% in Italy, 54% in France) come from nearby, i.e. from within the NUTS3 area of the destination municipality. These in-migrants can hardly be called 'new highlanders'.

There is less emigration abroad than immigration from abroad (except in Germany). This implies that the Alpine countries – and the Alpine areas within them (except for Slovenia and probably France[12]) – are regions

[9] Note the following problems: (1) In France out-migration to foreign countries is not captured; (2) the German data are approximated as migration of fewer than three people in any one municipality was not disclosed for reasons of data protection; (3) the Italian data on emigration may be underestimated, due to foreigners who go abroad without notifying their departure to the Population Register Office of the Municipality of residence; (4) in Slovenia all data of municipalities situated only partly within the Alpine Space were calculated in proportion to the share of the population within the Alpine Space.

[10] For France and Italy no data have been made available yet that would allow a comparison of inner- and extra-Alpine areas.

[11] Austria, Slovenia: region = whole country; Germany: region = NUTS-2 political districts of Oberbayern and Schwaben.

with migration gains that stem mainly from abroad.

| | IN-MIGRATION FROM | | | OUT-MIGRATION TO | | |
|---|---|---|---|---|---|---|
| Alpine area of .. | Inland Alpine area | Inland extra-Alpine area | Abroad | Inland Alpine area | Inland extra-Alpine area | Abroad |
| Austria | 59.4 | 18.2 | 22.3 | 60.7 | 21.8 | 17.5 |
| France | 54.9 | 38.0 | 7.1 | n.a. | n.a. | n.a. |
| Germany | 49.4 | 36.1 | 14.6 | 52.5 | 32.7 | 14.8 |
| Italy | 45.7 | 34.1 | 20.2 | 56.7 | 38.6 | 4.6 |
| Slovenia | 31.0 | 52.4 | 16.5 | 30.6 | 57.8 | 11.5 |

Tab. 2: Source and destination regions of immigration to and emigration from the Alpine areas in % of total immigration/emigration (2002-11; FR: 2003-08; SI: 2008-12).

Immigration from abroad is relatively strongest in the Austrian Alps (Tab. 2). A likely reason is the fact that two large immigrant groups, i.e. from Germany and from South-Eastern Europe (cf. Tab. 3b) are pushing onto the job market here. Domestic in-migration from a non-Alpine part of the country is highest in Slovenia (>50%).

In Italy immigration from abroad to the Alpine area stems mainly from South-Eastern Europe and Africa, in France from North-Western Europe and Switzerland as well as from Africa, in Germany the main source areas are Eastern and – to a smaller degree – South-Eastern Europe.

The size of the general in-migration also seems to correlate with the migration gains: if immigration from a country exceeds 1% of total immigration, it usually also means a positive balance (Tab. 3ab). Immigration from America and Germany especially result in comparatively large migration gains. In Italy this probably reflects a return of Italians. In the Austrian Alps immigration of Germans in search of a job is likely to play a major role, with the absence of a language barrier speeding up and facilitating the permanent integration of the new residents.

[12] In France out-migration to foreign countries is not captured.

| Immigration from / Migration balance with | Migration balance in Alpine areas of | | | | | Immigration to Alpine areas of | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | AT | FR | DE | IT | SI | AT | FR | DE | IT | SI |
| Austria | -154.5 | n.a. | -3.3 | -0.3 | n.a. | 77.7 | 0.0 | 2.2 | 0.1 | n.a. |
| France | 0.5 | n.a. | -0.2 | 0.1 | n.a. | 0.1 | 92.9 | 0.2 | 0.2 | n.a. |
| Germany | 101.6 | n.a. | 89.8 | 1.4 | n.a. | 5.6 | 0.3 | 85.4 | 0.7 | n.a. |
| Italy | 3.6 | n.a. | -2.4 | 15.3 | n.a. | 0.5 | 0.3 | 0.7 | 79.8 | n.a. |
| Liechtenstein | -0.8 | n.a. | 0.0 | 0.0 | n.a. | 0.0 | 0.0 | 0.0 | 0.0 | n.a. |
| Slovenia | 1.6 | n.a. | 0.0 | 0.1 | 15.6 | 0.2 | 0.0 | 0.1 | 0.0 | 79.5 |
| Switzerland | -6.7 | n.a. | -4.0 | -0.3 | n.a. | 0.3 | 1.3 | 0.3 | 0.4 | n.a. |
| NW-Europe | 6.9 | n.a. | -1.2 | 0.0 | n.a. | 1.0 | 1.3 | 0.5 | 0.4 | n.a. |
| S-Europe | 3.3 | n.a. | -1.5 | 0.0 | n.a. | 0.4 | 0.6 | 0.6 | 0.2 | n.a. |
| SE-Europe | 91.1 | n.a. | 7.5 | 33.0 | n.a. | 6.3 | 0.5 | 2.9 | 6.9 | n.a. |
| E-Europe | 49.4 | n.a. | 13.6 | 13.9 | n.a. | 2.4 | 0.3 | 4.6 | 3.0 | n.a. |
| Africa | 14.8 | n.a. | 0.5 | 17.1 | n.a. | 0.6 | 1.3 | 0.3 | 3.6 | n.a. |
| Asia-Oceania | 40.2 | n.a. | 0.5 | 10.8 | n.a. | 1.7 | 0.6 | 1.3 | 2.4 | n.a. |
| America | 4.1 | n.a. | 0.5 | 8.9 | n.a. | 0.9 | 0.7 | 1.0 | 2.2 | n.a. |
| unknown | -55.1 | n.a. | 0.1 | 0.0 | n.a. | 2.2 | 0.0 | 0.0 | 0.0 | n.a. |
| TOTAL | 100.0 | | 100.0 | 100.0 | | 100.0 | 100.0 | 100.0 | 100.0 | |

*Tab.3a (left column): Migration balance with different countries or groups of countries in % of total migration balance (2002-11; SI: 2008-12);*

*Tab.3b (right column): Share of immigrants from different countries or groups of countries in % of total immigration (2002-11; FR: 2003-08; SI: 2008-12).*

Lastly let's take a look at the demographic structure of the immigrants on the basis of the immigration figures and migration balances in relation to the local population in the same sociogeographic group (Tab. 4).

In terms of nationality, the respective immigration rates of foreigners clearly exceed those of inland nationals (with the exception of the French Alps). This results in highly positive balances for foreigners and only slightly positive (Germany, Italy) or even negative balances (Austria, Slovenia) for inland nationals. Generally more men than women immigrate to the Alpine areas, but the migration balance of men is lower than that of women (except in Slovenia and France), i.e. men seem to stay often for shorter periods.

Of the five age groups in the study, immigration is highest in the 15-29 years age group (i.e. mainly education and young work migrants), but their migration balance is comparatively low (with the exception of the Italian Alps). This is in a distinct contrast to the extra-Alpine areas (insofar as they could be investigated), which present the highest balances in this age group. Clearly the duration of residence at the new inner-

Alpine place of residence is short.

The largest migration balances across the Alps are found in the 30-49 years age group and in the group 0-14 years, i.e. in the migration of families (except for Italy: there it is largest in the 15-29 years age group). Migration gains in the 50+ age group are much smaller (Germany, Italy, France) or inexistent. This means that suburbanization of the Alpine rim and of the vicinity of inner-Alpine cities is even more blatant in demographic terms than the amenity migration of older people.

| Sociogeographic groups | Migration balance in Alpine areas of | | | | | Immigration to Alpine areas of | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | AT | FR | DE | IT | SI | AT | FR | DE | IT | SI |
| Total | 1.1 | *4.0* | 3.9 | 7.0 | -0.6 | 51.5 | 54.8 | 66.1 | 36.0 | 44.4 |
| Male | 0.8 | *4.1* | 3.8 | 6.8 | 0.6 | 53.2 | 55.3 | 68.2 | 36.6 | 48.6 |
| Female | 1.3 | *3.9* | 4.1 | 7.2 | -1.7 | 49.9 | 54.4 | 64.0 | 35.4 | 40.3 |
| Aged 0-14 | 3.8 | *4.3* | 4.6 | 6.7 | 1.5 | 47.3 | 40.8 | 49.7 | 38.2 | 35.5 |
| Aged 15-29 | 0.1 | *1.0* | 0.9 | 15.2 | -4.8 | 108.8 | 87.2 | 143.6 | 60.7 | 82.8 |
| Aged 30-49 | 1.6 | *6.8* | 5.4 | 7.3 | 0.3 | 53.2 | 69.3 | 74.3 | 47.2 | 50.4 |
| Aged 50-74 | 0.0 | *3.1* | 4.1 | 3.3 | 0.4 | 18.6 | 31.4 | 32.7 | 15.5 | 18.6 |
| Aged 75+ | -1.7 | *2.7* | 2.8 | 2.5 | -0.2 | 21.6 | 23.9 | 28.4 | 14.1 | 32.1 |
| Domestic nationals | -1.9 | *4.4* | 3.0 | 1.1 | -3.6 | 36.9 | 56.4 | 56.7 | 25.2 | 35.2 |
| Foreign nationals | 34.2 | *0.8* | 15.5 | 196.9 | 121.1 | 215.1 | 42.1 | 180.9 | 382.5 | 410.5 |

Tab. 4a (left column): Average annual migration balance (2002-11; FR: 2003-08, domestic migration only; SI: 2008-12) per mill resident population of the same group;

Tab. 4b (right column): Average annual immigration (2002-11; FR: 2003-08; SI: 2008-12) per thousand resident population of the same group.

At municipal level, however, a highly differentiated spatial pattern emerges. Below this pattern is presented for in-migration in Austria in the 50-74 years age group (further examples would exceed the scope of this report). This migration is by no means evenly distributed in relation to the local population, as one might expect from rural emigration followed by later return to the rural areas. Instead, clear spatial foci emerge that correlate with the classic tourist areas.

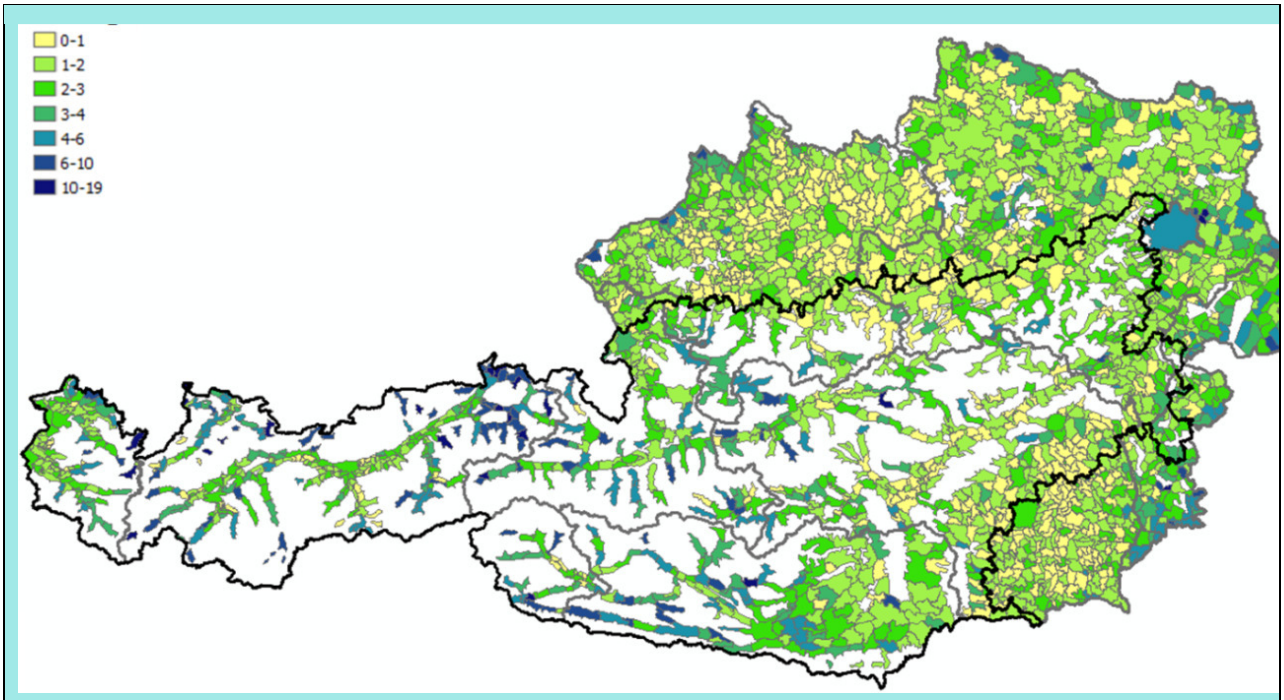



Fig. 1: Share of immigrants from abroad to Austria, aged 50-74 in % of total immigration (2002-11).

## Outlook

Indicators will be derived from the migration figures and calculated at municipality level. The visual interpretation of maps for the entire Alps will make spatial migration patterns clear down to the local level (cf. Fig. 1). Finally, correlation analyses using both migration and economic data (e.g. number of jobs in the three economic sectors) will point out certain types of migration destinations and thus help to interpret specific groups of migrants.

In order to arrive at a definitive attribution of the immigrants to the migration types created in the course of hypotheses formation (cf. Bender & Kanitscheider 2012: 236), additional information on the migration motives would be needed, which unfortunately are not being captured in official statistics. It would therefore be desirable to intersect sociodemographic variables (like gender, age, nationality and professional status) for each instance of migration. For reasons of data security most national statistical offices on principle do not make such detailed data available. Any statistical analysis will thus have to be backed up and fine-tuned with the help of qualitative studies in selected places.

## Acknowledgements

The author of the study acknowledges with thanks the generous support of the Working Group "Demography and Employment" of the Alpine Conference and especially the Italian Presidency. Without the concerted effort with regard to the 5th Report on the State of the Alps the comprehensive migration statistics from five Alpine countries would not have been made available. Special thanks are due to ISTAT (Rom), SI-STAT (Ljubljana) and INSEE (Grenoble) for providing their data for free, and to Statistik Austria (Vienna) as well as to the Bayrisches LfStaD (Munich) for providing data at a preferential rate.

GOOD PRACTICES

## Re-design Eisenerz – from competition to cooperation (Austria, Eisenerz)

Issues:

- projected demographic upswing of a depopulated area
- re-launching of the local/regional competitiveness
- increasing of the knowledge on the territorial dynamics and elaboration of a strategy for the development of the area and for the safeguard of the services

Type of measure:

- pilot action
- political measure

Funding: Province of Styria

Background: In the mining city Eisenerz the economy was dominated by ore mining for centuries. Due to industrial transformation (automation of production) in the 1970s the number of inhabitants has been continuously decreasing since then which led to a downward spiral on the housing market and the economic and social situation. 38% of Eisenerz`s population are older than 60 years, which makes Eisenerz the city with the highest average age in Austria.

Implementation:

- **Diagnosis:** In 2005 the "Wohnbund Steiermark" published the study "re-design Eisenerz", commissioned by the Province of Styria. The study dealt with aspects of the current and future housing situation in Eisenerz: About 800 residential units were unoccupied, spread over the whole city area.
- In 2006 an **exhibition** in Eisenerz in cooperation with the German Program "Schrumpfende Städte" raised awareness of media and decision-makers for the existing problems caused by population decrease. Possible solutions were shown.
- An **action-plan** for the municipality`s housing market until 2021 had been developed and an idea-competition "Eisenerz 2021" was carried through.
- **Establishment of a legal body**, where officials of the municipality and representatives of the housing companies made aligned decisions for the housing markets with a mixture of redevelopment, conversion and demolition. This transformed the situation of competition into a situation of cooperation between relevant actors on the housing market.
- **Networking and Communication**: Project "motivation Eisenerz": broad participation process with different groups: young people, entrepreneurs, …Establishment of new forms of communication.
- **Development of a broader vision for the future of Eisenerz**: Renovation of houses, revitalization of the historical part of the city, development of infrastructural measures, conversion of vacant flats into touristic apartments, initiate research and development in the area of renewable resources and recycling of metal (e.g. aluminum), strengthening the cultural program with introduction of a summer festival, strengthen and broaden the visitor program "Abenteuer Erzberg" .
- **Development of a RCD-Strategy** (redevelopment, conversion, demolition): to initiate positive impulses for the residential market: flats were demolished, rehabilitated and upgraded.
- **Private investors** have been **attracted** to invest into the city, e.g. a group of private investors are

realizing a holiday site with 500 flats.

- A **network of relevant local stakeholders** in the areas of politics, municipal administration, entrepreneurs, civil life and culture has been established, which turned out to be crucial for a change process.
- In 2012 a **music and art festival** was established ("Rostfest", www.rostfest.at) to present the change of the region`s image particularly to young people. Sociocultural formats turned out to be well suited to integrate different groups of the population into the process. The Rostfest brought new impulses to Eisenerz to use vacant houses and spaces ("urban campers"). The 2nd edition in 2013 included also a symposium "craft and art", in which innovative products and new perspectives for mining cities by linking craft, design and creativity were discussed.

Indicators:

- Number of residencies rehabilitated and upgraded
- Number of residencies converted for a different function (e.g. tourism)
- Number of households relocated from peripheral areas to the city centre

Transferability:
The festival "Rostfest" is a new annual format, in which art and culture are linked with repositioning of an old mining municipality. It can be used as a model for other shrinking cities.

Link: www.rostfest.at

### A "good living together" in Bressanone / Brixen (Italy, municipality of Bressanone/Brixen in the province of Bolzano/Bozen)

Issues:

- re-launching of the local/regional competitiveness
- demographic upswing of a depopulated area
- increasing of the knowledge on the territorial dynamics and elaboration of a strategy for the development of the area and for the safeguard of the services

Type of measure:

- pilot action (project: Questionnaire for the development of Guidelines for a good living together). Partners : EURAC/LP (European Academy of Bolzano/Bozen); Municipality of Brixen/Bressanone
- political measure (Municipality of Brixen/Bressanone)

Funding: 2.500,00 €
Background: The increasing diversification of cultures, languages and religions due migration challenges increasingly also the small rural towns of South Tyrol, which are characterized by the historical living together of the German and Italian speakers. Municipalities thus need to find new forms to guarantee a peaceful living together of this new and old diversity leading to a cohesive society. Those forms of living together aim at including the whole society.

Implementation:
The main aim of the project was to establish a common ground for future action in order to establish guidelines for a "good living together" in the municipality. Through a participatory process, including actors

of all groups present in the society, a questionnaire has been developed. The questionnaire wanted to find out what the population of the municipality firstly thought about diverse languages, cultures and religions and secondly how they wished to organize the integration of this diversity in the future.
Finally, a report of the questionnaire is given to the responsible persons in the municipality. Based on this report, guidelines for a "good living together" are developed.

Indicators:

- cohesive society;
- development of guidelines for a "good living together".

Transferability:

The project and the participatory process to create the questionnaire can be transferred to all municipalities, but also to larger territorial entities such as provinces or regions.

# 3. Employment and education

## 3.1 Employment and unemployment dynamics

Demography and the labour market are two areas that are closely interrelated and closely linked to the development of an area. There is a mutual influence between the two phenomena and it is not simple to determine to what extent one can be identified as the driving force of the other. For example, on the one hand, the impact of the age structure of the population on a higher or lower labour supply is evident. On the other hand, a high demand for labour forces can promote the changes in the age structure of the population in which the active classes are well represented. For example, a dynamic labour market can influence the demographic dynamics by playing the role of attraction pole for national and international migrants. These interactions exist also in the Alpine territory. Moreover, in the Alps, significantly different local peculiarities make the effects of the above mentioned interrelations become even stronger, drawing a very complex and differentiated picture at the micro territorial level.
The economic structure of the Alpine territory is influenced by the specific orography, where more accessible areas can generally count on a more vital economy and attract more investments. Generally, the lack of facilities and depopulation tend to be found in less accessible areas. On the contrary, the most accessible areas – usually located along a national road network in a valley – and their bordering regions often enjoy both demographic and economic growth. Though improving accessibility does not assure economic success of a mountain region – a much more complex concomitance of factors and conditions is interpreted as being able to trigger local development (Alpine Convention, 2007).
As how for demographic development, the economic development in the Alpine area is extremely heterogeneous and polarized. The symbiosis of tourism and services, industry, electric power generation, agriculture, transport and mobility, is the basis of sound economic development. Nowadays there are several modern poly-structured economic centres in which the majority of the Alpine population is concentrated. Not only the orographic structure shapes the labour market; also "soft" factors (such as quality of life, leisure, culture and environment, services) tend to become more important than the traditional "hard" factors (payment, infrastructure) when considering the site conditions for setting up new enterprises with a high-quality labour force (ibid.).

In order to analyse the status of the labour market at Alpine level, this report includes three main indicators: the employment rate, the unemployment rate and the inactivity rate. An overview of these indicators for the Alpine area and the comparison with the national means is shown in table 5. The data regarding the labour market in Germany and Switzerland are available only at NUTS 2 level[13]: therefore, the data for these countries are not displayed in Table 5 cartographic representations are shown separately in Annex D.

[13] For Germany, ten districts (*Landkreise*) and three urban districts (*Kreisfreie Städte*) have been considered. For Switzerland, fifteen Cantons are considered: nevertheless, only ten of these Cantons Cantons (Uri, Schwyz, Obwalden, Nidwalden, Glarus, Appenzell Ausserrhoden, Appenzell Innerrrhoden, Graubünden, Tessin and Wallis) are located entirely within the Alpine Convention perimeter, five of them (Vaud, St. Gallen, Freiburg, Luzern and Bern) are only partially located within it.

| | | *Employment rate (per 100)* | *Unemployment rate (per 100)* | *Inactivity rate (per 100)* |
|---|---|---|---|---|
| Austria | Alps | 67.0 | - | 22.3 |
| | National | 69.6 | 5.9 | 25.9 |
| France and Monaco | Alps | 67.2 | 9.4 | 25.9 |
| | National | 69.5 | 10.3 | 28.8 |
| Italy | Alps | 66.2 | 5.9 | 29.6 |
| | National | 59.8 | 12.2 | 36.5 |
| Liechtenstein | | 61.8 | 2.5 | 19.6 |
| Slovenia | Alps | 58.9 | 11.2 | 33.6 |
| | National | 67.2 | 10.1 | 29.5 |

Table 5: Main indicators of labour market for the Alpine area and the whole national territory of France and Monaco, Italy, Slovenia – year 2011 (a). Data of Italy refer to 9 October 2011, data of Slovenia to year 2011, data for France to year 2010.

The employment rate is the proportion of employed residents among those of working age (15 to 64 years). This indicator is particularly important in relation to demographic changes, since a high employment often guarantees social stability and, due to the fact that employment is the main source of revenue for the majority of people, economic wellbeing of the families (Tappeiner et al., 2007). Figure 10 presents the distribution of the employment rate at alpine level and Figure 11 presents its variation in the decade 2001 - 2011. The map shows how both transnational dynamics and domestic dynamics can be observed. In general, differences between the single states can be observed, with no homogeneous trend at Alpine level: for example, while in France and Slovenia the average employment rate is lower in the Alpine area than at the national level, in Italy Alpine areas have a higher employment rate in comparison with the national level. Within the countries, differences are also observable, with areas such as South Tyrol in Italy and Haute-Savoie and Savoie in France showing higher employment rates than other Alpine areas belonging to the same country. The example for Germany and Switzerland shows analogous patterns. While all the German Alpine districts and urban districts (Figure E2 in Annex D) show employment rates above the average German rate (75.5), the situation between the single districts is heterogeneous and the average employment rate, in the cases of the districts of Garmisch-Partenkirchen and the urban districts of Rosenheim, Kempten and Kaufbeuren, is lower than the average Bavarian rate (78.9). Regarding Switzerland (Figure E1 in Annex D) data show a heterogeneous situation, where half of the ten Cantons fully located in the Alpine Convention perimeter show for the year 2012 values above the Swiss average (79.4) and the other half below. The lowest employment rate is registered in the Canton Ticino (66.2).

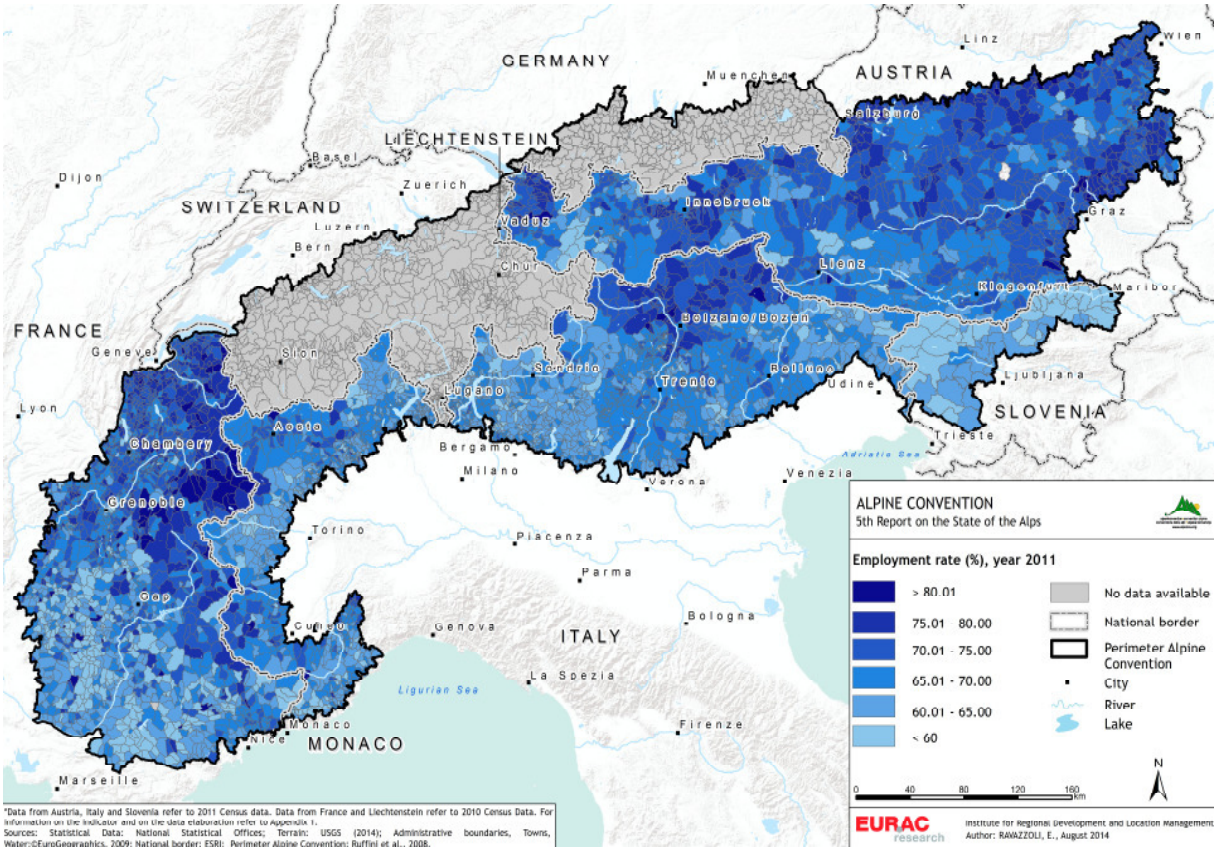



Figure 10: employment rate (per 100).

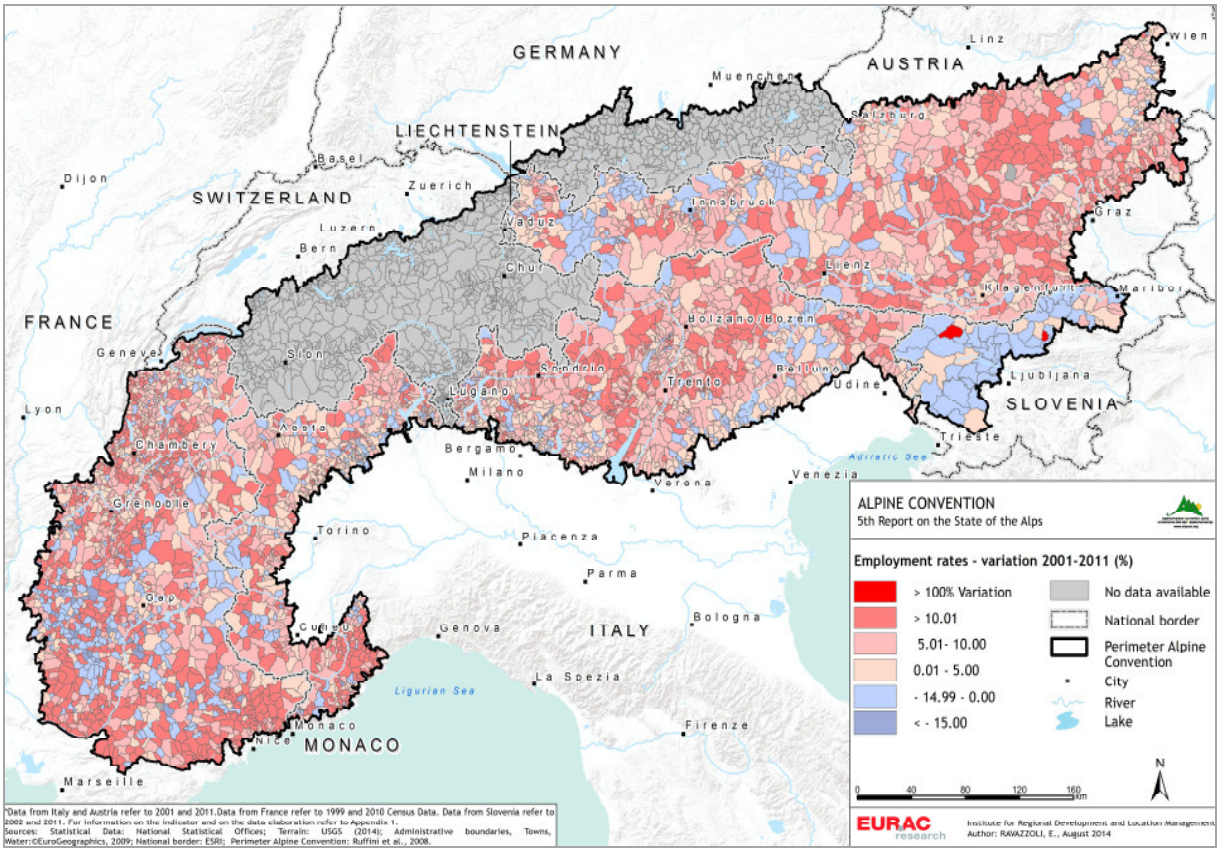



Figure 11: employment rate – variation 2001/2011 (%).

Strictly linked to the employment rate, the unemployment rate (Figure 12, with variation between the years 2001 and 2011 displayed in Figure 13) conveys the ratio between people searching for a job and the total amount of labour forces (defined as those individuals who are classified as being employed or seeking work). The map shows how, also for this indicator, the overall Alpine situation is not homogenous. In fact, the unemployment rate goes from the lowest rate of 2.5% for Liechtenstein to the highest rate (11.2%) of the Slovenian Alpine area. Except for Slovenia, the average unemployment rate is lower in the Alpine area than at the national level. Within the countries, differences are also observable, with areas such as South Tyrol in Italy or parts of the Eastern Savoie in France that show lower unemployment rates than other Alpine areas belonging to the same country.

Regarding the analysis for Germany and Switzerland, whereas the German Alpine districts have unemployment rates in line with the Bavarian average (2.9) and considerably and homogeneously lower than the other Alpine countries and the German national average (4.7) (Figure E4 in Annex D), the situation for the Swiss cantons is more complex (Figure E3 in Annex D). Cantons located in the perimeter of the Alpine Convention generally have lower unemployment rates than the average Swiss national rate (4.2), and, among these, Uri and Obwalden show for the year 2012 among the lowest unemployment rates Switzerland-wide (both 1.3). Nevertheless, the cantons of Ticino and Valais, both entirely located in the Alpine Convention perimeter, have values that are above the national average unemployment rate (respectively, 8.0 and 5.1).

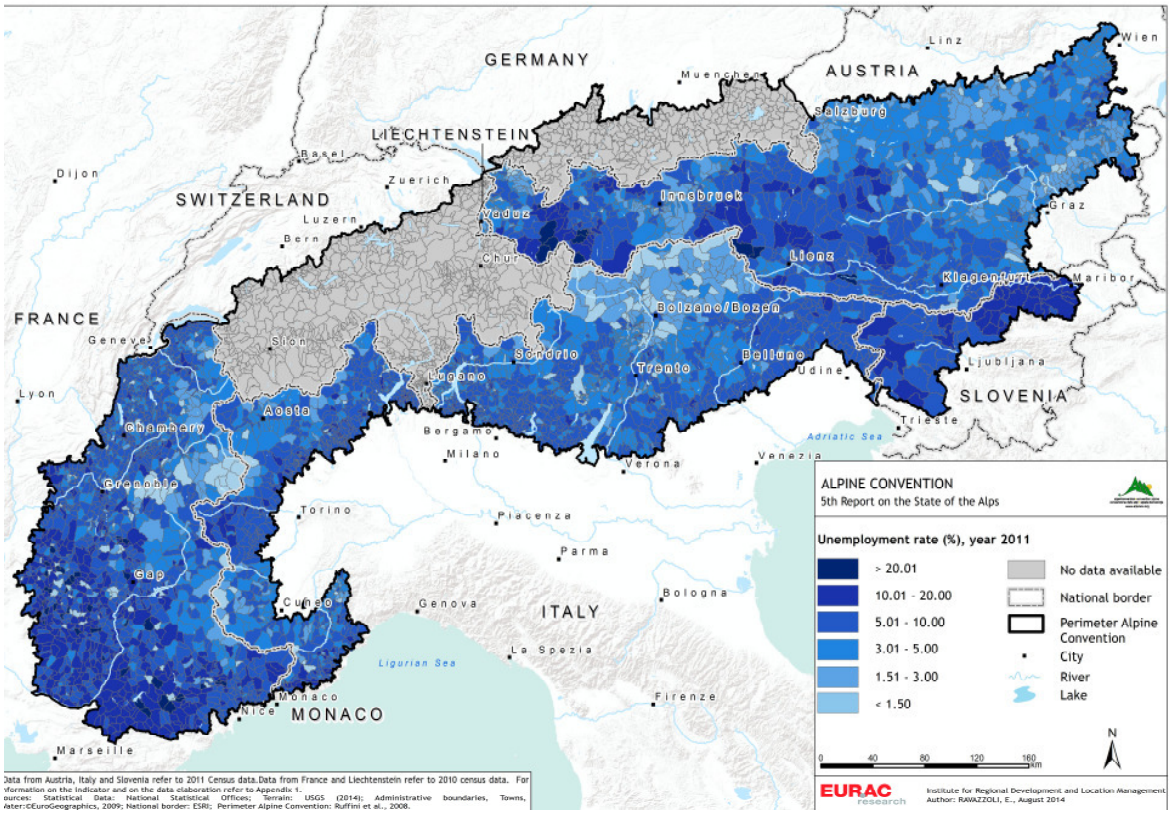



Figure 12: unemployment rate (per 100).

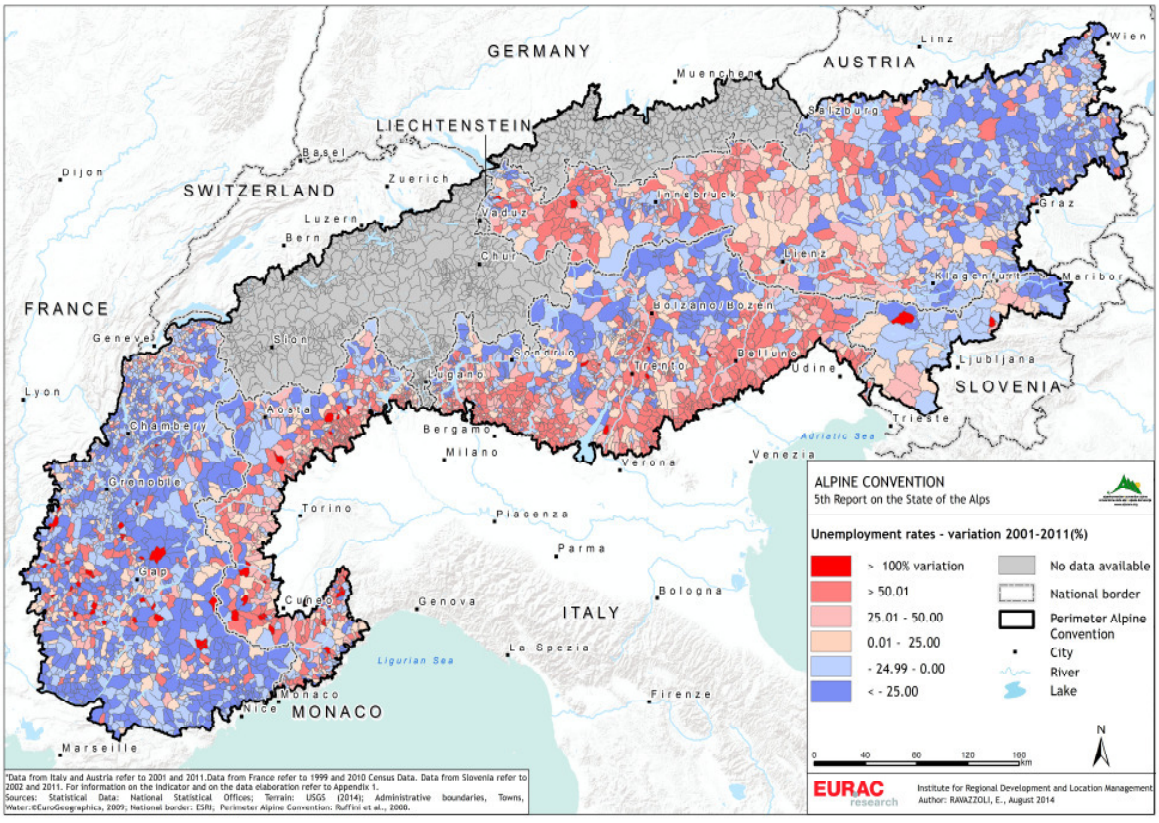



Figure 13: variation of the unemployment rate, years 2001- 2011 (%).

"Non-participants in the labour force" are defined as those individuals who are classified as neither being employed nor seeking work (Figure 14). Considering three countries of the Alpine area (France, Italy and Slovenia) the inactivity rate is higher in Slovenia (33.6% vs. 26% respectively in French Alps and 29.6% in Italian ones), higher also than the Slovenian national average value (29.5%).

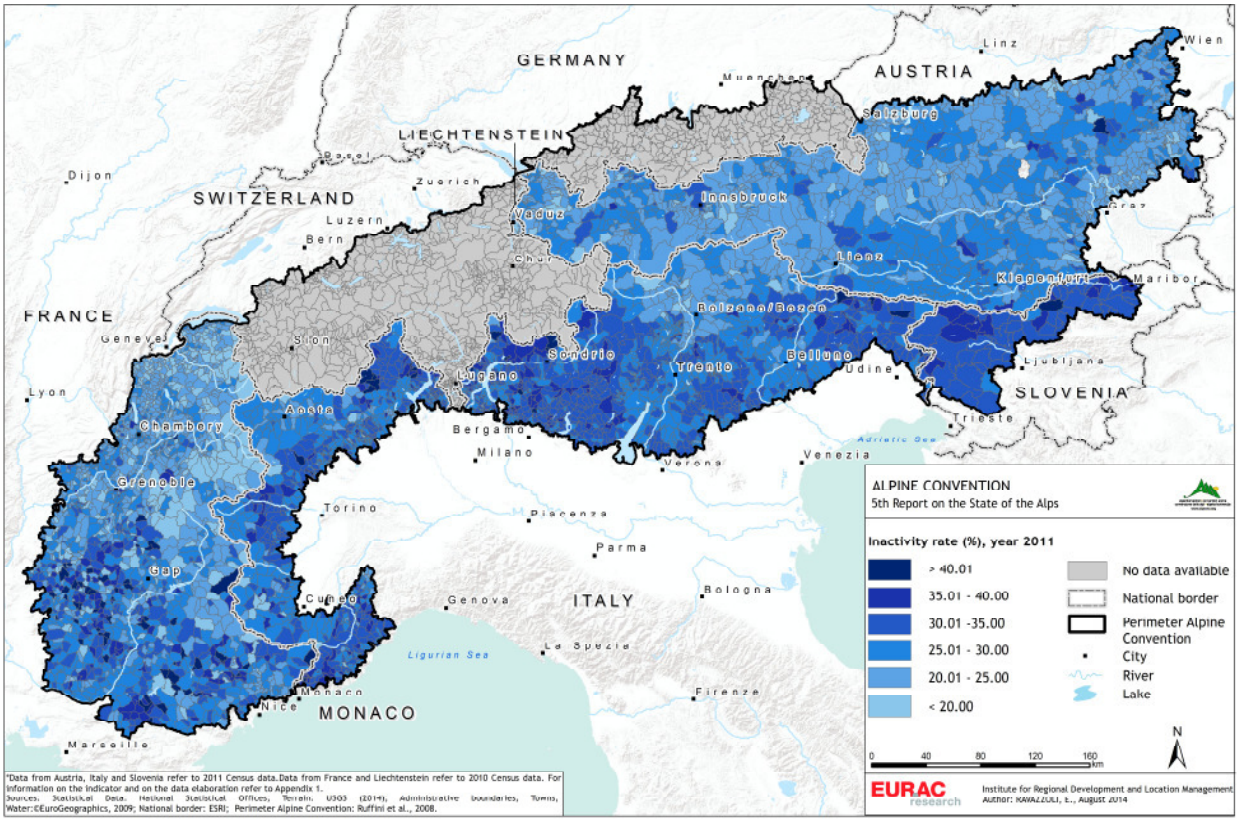



Figure 14: Inactivity rate (per 100).

## 3.2 Employment by sectors

The Alpine economy, traditionally based on agriculture and livestock farming, has known an industrial development rather late in comparison to other areas in Europe. Until the late 1970s, industry was the dominant sector in the Alps, with the highest share of employees whereas today, the available figures show the predominance of services on the total amount of jobs in the Alps (as for Europe as a whole).
Land-cover is to a large extent represented by fields (agriculture) and forests, and the primary sector is still considered of particular importance, also from political and socio-economical points of view (due to its connection with the preservation of the cultural landscape, and the safeguarding of the hydro-geologic equilibrium) (Alpine Convention, 2007). However, the structure of agriculture has largely changed over the last decades. Often agriculture is combined with other forms of economic activities and seems dependent on the features and performance of the wider regional economy. Nowadays, the rate of jobs in the primary sector is rather low. Nevertheless, seasonal and part-time jobs are common and employment in agriculture is still important where substantial labour force is needed (e.g. in orchards) or in sectors where more activities are jointly generated or additional farm activities exist (e.g. agro-tourism). The ratio of jobs in the primary sector on the total of jobs is higher outside the urban areas (and, within the same region, outside the major

cities). Locally, often a high share of primary sector jobs goes hand in hand with a low level of secondary sector jobs (ibid.).

In the Alps, the share of employed people in the industrial sector is decreasing while, in the service sector, it has been rising since the 1980s. However, in the early 2000s industry accounted for about 36% of the jobs, with some regional variations. In some regions, especially in the western Italian Alps, industry has rates of employees higher than the national average (e.g. in the manufacturing sectors respectively 27.7% vs. 20.2%). Currently, the majority of jobs in the Alps are found in services (market & non-market), as it is also the case in the other European regions. The development of the tertiary sector in the Alps is comparable with the trend that can be found in the rest of Europe. However, the importance of the tertiary sector varies from one region to another: in the French Alpine municipalities the share of jobs in services exceeds 75%, in Italian Alpine area this rate is roughly 65%.

The location of third sector's activities along the Alpine range depends on different factors: for business service, the presence of economic activities represents a key factor, while, for services to individuals, the presence and number of inhabitants is relevant. For public administration services (which are present in all municipalities but more developed in major urban centers), the key factors are the level of performed administrative functions and duties, while the presence of cultural or natural amenities in the Alps is vital for tourist services.

The extremely localized nature of tourist development in the Alps is made apparent by simple figures such as the ones estimated by Bätzing for the 1990s (Alpine Convention, 2012):

- approximately 46% of all accommodation establishments were concentrated in only 5% of Alpine municipalities;
- only 10% of all municipalities (accounting for about 8% of the total population of the Alps) had a tourism-based economy;
- the incidence of tourism was minimal (less than 0.1 accommodation establishments per inhabitant) in about 40% of all Alpine municipalities and it was modest (between 0.1 and 0.5 accommodation establishments per inhabitant) in another 40% of them.

Tourism is today an economic sector of primary importance, playing a major role especially for the inhabitants of the high valleys; it has been estimated, for instance, that in the year 2000, tourism accounted for 35.4% of the GDP of oberwallis, the highest part of Canton Valais, compared to just 23.1% for Mittelwallis and 18.0% for Unterwallis (Berwert et al., 2002). Winter tourism generates each year a revenue of about € 50 billion and an estimated 10 to 12% of all jobs in the Alps (EEA, 2005, Alpine Convention, 2014). It can also be observed that the main tourist destinations are by and large characterized by positive migratory and commuting fluxes as well as by the highest employment rates and the highest indexes of job density in the respectively surrounding areas. (Alpine Convention, 2014).

## THE ITALIAN ALPINE REGION AS A MOSAIC OF LOCAL ECONOMIES: SOCIAL FEATURES

Fabio Sforzi (Parma University) and Angela Ferruzza (Italian National Institute of Statistics)

The Italian Alpine Region is a diversified mosaic of local economies. Local economies are defined according to Local Labour Market Areas (LLMAs) as identified by Istat in 2001, while their economic and social features are derived from the information gathered through the 2001 and 2011 Censuses.

The local economies of the Region are specialized in manufacturing: "industrial districts" of SMEs and "industrial poles" of large company, and services: "cities" and "tourist places" (Figure 1). Local economies are typified according to the primary component of their economic structure defined by a coefficient of specialization. So, for example, the tourist places correspond to LLMAs specialized in consumer services (services dominated by accommodation and food service activities).

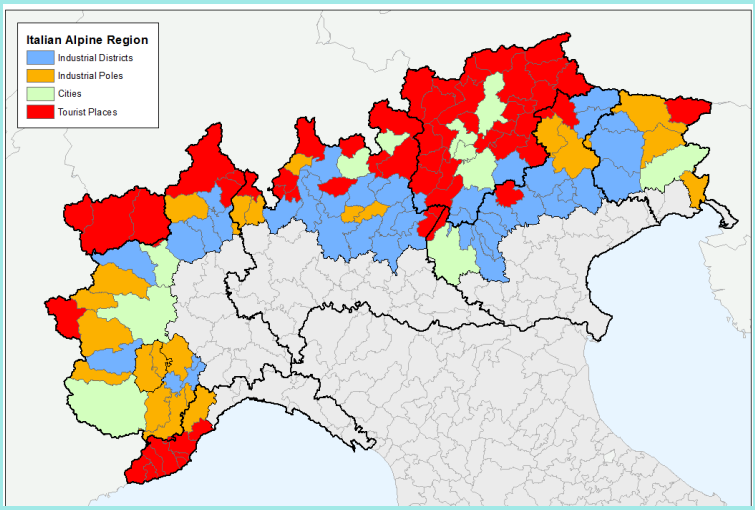



Figure 1: Italian Alpine Region: the mosaic of local economies

Tourist places (42.8 per cent) and industrial districts (32.8 percent) are the most representative local economies in number of LLMAs of the Region. Together, they account for more than half of the regional population (55.0 percent) and employment (54.4 percent). Industrial districts give the largest contribution to these quantities (43.0 percent in both cases).

In the decade of 2001-2011, the Italian economy as a whole suffered a heavy loss of manufacturing jobs. Industrial districts, like the industrial poles, lost manufacturing jobs. And the districts of the Italian Alpine Region were no exception (Figure 2). However, some districts lost more jobs than others, and the geographical distribution of job loss does not follow the traditional West-East divide. Piedmont is not a typical "district region", like Lombardy or Veneto. Indeed, districts located here have lost jobs above the average; although three of the four districts of the Region that gained manufacturing jobs belong to Piedmont (Saluzzo, Santo Stefano Belbo and Cortemilia specialized in food manufacturing), while the fourth is located in Lombardy (Vilminore di Scalve specialized in mechanical manufacturing).

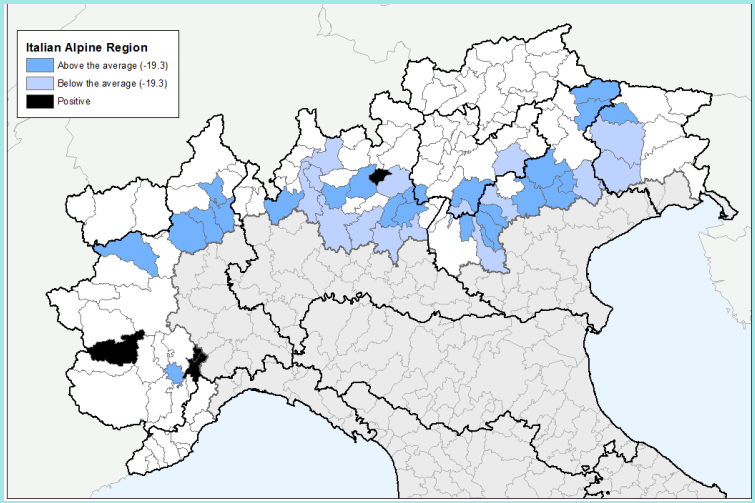



Figure 2: Italian Alpine Region: percentage changes in manufacturing jobs for industrial districts, 2001-2011.

The shift to services in the Italian economy took place during the 1980s, when manufacturing industries recorded an employment lower than non-traditional services (i.e. business, consumer and social services). The growth of employment in services has continued in later decades.

The growth of employment in business services has particular importance in the industrial districts. As is known, their industrial organization is based on inter-firm cooperation specialized in different stages of the same production process. And business services play the role of subsidiary activities that organize the national and international trade of district goods. Accordingly, a greater number of business services in the districts means a greater openness to markets.

Over the last decade, the change of jobs in business services for the industrial districts of the Region took place unevenly (Figure 3).

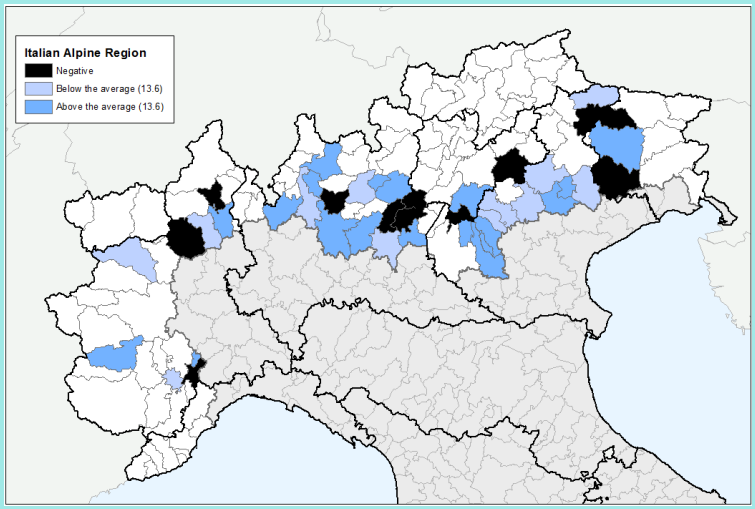



Figure 3: Italian Alpine Region: percentage changes in business services jobs for industrial districts, 2001-2011.

In some districts the growth has slowed down, while in others it was negative. Districts that have had a negative performance are scattered throughout the Region, although some of them are clustered like Lumezzane, Zogno (Lombardy) and Storo (Trentino) or Ampezzo (Friuli-Venezia Giulia) and Pieve di Cadore

(Veneto). Both clusters are specialized in mechanical manufacturing. The primary component of the local economy of tourist places are consumer services. Over the past decade, the employment in these activities increased across the country. In the Region, the tourist places that had the highest growth of jobs are clustered in South Tyrol and Trentino and in their vicinity (Figure 4).

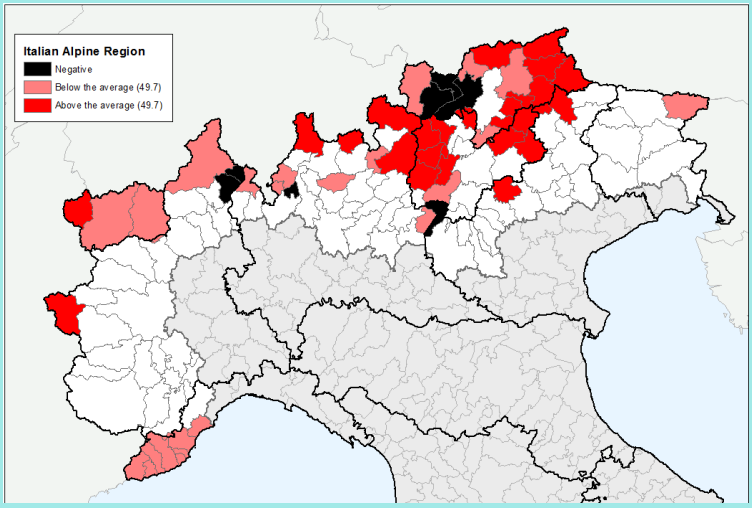



Figure 4: Italian Alpine Region: percentage changes in consumer services jobs for tourist places, 2001-2011.

Nevertheless, in the same area there are some negative cases. Job loss is recorded in a cluster of tourist places (Merano, Naturno and Silandro) that identify the Vinschgau Valley (Val Venosta), the upper part of the Etsch (or Adige) river valley, in the western part of South Tyrol.

It is worth to draw attention on other tourist places that lost jobs, because they share the same location on the lakes: Verbania and Cannobio on the shore of Lago Maggiore in Piedmont; Bellagio located on Lago di Como in Lombardy; Malcesine and Limone sul Garda located, respectively, on the eastern (Veneto) and western shore (Lombardy) of Lago di Garda. The most dynamic tourist places, i.e. those located in the South Tyrol and Trentino, are embedded in a social environment characterized by younger people compared to the other tourist places of the Region (Figure 5).

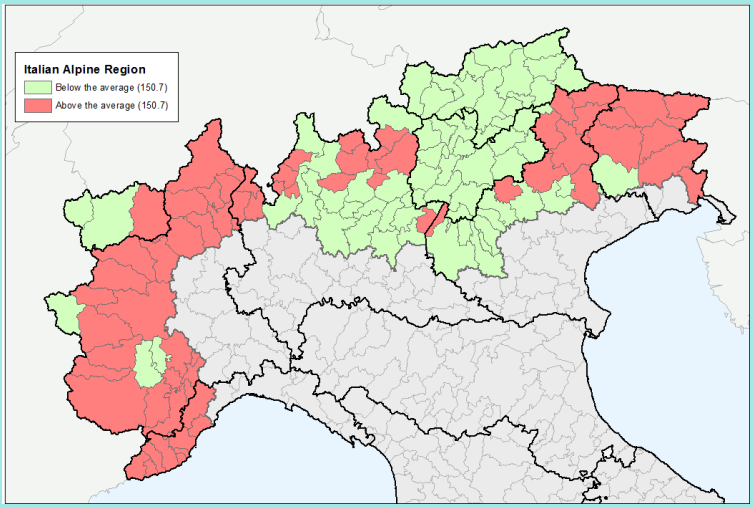



Figure 5: Italian Alpine Region: elderly ratio, 2011.

Local economies with an elderly ratio above the average are mainly located both in the far west (Piedmont)

and the far east (Friuli-Venezia Giulia and upper Veneto) of the Region. The younger generations are more educated and endowed with abilities of higher order. The human capital to meet the wants of customers is even more important in the tourism activities than in manufacturing, because in this type of services the competitiveness of local economy is less supported by technological innovations and more by personal abilities. Figure 6 presents the percentage of young people (25-34 years) with a level of secondary education. The highest percentages correspond to the tourist places aforementioned, although they also extend to other local economies, such as the eastern industrial local economies of Veneto and Friuli-Venezia Giulia.

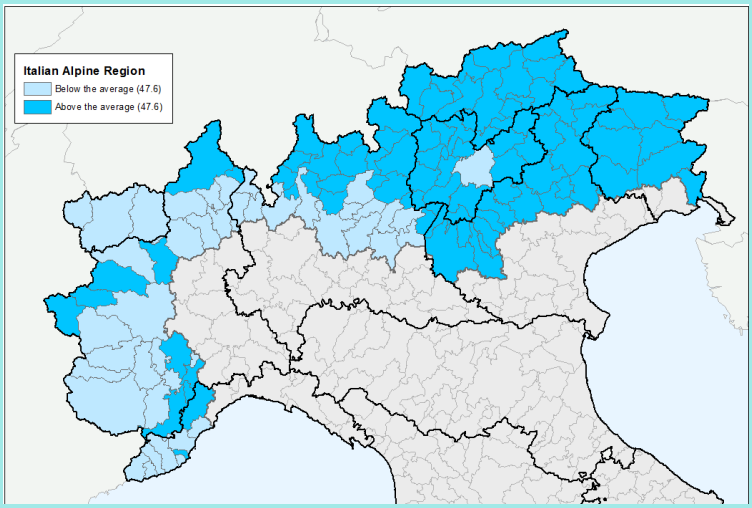



Figure 6: Italian Alpine Region: youths (25-34 years) with a secondary level of education, 2011.

As is known, in Italy the unemployment rate is higher among the educated youths. However, in the Alpine Region the youth unemployment rate (25-34 years) is at 6.8 compared to 12.8 in Italy (Figure 7).

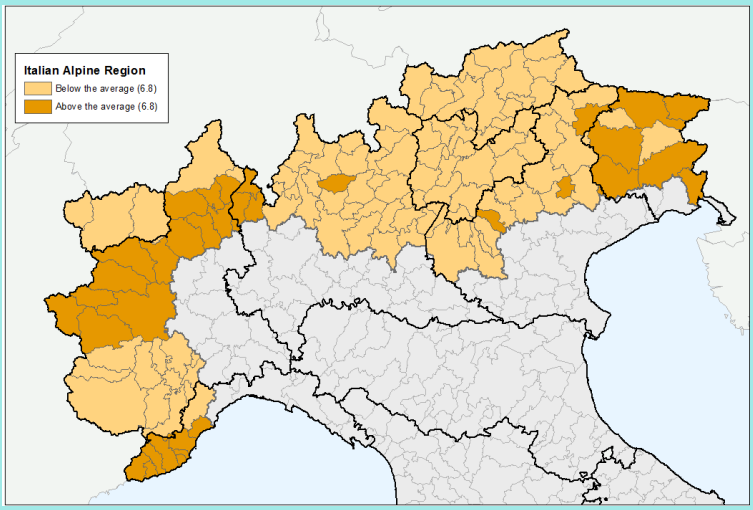



Figure 7: Italian Alpine Region: youth unemployment rate (25-34 years), 2011.

The low youth unemployment rate reflect greater opportunities that young people have in finding a job within the Region. These opportunities can be found in local economies located at the core of the Region rather than at the periphery. And they are identified with both the economic environments of tourist places

and industrial districts.

The presence of foreign resident population is higher in the Region than in the rest of Italy: 97.5 vs. 72.3 per thousand inhabitants. Within the Region, the highest incidence of foreigners is in the industrial districts, followed by the tourist places, cities and industrial poles (Figure 8). More generally, the presence of foreign residents is in the eastern local economies. This localization reaffirms the West-East divide that closes Piedmont off the rest of the Region.

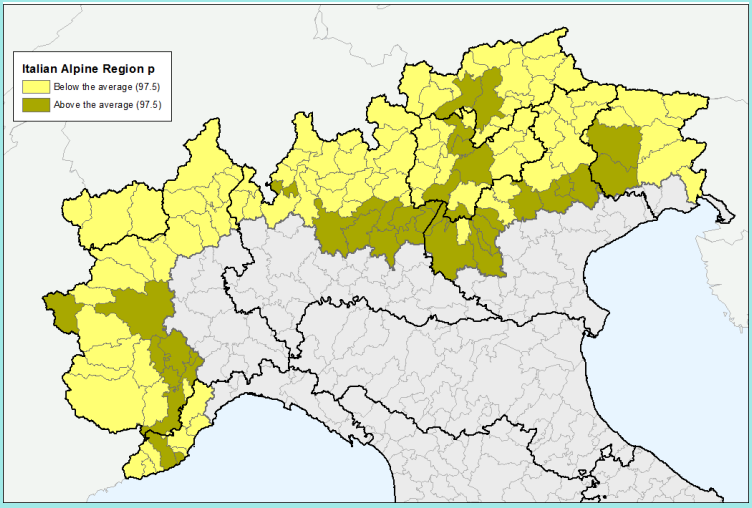



Figure 8 : Italian Alpine Region: foreign resident population, 2010.

The confirmation that standard of living and job opportunities are better within than outside the Region is verified by the pattern of daily flows of workers from residence to place of work.

The 2011 pattern reveals that the Region is highly self-contained. The daily flows of workers from residence to place of work occur mainly within the Region (84.5 percent). The workers who work outside of the region (15.5 percent) work in Italy (83.0 per cent) or abroad (17.0 per cent). Foreign countries where they work are Switzerland (99.1 percent), Slovenia and Austria (0.7 percent), France and the Principality of Monaco (0.2 percent).

## BENEFITTING FROM EUROPEAN STUDIES TO UNDERSTAND THE ALPINE SITUATION

Roger Milego, Martin Price and Elisa Ravazzoli

In recent years, two major studies of Europe's mountains have been undertaken, by the European Environment Agency (2010) and as part of the GEOSPECS (Geographical Specificities and Development Potentials in Europe) project of the ESPON programme (ESPON and University of Geneva, 2012). These have provided very detailed analyses of numerous variables. The availability of these analyses is very valuable for the RSA5, as they provide datasets on key issues, often originating from outside the perimeter of the Alpine Convention, which may be relevant to demographic processes. These datasets can then be compared to Alpine datasets in order to explore possible relationships.

A number of variables considered in the EEA and GEOSPECS reports have been hypothesized to have positive or negative influences on, and/or be influenced by, demographic processes: for instance, changes in land cover/use, urban sprawl, water availability, pollution, and transport infrastructure. Initial analysis of the many variables considered in these reports led to the identification of a smaller number for further exploration, in order to better understand possible relationships/interactions between these variables and demographic processes. The maps and accompanying text below address those for which some meaningful patterns could be identified. It should be noted, however, that the analyses below are qualitative, as changes in municipal boundaries mean that statistical analyses based direct spatial comparisons are not possible.

### Urban typology

In the GEOSPECS project, the concept of Potential Urban Strategic Horizons (PUSH) was developed. This relates to the area within a 45-minute time-distance from the edge of urban centres (or Functional Urban Areas, FUA) with more than 100,000 people. The 45-minute time-distance is widely accepted as defining the limit for daily commuting or access to urban centres, for a diversity of employment opportunities and services. The threshold for inclusion of a municipality (i.e., Local Administrative Unit, LAU 2) within this urban typology was that at least 30% of its area should have to be included within a PUSH.

A key factor that could be envisaged as influencing the urban typology is topography. As can be seen from the map in Figure 1, the urban typology is primarily found in lower-altitude and relatively flat areas around the edge of the Alps, as well as above Nice, in the basin of the Dray near to Klagenfurt and along the valley of the Inn around Innsbruck. In general, the only relatively steep and high terrain that is included is around Grenoble (France) and within the watershed of the Adige/Etsch in northern Italy.

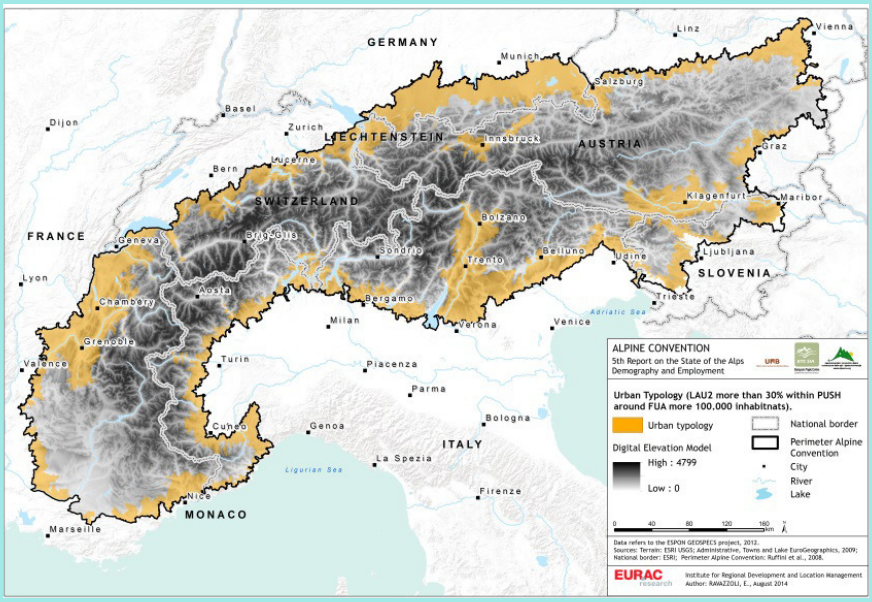



Figure 1: urban typology.

Municipalities around nearly the entire Alpine Convention perimeter are included in the urban typology. In other words, nearly every municipality around the edges of the Alps has reasonable access to an urban area with at least 100,000 people, providing opportunities for employment and services or, conversely, for people living in these areas to visit Alpine municipalities for recreation etc. However, the distance from the perimeter to which these accessible communities reaches varies considerably. For instance, in Austria, east of Salzburg, and to the west or Torino in Italy, it is very limited: less than 10 km. Conversely, around Chambery and Grenoble (France) and south of Munich (Germany), the depth of influence is far greater: up to c. 40 km. The map also clearly shows the influence of urban areas within the Alps, particularly along the corridor including Bolzano and Trento (Italy), around Klagenfurt (Austria) and, to a lesser extent, around Innsbruck (Austria).

### Urban typology and demographic variables

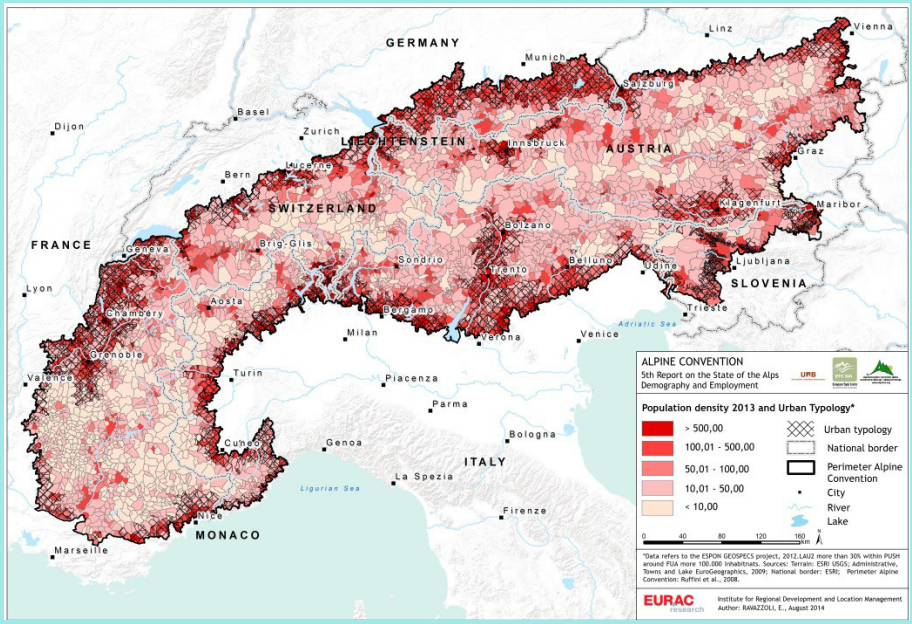



Figure 2: population density and urban typology.

It is often hypothesized that there is stronger demographic and economic growth close to urban areas, which provide opportunities for employment to people living in nearly municipalities (e.g., in peri-urban areas), as well as being sources of people who visit the mountains at weekends, thus bringing income. As can be seen from the map in Figure 2, there is generally a very strong relationship between population density and the urban typology. In total, 49.7% of the Alpine municipalities (3508 out of 7058), and a much larger proportion of the Alpine population, are included in the urban typology. The relatively few municipalities with a density above 100 persons/km² that are not included in the typology are tourist resorts or small towns. Within the urban typology, there are some municipalities with relatively low population densities (below 50 persons/km²); these tend to be in areas of high relief.

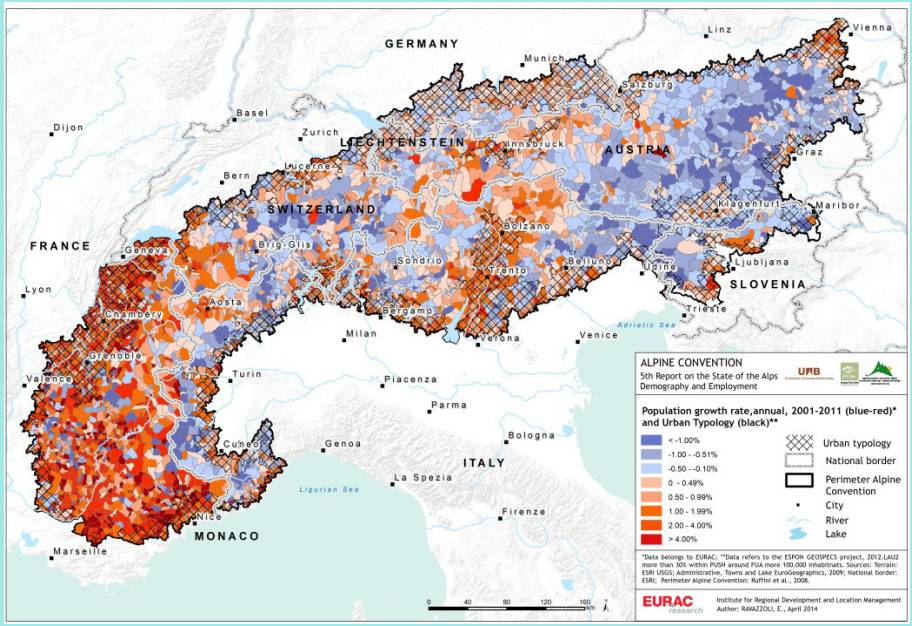



Figure 3: population growth and urban typology.

Patterns are less clear with regard to population growth (map in Figure 3). Nearly all municipalities of the French Alps are characterised by population growth, whether close to urban areas (including Geneva) or not. However, almost all municipalities with population loss are outside these urban-influenced areas. In other countries, population growth appears to be more likely in areas influenced by cities such as Belluno, Bergamo, Bolzano, Trento, and Trieste (Italy), Innsbruck, Salzburg and Vienna (Austria) and, to some extent, Munich (Germany). Nevertheless, around all of these cities, a number of municipalities with population loss are also found. This is even more true around cities such as Maribor (Slovenia), Klagenfurt (Austria) and Verona (Italy). In areas without an urban influence, there are also regions with clear population growth in the southwest corner of Switzerland, around Aosta and east of Bolzano (Italy) and, to a certain extent, west of Innsbruck (Austria).

### Access to airports

Access to airports is often considered as being an important driving force for economic, and therefore population, growth. The GEOSPECS project compiled data for airports across Europe, in two categories:

- at least 150,000 passengers a year
- airline connections of more than 15,000 passengers a year.

The municipalities within a time-distance of 45 minutes of these airports were then mapped. It should be noted, however, that the number of passengers/connections for two airports in the Alps – Aosta and Bolzano – are below the thresholds, so that these airports are not shown on the resulting maps or considered in the analysis.

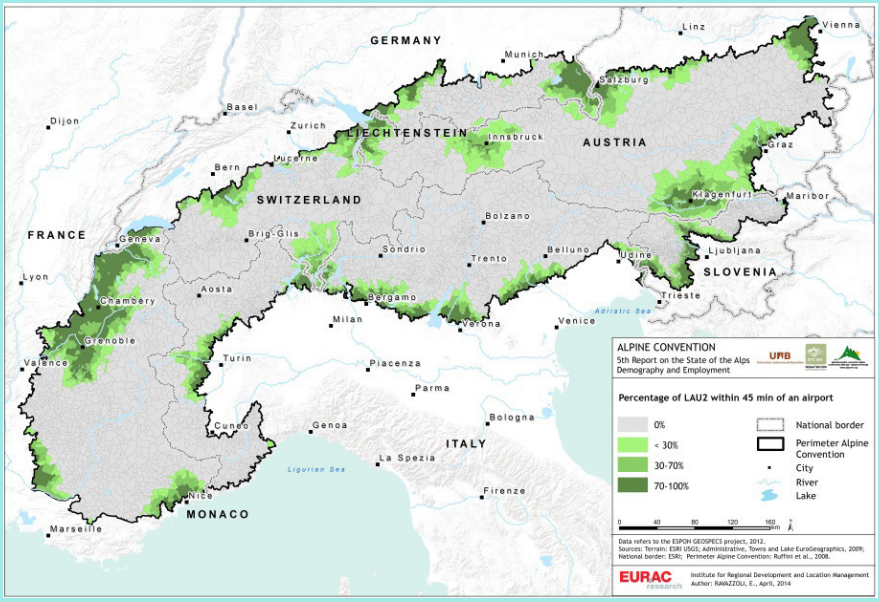



Figure 4: Percentage of LAU2 within 45 minutes of an airport (with at least 150,000 passengers per year)

Municipalities with good access to an airport are generally around the Alpine perimeter and close to large cities (Figure 4). The only important exceptions are municipalities with access to the airports of Innsbruck, Klagenfurt and Graz (Austria), Chambery and Grenoble (France) and, to a certain extent, in the Ticino (Switzerland). However, 4696 of the 7058 Alpine municipalities (66.5%) – particularly a number of major towns and cities in Italy, as well as Brig-Glis in Switzerland – do not have good access

to airports.

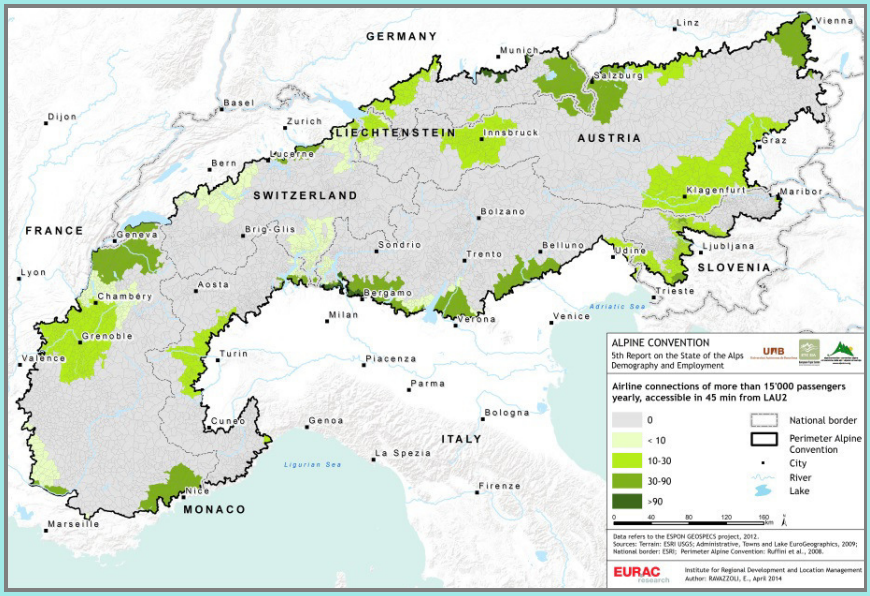



Figure 5: Airline connections of more than 15,000 passengers a year, accessible in 45 minutes from LAU2.

The map in Figure 5 shows the same pattern to the previous map in terms of spatial extent, but it appears to differentiate airports with larger numbers of connections – Nice (France), Geneva (Switzerland), Salzburg, Vienna (Austria), Milan, Venice, Verona (Italy) – from the others.

The conclusion from these two maps is that, although it is often hypothesized that location close to an airport can be a factor that stimulates demographic growth, areas with good access to airports show both population growth and loss. Access to a large urban centre (>100,000) appears to be a more important factor.

### Land cover changes, 1990-2000 and 2000-2006

Patterns of land cover have been mapped in successive Corine Land Cover (CLC) datasets for the EEA: 1990, 2000 and 2006. These datasets provide consistent classifications of land cover classes across the whole of Europe at a spatial resolution of 1 km². Comparison of datasets from different years allows analysis of changes in land cover from one class to another. For this report, two general types of land cover change were considered: urban expansion and industrial growth, both of which can be hypothesized as being related to increasing numbers and densities of people. In the relatively short time periods under consideration, the changes cover relatively small areas within the Alps. Very few land cover changes occur in the high mountains of the Alps. Consequently, three zooms were investigated in more detail (Maps in Figures 6, 7).

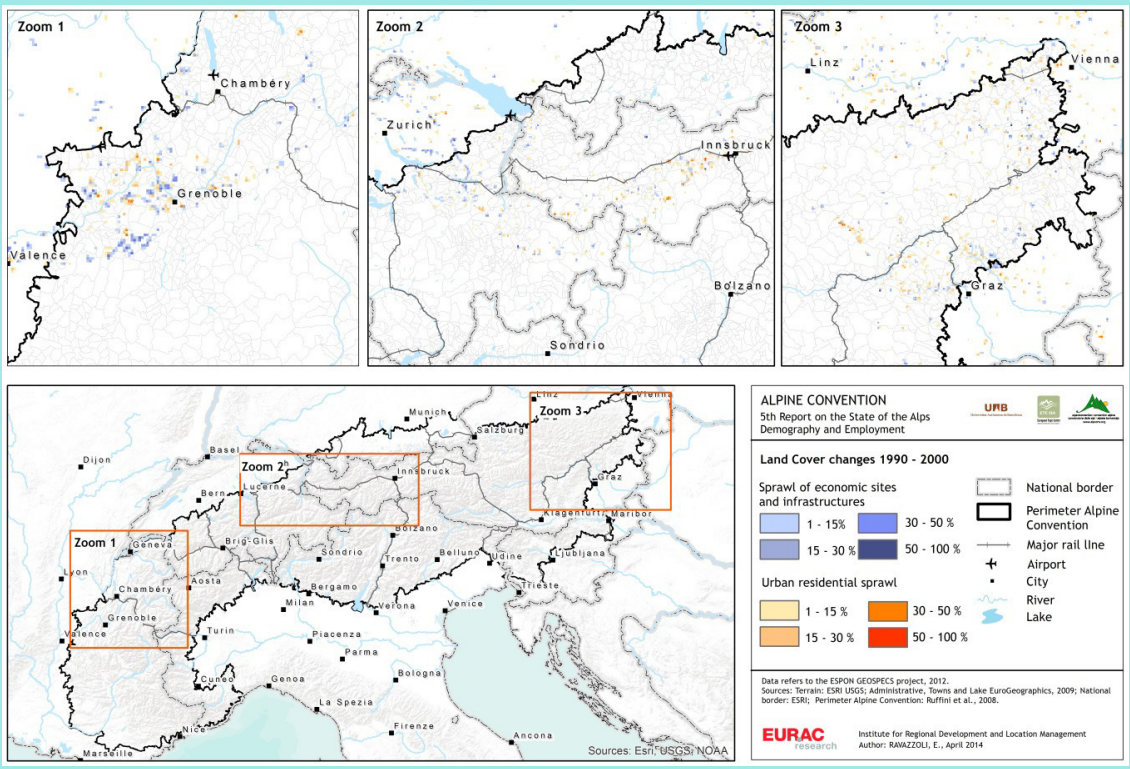



Figure 6: land cover changes – Zoom 1.

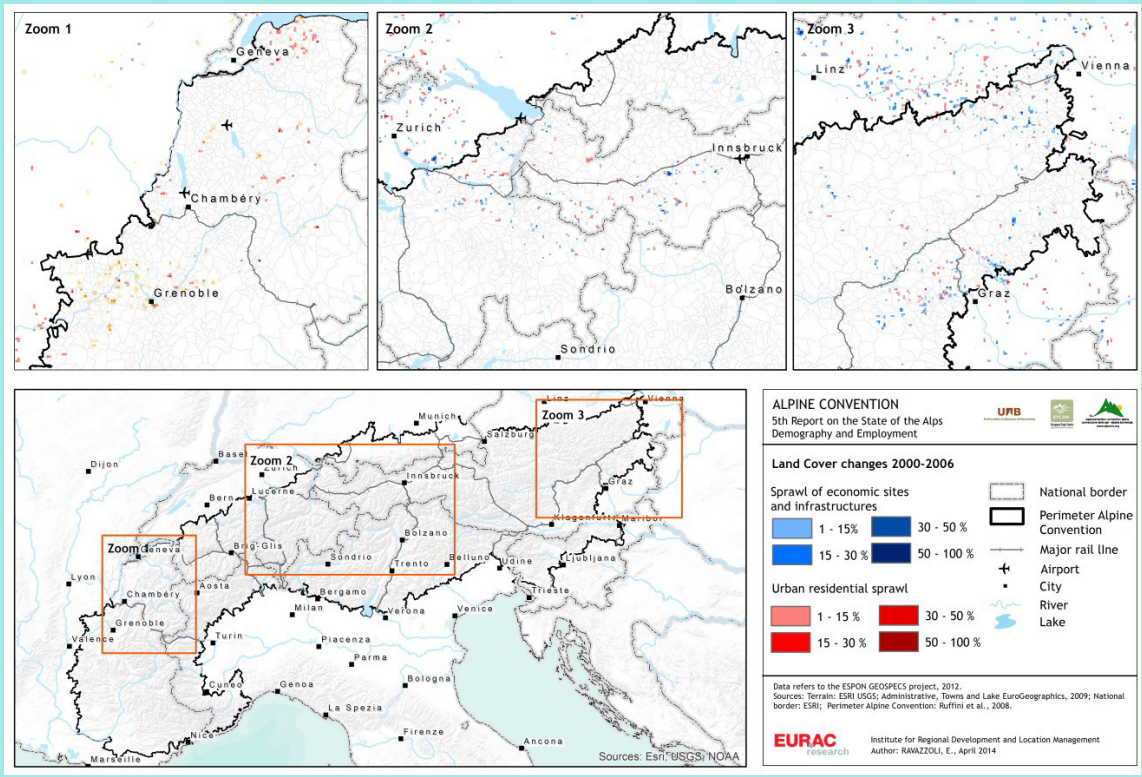



Figure 7: land cover changes – zoom 2.

A few patterns appear to emerge from the zooms:

- In the area around Grenoble (France), land cover changes in the first period included both industrial development and urban expansion. In the latter period, there is only urban expansion.
- West and also northeast of Graz (Austria), land cover changes in the first period included both industrial development and urban expansion. In the latter period, there is primarily industrial development. There may be a similar pattern to the southwest of Vienna (Austria).
- To the southwest of Innsbruck (Austria) is an area with substantial urban expansion, especially in 1990-2000. This pattern is more discontinuous to the west and south through Austria into Switzerland, but appears to be along major roads.

These preliminary conclusions need to be investigated in more detail in order to develop a more coherent understanding of the processes of land use change, which could then be compared to processes in demographic change in each area.

GOOD PRACTICES

## FOOD PRODUCTION IN SOČA VALLEY (Slovenia, Northern Primorska region)

Issues:

- re-launching of the local/regional competitiveness
- innovation as a driver of a sustainable development which preserve culture and population

Type of measure:

- pilot action – private initiative

Funding: Private/business driven

Background: Availability of jobs is one of the most important factors for maintaining the population in rural/mountain areas. Agriculture is one of the possibilities if there is enough added value. It must come from a higher quality of the products that is recognised on the market and cooperation in the supply chain.

Implementation:

There is a high and long tradition of milk production in Soča valley with many small-sized farmers that supply the Planika dairy. In the time of globalisation and merging of other similar dairies, Planika decided to stay on the same level with original, traditional products and to offer farmers highest possible value for a high quality milk (the highest in Slovenia). What is important is a fact that the dairy is owned by the cooperative which was established by the farmers. It is a closed loop economy bringing benefits for the farmers, maintenance of the landscape, respecting tradition and offering the possibility to live and work in the valley. The case shows that niche-oriented or innovative business solutions can have an important influence on other issues and sectors.

Indicators:

Success of the products on the market, recognition of the brand.

Transferability:

The approach of building a network/cooperative of farmers/SMEs to gain power on the market with a niche product is highly transferable.

Link: http://www.mlekarna-planika.si/

## PROJECT CAPACITIES: COMPETITIVENESS ACTIONS AND POLICIES FOR ALPINE CITIES (Transnational – Alpine Space Project)

Issues:

- re-launching of the local/regional competitiveness
- innovation as a driver of a sustainable development which preserve culture and population

Background, implementation and pilot activities:

The project CAPACities, financed in the framework of Alpine Space Programme, is focused on small urban centres in the alpine area and in the mountain areas that surround them.

In the framework of this project, the 10 partners worked on 16 pilot projects. Throughout the pilot areas

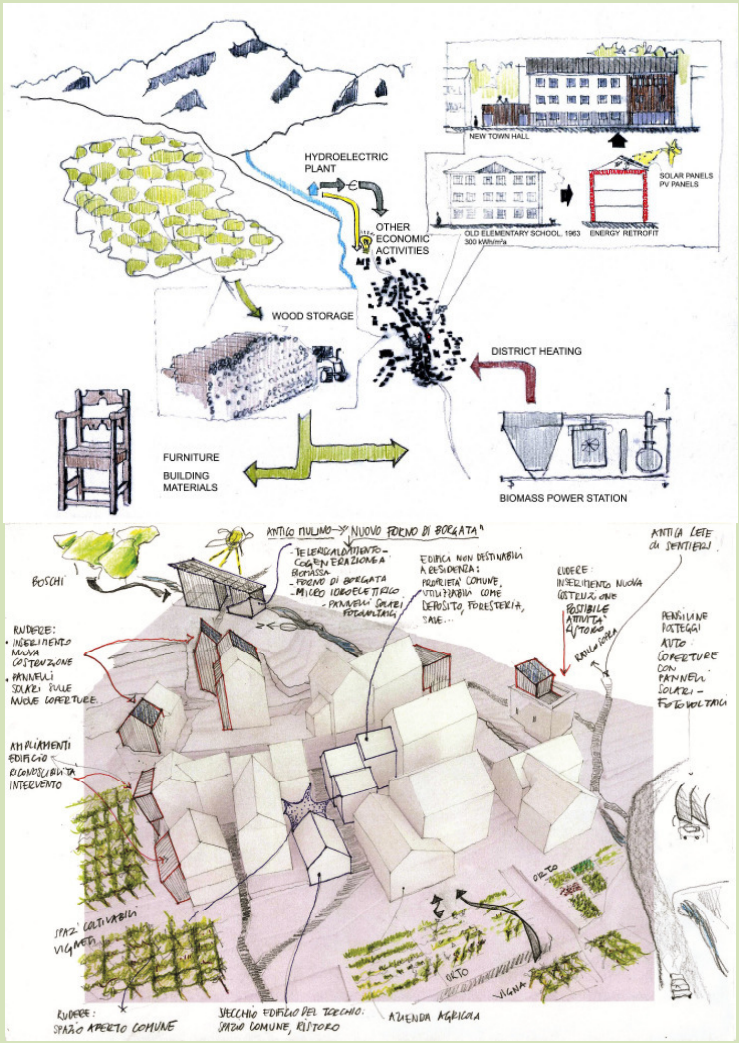
involved, as for the Alps as a whole, the demographic growth rates was very heterogeneous. Other indicators has been developed in the project context, such as the elderly index (highlighting more clear trends, as already described) and the municipalities size (confirming the strong distribution of population along the Alpine foothills and in the main valleys).

Regione Piemonte has individuated two pilot projects, aiming at building sustainable development scenarios rooted in locally available resources and traditional knowledge, actively involving public and private local stakeholders and dealing with the negative demographic dynamics.

The pilot areas in which projects have been developed were Val d'Ossola (in the northern part of the Region) and Val Varaita (in the south-western part of Piemonte).

In both cases, the Project development was based on three different phases:

1) analysis of local potentialities (also through SWOT analyses), needs and projects using tools like interviews, workshops, etc. in order to try to involve local stakeholders;
2) organization of a local conference in which possible development scenarios have been discussed among main stakeholders;
3) definition of a shared strategic document.




In Varaita Valley the economy is specialised on the traditional sector of wood-economy, now facing a serious crisis. The hydroelectric potential of the valley is not considerable, but wood is a possible mean for activating multi-scale economic opportunities also in the energy sector, as well in building sector and in handcrafting activities. Also in the territorial maintenance wood could be an important resource.

For Ossola valley the focus was on the traditional buildings and on the supply of building-materials, in particular referring to the mountain-side villages around Domodossola (that generally are very near -by car- to the main centre of the valley).
Recovering abandoned buildings could be an opportunity for containing soil consumption in the valley floor and for re-populating mountain slopes.
But recovering processes should have to:

- be based on the use of as many locally available materials as possible (a short supply chain favouring local economy and entrepreneurs);
- involve the whole building sector and other local stakeholders;
- be centred on villages structures, not only on single buildings.
- The main outputs of the Pilot Projects consisted in:
- the definition of a shared strategic document on local development (also shared by the Province of Verbano-Cusio-Ossola in the second case);
- the definition of guidelines for the use of renewable resources in energy production and for reducing energy consumption in Alpine contexts;
- the definition of guidelines for the revitalisation of mountain-side villages, with suggestions/addresses on architectural, social, and economic issues related to the theme;
- the testing of the above-mentioned guidelines in the Pilot Project areas.

Link: www.capacities-alpinespace.eu

### KRAFT DAS MURTAL – SOURCES OF STRENGTH IN A REGION "THE MURTAL" (Austria, The Murtal)

Issues:

- re-launching of the local/regional competitiveness
- innovation as a driver of a sustainable development which preserve culture and population
- creation of qualified employment dealing with the brain drain phenomena
- implementation of educational opportunities for mountain young people (e.g. primary schools in sparsely populated areas, professional schools training up the traditional activities, universities avoiding emigration and brain drain)
- increasing of the knowledge on the territorial dynamics and elaboration of a strategy for the development of the area and for the safeguard of the services

Type of measure:

- pilot action (project: Kraft. Das Murtal: establishing an umbrella brand).
- political measure (n°, date, institution): 12 sub-projects, see below.

Funding: Initiated by 3 LEADER-regions; Funding agencies at federal and provincial level, by the EU and by central regional stakeholders and interest groups. Wherewithal from enterprises.

Background: Since 2008 a remarkable cooperation network of manufacturing industry (steel and wood processing, engineering, construction) and service providers (commodities, consumer goods and services) has been built up. Building on a strategy and milestones plan worked out by 10 regional stakeholders nowadays more than 60 companies join the cooperation network. By this the value creation, the number of jobs at all levels (apprenticeship, skilled workers, university graduates, experienced managers) and the income of people

could be raised and will further rise. This makes the region attractive for companies setting up their business there in future.

Implementation:

12 sub-projects:

**Redefining the region`s image:**

- Communications strategy: Kraft-Newsletter, web-site, facebook, press work, Kraft-logos.
- Image analysis
- (Playful) work discovery: This project is pitched at very young children from kindergartens and schools in the region: The young researchers investigate the companies together with their teachers and then give a joint presentation of their impressions in front of their parents and friends.
- Open Day: The event helped many people to get to know the most important employers (hi-tech companies) in the region.

**The human factor:**

- Attractive jobs – attractive employers
- Regional apprenticeship strategy: campaign to inform school-leavers about the 1.800 apprenticeship places and linked opportunities (earn good money, high job security, career progression)
- Regional training schemes for the manufacturing and services sectors

**Business integration:**

- Regional development plan for the manufacturing & business location
- Regional networks of excellence
- Regional network flows: Less products and services from outside of the region.

**Sustainability:**

- Businesses assume pro-active and visible responsibility for the region: Corporate Social Responsibility-check of 12 companies led to various plans like a common photovoltaics power plant , …

**Industrial / competence tourism:**

- Interplay between tourism service providers and requirements of business will be strengthened ➔ industrial and competence tourism: People incl. school children visit region`s leading companies and get to know possible employers.
- Organization of 100 km "Kraft" run.

Indicators:

- Number of jobs at different levels
- Number of apprentices in the region
- Total sales in €
- Export share of the companies
- Percentage of value creation in the region.

Transferability:

Embedding all people in the region – from kindergarten age on – in the regional network of the industry, economy and services sector. Create and maintain different jobs for young people with outstanding prospects for the future and communicate this. Creation of new and innovative products will lead to successful entry to new markets.

Link: www.kraft.dasmurtal.at

### OPTICAL FIBRES IN ALL THE MUNICIPAL TERRITORY OF BUDOIA (Italy, FRIULI VENEZIA GIULIA, Budoia – PN)

**Issues:**

- innovation as a driver of a sustainable development which preserve culture and population
- implementation of educational opportunities for mountain young people (e.g. primary schools in sparsely populated areas, professional schools training up the traditional activities, universities avoiding emigration and brain drain)
- innovative solutions for providing services in sparsely populated areas
- increasing of the knowledge on the territorial dynamics and elaboration of a strategy for the development of the area and for the safeguard of the services.

**Type of measure:**

- pilot action
- political measure (2011/2012 Municipality of Budoia, NCS Group)

**Funding:** Private investment with a public-private partnership.

**Background:** The Municipality of Budoia is placed along the alpine foothills not far from the urban area of Pordenone; since two years ago Budoia was not served by fast internet connections, making the territory unable to host public and private services needing the internet connection.

**Implementation:**
Thanks to a public-private partnership between the Municipality of Budoia and a private enterprise, the whole municipal territory has been wired up; costs was up to the private, which used the public network of street lighting for the installation. The agreement includes free connections for the municipal building sas well some open wi-fi areas in the municipal territory. Budoia is the first Italian community entirely wired up with optical fibres FTTH (Fiber To The Home).

**Indicators:**
All the public buildings are now wired up; schools are wide and use interactive multimedia boards. Library is equipped with multimedia devices and an ICT room is used by the students and by elderly for ICT training.
New services for tourists are accessible thanks to the public wi-fi areas and safety has been implemented with a video-surveillance system linked to the fiber-network.
The new urban plan take into account the new services as well the new needs, including the spaces for the workers of this new ICT-related economy.

**Transferability:**
Other mountain municipalities (e.g. Polcenigo, Caneva) have taken as an example the project of Budoia and are now working in this sense.

**Link:** http://www.comune.budoia.pn.it/index.aspx

## NATIONAL CONTRIBUTIONS

### AUSTRIA

The Austrian National Contribution will be integrated in the REV1 version.

### FRANCE

As already mentioned, employment rate is significantly higher in the Alps than in other French territories, due to the economically favorable situation of that land and, more specifically, to the presence of jobs) in the touristic sector that are attractive to young people of different education level (sport, cultural and social animation). Those jobs are often part time and offer low wages. But the territory also holds a major academic town attracting students (Grenoble), and many productive areas, both in the towns (tertiary activities) and some alpine valleys (industry).

| | | Alpes | | France | |
|---|---|---|---|---|---|
| Indicators | | 2010 | 1999 | 2010 | 1999 |
| 2.1 | Inactivity rate (per 100) | 25.9% | 29.8% | 27.8% | 30.7% |
| 2.2 | Employment rate (per 100) | 67.2% | 62.4% | 63.8% | 60.2% |
| 2.3 | Unemployment rate (per 100) | 9.3% | 10.8% | 11.6% | 12.9% |
| 2.5 | Long-term unemployment (per 100) | 32.5% | | 37.7% | |
| 2.6 | Young unemployment (per 100) | 15.6% | | 17.0% | |
| 2.7 | Temporary workers (per 100) | 1.9% | 1.0% | 2.3% | 1.1% |
| 2.8 | Part-time/full time employed (per 100) | 17.8% | 18.5% | 15.8% | 8.9% |
| 2.9 | Employees/selfemployed (per 100) | 8.1% | | 6.3% | |

Table 1: Labour market indicators.

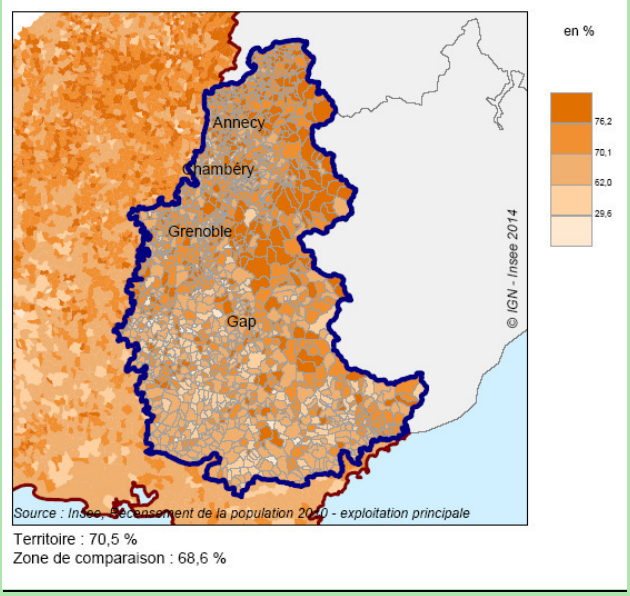



Figure 1: women employment rate.

Those economic specificities explain why the activity rate is 2 points higher than national average, the employment rate 3.5 points higher, and unemployment rate 1.3 lower. For the same reasons, young people

unemployment and long term unemployment are both low (1.4 and 5 points lower than national average), and part time employment high: 2 points over national average. Temporary workers percentage was low at the time of the latest available survey (2010), when the economic industrial activity was slowly recovering from the 2008-2009 industrial crisis. It has probably risen_since. Self-employment is higher than average, due to rural and touristic activities in the alpine valleys.

The economic structure is surprisingly similar to national average : around 2% of the jobs belong to agriculture, 14% to industry, 8% to homebuilding and public works, 45% to trade, transport and business, 30% to administration, social services, education and health. This, again, is the result of the existence of different territories in the French Alps. Thus, in the department des Hautes-Alpes, agriculture, while diminishing, still represents almost 5% of the total employment, twice the alpine average, while industry counts for less than 6%, 8 points less than average, and trade, transport and business 43% (2 points less). In contrast, the department offers more jobs in the administration, health and social services: 38 %. In the department de Haute-Savoie, by contrast, industry counts for 17% of the employment and public administration, health and social services only 27%.

Overall, the French Alps have gained 156 000 jobs in 10 years, between 1999 and 2010 (+ 17%). During the same period, agriculture lost 4 000 jobs, industry 26 000, but construction and public works created 25 000 jobs, commerce, transport and business 96 000 and administration, health and social services 65 000.

| | Alpes | | | France | |
|---|---|---|---|---|---|
| | 2010 | 1999 | Difference 2010-1999 | 2010 | 1999 |
| Total employment | 1,077,797 | 921,578 | 156,219 | 25,718,171 | 22,800,731 |
| Agriculture | 25,005 | 29,138 | -4,133 | 753,929 | 909,021 |
| Manifacturing | 150,487 | 176,772 | -26,285 | 3,575,684 | 4,091,040 |
| Construction | 87,280 | 62,496 | 24,784 | 1,779,468 | 1,351,421 |
| Trade, transportation, services | 487,543 | 391,003 | 96,540 | 11,718,282 | 9,820,019 |
| Public administration, education, health, social action | 327,482 | 262,169 | 65,313 | 7,890,808 | 6,629,230 |
| | | | | | |
| % Agriculture | 2.3% | 3.2% | | 2.9% | 4.0% |
| % Manifacturing | 14.0% | 19.2% | | 13.9% | 17.9% |
| % Construction | 8.1% | 6.8% | | 6.9% | 5.9% |
| % Trade, transportation, services | 45.2% | 42.4% | | 45.6% | 43.1% |
| % Public administration, education, health, social action | 30.4% | 28.4% | | 30.7% | 29.1% |

Table 2: Employment per NACE sector, absolute value and percentage, 1999-2010.

Agriculture represents 2% of the jobs overall, but occupies 30 % of the territory. It is mainly concerned with breeding (cattle, sheep), but milk, vegetable production and fruit growing also play an important role, especially in the south and west of the perimeter (department de la Drôme, Alpes de Haute Provence).

The alpine industrial firms know the same difficulties as the rest of the French industry, which has been steadily losing jobs for the last 12 years. The situation, however, is worse in some sectors due to geographic isolation and transport costs, and sometimes to structural problems: industrial firms in the Alps are mainly of small size, heavily dependent of major contractors and very reactive to the evolution of international trade. The availability of hydraulic electrical power is not really a strong advantage anymore. Thus, many suffered deeply from the 2008-2009 crisis, and their small size inhibits their capacity to look for new exportation markets. Despite these difficulties, many industrial firms have progressed significantly in the last period, on niche products, in a large variety of industrial sectors.

Growth of the population, a relatively high income level, a dynamic touristic industry, all create a strong demand for commerce, transport, person services, housing construction and maintenance, culture, social and health services, administration, and so on. This explain why these sectors have created 180 000 jobs in the last ten

years, and will continue to do so in the next period. In the northern part of the territory, the presence of Grenoble and, just outside, Geneva, means opportunities to develop industry and business services, especially in the knowledge economy.

Thus, despite the difficulties of agricultural and industrial sectors, it can be forecast that the economic situation of the French Alps will continue to be favorable in the near future, bring continuing demographic growth. This in turn will mean environmental constraint that will have to be forecast and treated.

Decrease in agriculture and industry, growth of tertiary employment in urban areas, growth of women activity rate, all these phenomena lead to a spectacular change in the social composition of the French Alps. Among these changes, the commuting rate, from home to work, has increased dramatically: in 1999, 40% of the population worked in its commune (LAU2) of residence. This rate has decreased to 34% in 2010 (29% in the department de Haute Savoie, bordering Geneva). By contrast, 13 % of the population work outside its department of residence, in France or in another country (21% in Haute-Savoie). This commuting phenomenon, in an geographic environment highly bound by the mountains, creates difficult transportation problems (as can be seen, every morning, on the motorways leading from France to Geneva). This suburban population, living in the country and working, for the vast majority, in town, ask for services, commerce and living conditions close to urban populations - including high-speed Internet access, health and education services, etc.

### GERMANY

The data for this focus on the German labour market have been derived from public databases and are available on NUTS 3 (district and urban district) level. Even though this geographical level of analysis is not as detailed as the municipal one, NUTS 3 data allow comparing the values at district level with the overall values for the State of Bavaria, for Germany and for the Alps.

Three main indicators are considered within this national focus: the activity rate, the employment rate and the unemployment rate. The selection of these indicators is motivated by the need to obtain information that, although collected at a different geographical level, could be comparable to the one concerning the other alpine countries.

The inactivity rate, at overall level (Zensus, 2011), is, for the German alpine districts, lower than the national German one (20.7) and in line with the Bavarian one (18.7). At district level, only the district of Garmisch – Partenkirchen (19.5) shows higher inactivity rates in comparison with the Bavarian ones, possibly due, among other factors, to the presence, in this district, of a higher rate of elderly people, more likely to be retired.

Taking in consideration the alpine urban districts, it can be observed how they tend to show higher inactivity rates than the alpine districts. Both the urban districts of Kaufbeuren and Kempten display, in fact, higher inactivity rates than the average Bavarian one (respectively, 19.9 and 19.7). Nevertheless, despite some homogeneity, it is not possible for the German Alps to highlight clear alpine – related specificities in the inactivity rates, which appear more linked to the specific district and national situation of the labour market.

Regarding the employment rates, the alpine German districts show values that are in line or higher than the Bavarian employment rate (78.9). The only exception is represented by the district of Garmisch – Partenkirchen, which shows a slightly lower employment rate in comparison with the overall Bavarian one (78.6). The three urban districts of Rosenheim, Kempten and Kaufbeuren also show slightly lower employment rates in comparison with the average employment rate for Bavaria. All the German alpine districts and urban districts show, on the other hand, employment rates above the average German one (75.5).

The last indicator analysed in this focus on the labour market is the unemployment rate, which is complementary to the above presented employment rate. The German alpine districts, with values that range from the 2 of Miesbach, Lindau and Ostallgäu to the 2.5 of Bad Tölz-Wolfratshausen and Traunstein, present unemployment rates in line with the Bavarian average (2.9) and considerably and homogeneously lower than the other Alpine

Countries and the German national average (4.7). Notable exceptions are the three urban – districts (Kreisfreie Städte), which all display values equal or above 4: Rosenheim (4.1), for Kafbeuren (4.4) and for Kempten (4).

The fact that the averages are in line with the Bavarian ones and differentiate themselves from the ones in the other Alpine countries values suggests that the unemployment rate is not mainly determined by the alpine specificity, namely the fact that a district is located or not in the Alps, but is rather linked to the specific socio-economic and labour market situation at local and national level. As a general conclusion drawn from the analysis of the indicators and from the comparison with the other alpine countries, it is possible to state that the German alpine labour market dynamics are more influenced by the overall national context than by the alpine specificity.

### ITALY

The situation of the Italian labour market, in recent years, has suffered from a strong and abrupt changes due to the crisis that hit the world economy. Italy, unlike other contexts, particularly in Europe, continues to show a critical profile also in the last period.

In this far from encouraging scenario the economy of the Alps records trends very similar to those of the entire national territory albeit much less worrying. The indicators of the labour market, which we will introduce, outline a picture of alpine areas that need to be investigated and interpreted in the light of the special features of each district or each valley that constitute the area on which we place our attention.

The following figures are derived from the Labour Force Survey, which is a sample survey harmonized at European level. The Alpine region has been divided into two areas: Western-Alps which includes the alpine municipalities belonging to the regions of Piemonte, Valle d'Aosta, Lombardia e Liguria, while Eastern-Alps includes the municipalities of the autonomous provinces of Bolzano and Trento and regions of Veneto and Friuli Venezia Giulia. To get a meaningful picture of the evolution of the labour market in recent times are taken into account the years 2007, 2010 and 2013, which well describe the situation of the labor market before, during and after the crisis, although this, particularly in Italy, it seems still far from being considered ended.

In fact, the employment rate for people aged 15-64 in 2013 is still the lowest of the whole period (63.3% in Western Alps, 65.4% in Eastern-Alps), and in both divisions loses about 2 percentage points compared to 2007. In the rest of the national territory, the loss is even greater (more than 3% from 58.7% to 55.6%) especially when compared to values lower than those of the alpine setting. The downturn has impacted differently on women and men: while the former pay heavily the effects, recording losses in terms of employment (between 2007 and 2013, the employment rate falls from 75.3% to 71.1% in Western Alps, from 76.3% to 73.3%), the latter remain largely unchanged throughout the period or showing slight fluctuations. The picture in the Alps is entirely consistent with what is happening in the entire national context where employment levels are, however, much smaller, especially for women, where differences for rates are far exceed 10 percentage points.

| | *Males and Females* | | | *Males* | | | *Females* | | |
|---|---|---|---|---|---|---|---|---|---|
| **Employment rate (people aged 15-64)** | **Western-Alps** | **Eastern-Alps** | **Italy** | **Western-Alps** | **Eastern-Alps** | **Italy** | **Western-Alps** | **Eastern-Alps** | **Italy** |
| **2007** | 65,2 | 67,3 | 58,7 | 75,3 | 76,3 | 70,7 | 54,8 | 58,0 | 46,6 |
| **2010** | 64,0 | 66,3 | 56,9 | 73,4 | 74,2 | 67,7 | 54,1 | 58,0 | 46,1 |
| **2013** | 63,3 | 65,4 | 55,6 | 71,1 | 73,3 | 64,8 | 55,2 | 57,4 | 46,5 |

Table 3: Employment rate, 2007-2013.

The sharp decline in labour demand is associated with an increase in supply that cannot find an outlet for employment. The unemployment rate, which before the crisis recorded around 3% in both alpine breakdowns

and which represented an extremely low level, with the crisis it undergoes a sharp increase and in 2013 amounted to 8,6% in Western-Alps and to 6.7% in the Eastern-Alps. Thus, the territories of the Alps show a better situation compared to the national context where the unemployment rate, in the last year, rose to 12.2%. Unemployment shows a very different gender profile compared to employed and also at the local level. Women continue to hold large shares of those who are seeking for employment in their ranks, but the arrival of the crisis has significantly contributed in reducing the distances compared to their male counterparts. At the national level between 2007 and 2013 the differential between women and men for the unemployment rate falls by 3 percentage points to about 1 and a half. Within the Western Alps the gender gap, with the crisis, is practically canceled and in 2013 the unemployment rate for women and men is substantially identical (8.6 to 8.5%). In the Easter division the crisis has not produced any significant change in the distribution between the sexes and affects the growth in the rates in the same way.

| | *Males and Females* | | | *Males* | | | *Females* | | |
|---|---|---|---|---|---|---|---|---|---|
| **Unemployment rate (people aged 15-74)** | **Western-Alps** | **Eastern-Alps** | **Italy** | **Western-Alps** | **Eastern-Alps** | **Italy** | **Western-Alps** | **Eastern-Alps** | **Italy** |
| **2007** | 3,4 | 2,8 | 6,1 | 2,3 | 1,9 | 4,9 | 4,8 | 3,9 | 7,9 |
| **2010** | 5,2 | 4,3 | 8,4 | 4,6 | 3,5 | 7,6 | 6,2 | 5,3 | 9,7 |
| **2013** | 8,6 | 6,7 | 12,2 | 8,6 | 5,9 | 11,5 | 8,5 | 7,6 | 13,1 |

Table 4: Unemployment rate, 2007-2013.

Fluctuations in the labour market do not appear to be reflected on the inactive part of the population and even if input and output exchanges between the two groups are very relevant (see longitudinal data of the labor force - annual report) the overall size of the two contingents do not appear to suffer significant changes. The inactivity rate for people aged 15-64 years in all geographical areas considered undergoes a slight decrease, more accentuated in Western-Alps (32.5% in 2007 and 2010 and 30.7% in 2013) that in Eastern-Alps (from 30.8% in 2007 to 29.8% in 2013). The inactivity characterizes less heavily the Alps respect to the national territory where the rate for 2013 amounted to 36.5% and is an aspect that sees the women take on much larger proportions than men (almost double). With the downturn the male inactivity rate remains almost unchanged over all Alps and suffers a slight increase in overall national context while, for women, between 2007 and 2013, it decreases by about 3 percentage points at the national level and, in somewhat similar, also in all municipalities in the Alps. The gap between the proportion of inactive in the Alps and on the whole national territory, however, is still strong, particularly for women, where the difference grazes the 10 percentage points: in fact in 2013 the inactivity rate for women in Western-Alps is 39,7%, 37.8% in Eastern-Alps while at the national level reaches 46.4%.

| | *Males and Females* | | | *Males* | | | *Females* | | |
|---|---|---|---|---|---|---|---|---|---|
| **Inactivity rate (people aged 15-64)** | **Western-Alps** | **Eastern-Alps** | **Italy** | **Western-Alps** | **Eastern-Alps** | **Italy** | **Western-Alps** | **Eastern-Alps** | **Italy** |
| **2007** | 32,5 | 30,8 | 37,5 | 23,0 | 22,2 | 25,6 | 42,4 | 39,6 | 49,3 |
| **2010** | 32,5 | 30,7 | 37,8 | 23,0 | 23,0 | 26,7 | 42,3 | 38,7 | 48,9 |
| **2013** | 30,7 | 29,8 | 36,5 | 22,0 | 21,9 | 26,6 | 39,7 | 37,8 | 46,4 |

Table 5: Inactivity rate, 2007-2013.

The main indicators of the labour market give us Alps much more dynamic than the whole of the national territory: a less deteriorated employment framework and lower levels of unemployment. Moreover, inside the Alpine setting, the situation is not homogeneous: eastern territories show performance more developed

compared to the western regions.The employment structure per sector of economic activity in the Alps shows similarities and differences as between the two areas taken into account (Western and Eastern Alps), as compared the national context. Western-Alps show a greater propensity to manufacturing activity and construction than the national territory while turns out to be "weaker" in terms of public administration, Professional and support services and real estate, transportation, and on the front of information and communication technologies. With the worsening of crisis (and perhaps also due to a greater awareness of their ability to tourist accommodation) increases the proportion of people employed in accommodation and food service activities (from 5% in 2007 to 6.9% in 2013) and acquire shares of employed in sectors as the other services activities (from 4.8% to 6.6%), where the presence of human services is strong, and education and health (from 13% to 14.1%). In other words, employment shows greater resilience in the fields of essential goods and services that continue to show an attractive market prospects, despite the crisis underway.

| | 2007 | | | 2010 | | | 2013 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Western-Alps | Eastern-Alps | Italy | Western-Alps | Eastern-Alps | Italy | Western-Alps | Eastern-Alps | Italy |
| Agriculture | 3.0 | 4.0 | 4.0 | 3.2 | 4.0 | 3.8 | 2.5 | 4.0 | 3.6 |
| Manifacturing | 30.4 | 24.8 | 22.5 | 26.4 | 24.1 | 20.2 | 27.7 | 22.3 | 20.2 |
| Construction | 9.9 | 8.3 | 8.4 | 10.6 | 8.3 | 8.5 | 9.3 | 7.4 | 7.1 |
| Wholesale and retail trade | 13.4 | 13.4 | 15.2 | 13.9 | 12.3 | 14.7 | 12.3 | 13.7 | 14.8 |
| Accomodation and food service activities | 5.0 | 6.4 | 5.0 | 6.1 | 7.3 | 5.2 | 6.9 | 7.7 | 5.6 |
| Transportation | 3.0 | 2.9 | 3.9 | 3.5 | 3.8 | 4.7 | 3.5 | 3.7 | 4.7 |
| Information and Communication | 2.1 | 2.0 | 2.8 | 1.0 | 1.4 | 2.3 | 1.5 | 2.0 | 2.5 |
| Financial and insurance activities | 3.1 | 2.8 | 2.9 | 2.7 | 2.4 | 2.9 | 2.3 | 2.3 | 2.8 |
| Professional and support services, real estate | 8.2 | 8.2 | 9.6 | 9.1 | 8.7 | 10.6 | 9.5 | 8.5 | 10.8 |
| Public administration | 4.1 | 6.6 | 6.1 | 4.7 | 6.1 | 6.2 | 3.8 | 5.8 | 5.8 |
| Education and healt | 13.0 | 15.8 | 13.7 | 13.2 | 16.6 | 13.9 | 14.1 | 16.7 | 14.5 |
| Other services activities | 4.8 | 4.9 | 5.9 | 5.5 | 5.0 | 7.0 | 6.6 | 6.0 | 7.7 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Table 6: Employment structure per NACE sector, 2007-2013.

In the distribution of employment between employees and self-employment, Western-Alps shows proportions of self-employment much higher than Eastern-Alps. In 2007, the difference is more than 5 percentage points (27.3% vs. 22.2%) but, with the crisis, distances tend to shorten due to the decrease observed in the West side that in 2013 falls to 26.3% . The reason of this finding is the increased presence of business realities of small size that characterize the territory of the Western-Alps. It is also noted that the distance between the two alpine areas is greater than observed with respect to the national context.

In Eastern-Alps significant shares of employment, compared to other contexts under consideration can be observed in accommodation and food service activities and in education and health, while the industrial sector shows markedly lower proportions than Western-Alps (22.3% against 27.7% in 2013) and slightly higher than the national average. The sectors less incisive are financial and insurance activities and professional and support services and real estate that report, over the reference period, a lower occupation than the other geographical

areas considered. During the downturn, even in the Eastern-Alps, some sectors have shown better tightness such as agriculture (which remains stable at 4% over the period), wholesale and retail trade (from 13.4% in 2007 to 13.7 % in 2013, after a decrease in 2010) and those of essential services (other services activities, transportation, and education and health) while the public administration (also due to of the presence of territorial autonomy for the municipalities of the provinces of Bolzano, Trento and Friuli-Venezia Giulia) shows a greater importance here than elsewhere, although in recent years it seems to be scaled down.

| | 2007 | | | 2010 | | | 2013 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Western-Alps | Eastern-Alps | Italy | Western-Alps | Eastern-Alps | Italy | Western-Alps | Eastern-Alps | Italy |
| Employees | 72.7 | 77.8 | 73.9 | 73.3 | 76.9 | 74.8 | 73.7 | 77.5 | 75.3 |
| Self-employed | 27.3 | 22.2 | 26.1 | 26.7 | 23.1 | 25.2 | 26.3 | 22.5 | 24.7 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Table 7: Employees and self-employment, 2007-2013.

In recent years, it grows wherever the proportion of work carried out in part-time mode. The highest percentages of part-timers are recorded in the Eastern-Alps where, between 2007 and 2013, it rose from 16.8% to 18.8%. Even in the Western-Alps the use of part-time rose from 13.1% to 15.7%. Throughout the country the growth of the phenomenon is more relevant with an increase in the period of more than 4 percentage points. The arrival of the crisis has produced, on the one hand the reduction of working hours (in some cases in conjunction with the use of the temporary layoff benefit ) for those who had a job, on the other hand the need of accepting jobs with shorter working time from those who did not have a job but still had the need to have an income even if it lower than expected. As can be seen also in many other contexts, the differences between women and men in the use of part-time are very important: if the proportion of men who adopt this working time arrangement is around 5%, with a slight growth especially in the last period, for women it reaches a level of 30% with a peak of 35% in Eastern-Alps.

| | | Males and Females | | | Males | | | Females | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Western-Alps | Eastern-Alps | Italy | Western-Alps | Eastern-Alps | Italy | Western-Alps | Eastern-Alps | Italy |
| 2007 | Full-time | 86.9 | 83.2 | 86.4 | 96.8 | 95.4 | 94.5 | 73.6 | 66.0 | 73.1 |
| | Part-time | 13.1 | 16.8 | 13.6 | 3.2 | 4.6 | 5.5 | 26.4 | 34.0 | 26.9 |
| | Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2010 | Full-time | 86.3 | 82.4 | 85.0 | 96.8 | 95.4 | 94.5 | 71.2 | 65.0 | 71.0 |
| | Part-time | 13.7 | 17.6 | 15.0 | 3.2 | 4.6 | 5.5 | 28.8 | 35.0 | 29.0 |
| | Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2013 | Full-time | 84.3 | 81.2 | 82.1 | 93.9 | 94.5 | 92.1 | 71.3 | 63.7 | 68.1 |
| | Part-time | 15.7 | 18.8 | 17.9 | 6.1 | 5.5 | 7.9 | 28.7 | 36.3 | 31.9 |
| | Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Table 8: Part-time and full time employers, 2007-2013.

Another feature of employment which in recent years has received considerable attention is the temporary work. At national level, the share of employees with a fixed-term contract is around 13%. With the arrival of the recession has not significantly changed this proportion. In fact, if on the one hand, companies have reduced staff beginning with those who held the weakest job positions, on the other hand they have made use of assumptions with temporary work contracts to cope the fluctuating trends in requests of goods and services which were, however, precarious and uncertain considered the continuation of the crisis. In this context, the Eastern-Alps, registers shares of fixed-term employees fairly stable throughout the period, which amounted to 13.8% in the last year while, in the Western-Alps, the share of fixed-term contracts is slightly lower but grows in the period moving from 11.5% in 2007 to 12.4% in 2013.

| | 2007 | | | 2010 | | | 2013 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Western-Alps | Eastern-Alps | Italy | Western-Alps | Eastern-Alps | Italy | Western-Alps | Eastern-Alps | Italy |
| Fixed-term | 11.5 | 13.4 | 13.2 | 11.4 | 13.8 | 12.8 | 12.4 | 13.8 | 13.2 |
| Permanent | 88.5 | 86.6 | 86.8 | 88.6 | 86.2 | 87.2 | 87.6 | 86.2 | 86.8 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Table 9: Fixed term and permanent employees, 2007-2013.

Unemployment has undergone a rapid growth in recent years mainly as a result of the recession that has stolen employment opportunities to a labour supply ever-increasing, as shown by the indicators seen above. If deepens the analysis, according to some features of the structure of unemployment, it is clear that the younger generations pay more heavily the downturn. The youth unemployment rate (15-24 years), over the period considered, doubled nationwide, from 20% to 40% between 2007 and 2013. But it is especially between 2010 and 2013 that the growth of the phenomenon becomes more relevant.

In the Alpine arc the situation is similar: although the levels are more tight than the Italian global context, the growth of youth unemployment appears even more relevant in the Western-Alps, passing from 9.5% in 2007 to 29.1% in 2013, while in the Eastern-Alps it moves from 7.8% to 23.7% in the same years. In all territorial settings, moreover, there are no particular differences between genders which suffer of increases by the same amount.

| | Males and Females | | | Males | | | Females | | |
|---|---|---|---|---|---|---|---|---|---|
| Young unemployment | Western-Alps | Eastern-Alps | Italy | Western-Alps | Eastern-Alps | Italy | Western-Alps | Eastern-Alps | Italy |
| 2007 | 9.5 | 7.8 | 20.3 | 6.8 | 6.4 | 18.2 | 12.8 | 9.7 | 23.3 |
| 2010 | 14.4 | 12.0 | 27.8 | 13.9 | 9.8 | 26.8 | 15.0 | 15.2 | 29.4 |
| 2013 | 29.1 | 23.7 | 40.0 | 28.8 | 21.6 | 39.0 | 29.5 | 26.5 | 41.4 |

Table 10: Young unemployment, 2007-2013.

A framework that is particularly critical is highlighted by the observation of the long-term unemployment rate (people seeking employment for 12 months and more). In the Alpine arc, the long-term part of unemployment, before the crisis, appeared marginal with values of 1, 2% for Western-Alps and 0.7% in Eastern-Alps in 2007. For the male component, values of the indicator are marginal (0.6% in Western-Alps and 0.3% in Eastern-Alps), while women assume slightly larger levels. Even at the national level low unemployment resulted in low levels of long duration in the period that preceded the crisis. The arrival of the recession has produced a significant change on this front, and a lengthening of the time in job search with rates that, in 2013, achieve 4.4% in Western-Alps and 2.6% in Eastern-Alps compared with 6.9% at national.

This indicator does not show particular differences between men and women who report very similar values showing that the crisis has affected in a similar way both genders in the prospects of finding employment. It should be noted that, if in 2007 the component of long-term unemployment accounted for about a third of the total, with the crisis this tends to cover more than half of people seeking work. This trend can be easily explained by the continuing lack of job opportunities for people who start the search for a job and, failing to find it, they see extending the time of such research ending up to converge in the group of long-term unemployed.

The acronym NEET means young people not in employment and not in any education or training activities. Conventionally this aggregate refers to people aged 15-29 years even though other groupings may be considered depending on the type of analysis to be performed. In other words, this indicator provides a measure of social mismatch that new generations are facing and that can be generated by the difficulty of finding a job after completing a path of study or having it left early. In addition, belong to this group also discouraged young

people who are not seeking employment because they think they cannot find it.

With the great recession that, still today cannot be considered ended, the proportion of young people NEET has increased considerably: between 2007 and 2013 in the Western-Alps it has gone from 7.4% to 14.1%, in Eastern-Alps from 6.7% to 11,2%, while nationally from 12.9% to 18.4%. From the breakdown by gender, we observe a strong differential in favor of men that, however, tends to dwindle in recent years. In the Western-Alps the difference of almost 7 percentage points in 2007 (4% of men versus 10.8% of women), is reduced to about one and a half in 2013 (13.4% versus 14.8%). In Eastern-Alps the phenomenon seems more attenuated although the differences between men and women are more noticeable (9.6% of men compared to 12.8% of women in 2013). At national level the situation of women is even more critical where the share of NEET grazes the 20%.

| | *Males and Females* | | | *Males* | | | *Females* | | |
|---|---|---|---|---|---|---|---|---|---|
| **NEET*** | **Western-Alps** | **Eastern-Alps** | **Italy** | **Western-Alps** | **Eastern-Alps** | **Italy** | **Western-Alps** | **Eastern-Alps** | **Italy** |
| **2007** | 7.4 | 6.7 | 12.9 | 4.0 | 3.8 | 10.4 | 10.8 | 9.6 | 15.5 |
| **2010** | 9.0 | 9.5 | 15.3 | 7.3 | 7.8 | 13.5 | 10.7 | 11.3 | 17.3 |
| **2013** | 14.1 | 11.2 | 18.4 | 13.4 | 9.6 | 17.3 | 14.8 | 12.8 | 19.6 |

* People aged 15-29 years not in employment and not in any education or training activities.

Table 11: NEET, 2007-2013.

## SLOVENIA

In 2011, based on the census conducted among persons aged 15–64 in Slovenia, 33.6% of the population was inactive, i.e. people who were not working, not looking for work and not prepared to accept a jo (Table 12)b. Most of the inactive population is composed of retired persons along with university and high-school students (85%). The same year a 38.4% inactivity rate was recorded among women, which is significantly higher – 9.4 percentage points difference – than the rate of inactive men, which amounted to 29%.

| Census 2011 | Inactivity rate (per 100). TOTAL. | Inactivity rate (per 100). MEN. | Inactivity rate (per 100). WOMEN. |
|---|---|---|---|
| Slovenia | 33.6 | 29.0 | 38.4 |
| Total AC area | 33.7 | 29.1 | 38.5 |
| *Whole LAU2 in AC area* | *34.0* | *29.5* | *38.7* |

Table 12: inactivity rate per gender. Source: Statistical Office of the Republic of Slovenia.

The differences between the inactivity rates of men and women can be largely explained by the following factors:

- women enter the labour market – i.e. become employed – later in life, which is directly related to the fact that far more women than men enrol in tertiary education;
- women retire earlier due to current legal differences between the two sexes related to years of employment and the minimum retirement age;
- there are more men aged 15–74 in Slovenia, mainly as a result of a particular gender distribution of foreigners;

Given the demographic trends and forecasts, Slovenia's inactive population will grow in the future. The expected ageing of the baby boom generation, which is turning into an elderly population (65 years or older), will be reflected in a rapid decline in the working-age population. The numerical ratio between the elderly and working-age population – or in other words, between retired persons and the economically active population – might act as a deterrent to economic development, since a relatively small number of economically active people will need to support a large number of inactive ones. One of the key challenges in the future of the Slovenian labour market is to increase the activity levels among the older working-age population. This applies equally well to Slovenia's Alpine Convention area.

It was precisely in 2011 that there was a significant increase in the number of inactive persons due to increased retirement, for this was the time when the new Pension and Disability Insurance Act, which would tighten the conditions for retirement, was going to enter into force. In this period, many persons aged 50–64 left the labour market in different ways. In general, a low activity rate among the population aged 50–64 is one of the main characteristics of the Slovenian labour market, and it is mainly a result of early retirement.

In 2011, the recorded rate of inactivity among persons aged 15–64 in the Alpine Convention area was 33.7%, and this rate did not substantially deviate from the inactivity rate in Slovenia as a whole (33.6%). In the municipalities that are located entirely within the Alpine Convention area, the inactivity rate was higher by a slight 0.4 percentage points (34.0). The inactivity rate for women and for men from the Alpine Convention area was the same as in Slovenia as a whole and therefore amounted to the following percentages: Among women and men aged 15-64, 38.5% and 29.1% were inactive, respectively, so the difference between the two groups amounted to 9.4 percentage points.

In 38.7%, or 24 out of 62 Alpine Convention municipalities, the inactivity rate was higher than the rate in Slovenia as a whole (33,6%) in 2011. All of these municipalities, except for one, are located entirely within the Alpine Convention area. The difference between the highest and the lowest inactivity rate in the Alpine Convention municipalities was 11.8 percentage points. The highest inactivity rate was recorded in the Ravne na Koroškem municipality (41.6), while the lowest inactivity level, under 30.0, was recorded in the municipalities of Logatec (29.9) and Solčava (29.8).

In 2011 (the 2011 census), the economic activity rate in Slovenia amounted to 58.7%; this means that just over 58% of the working-age population was economically active (i.e. the employed, the self-employed, farmers and unpaid family workers, Table 13). In the same year, the proportion of economically active men belonging to the working-age population was higher than that of economically active women. The economic activity rate (the proportion of economically active persons in the working-age population) amounted to 63.1% for men and significantly less, 54.2%, for women, the difference being 8.9 percentage points.

The year's developments in the labour market reflected the economic crisis that began in 2008, when the rate of economic activity started to decline.

In the Alpine Convention area, the employment rate did not deviate from the employment rate in Slovenia as a whole (only for 0.2 percentage points), and amounted to 58.9% in 2011 (the 2011 census).

| Census 2011 | Employment rate (per 100), TOTAL | Employment rate (per 100), MEN | Employment rate (per 100), WOMEN |
|---|---|---|---|
| Slovenia | 58.7 | 63.1 | 54.2 |
| Total AC area | 58.9 | 63.5 | 54.0 |
| *Whole LAU2 in AC area* | *59.1* | *63.8* | *54.0* |
| *Part LAU2 in area* | *58.7* | *63.2* | *54.0* |

Table 13: employment rate per gender. Source: Statistical Office of the Republic of Slovenia.

A higher percentage of economically active persons (among the working-age population, that is persons aged 15–64) was found in 63.9% or 39 of the 62 municipalities in the Alpine Convention area than in Slovenia as a whole (58.7%) . In all the municipalities that are only partially located in the Alpine Convention area, the activity rate was higher, except in the municipalities of Maribor (53.8) and Rače - Fram (58.3). The difference between the highest and the lowest activity rate in the Alpine Convention area was 14.3 percentage points. The highest activity rate was recorded in the municipality of Železniki (65.2), while the lowest was recorded in the municipality of Ribnica na Pohorju (50.8). In 2011, economic activity rates were lower mostly in municipalities in the eastern part of the Alpine Convention area – the regions of Pohorje and eastern Karavanke.

The rate of employed and self-employed men is higher than the rate of employed and self-employed women in all Alpine Convention municipalities.

In 2011 (the 2011 census), the economic activity rate (the proportion of economically active persons in the working-age population) in the Alpine Convention area was 63.5% for men and 9.5 percentage points less for women (54.0%). In the Alpine Convention area, the differences between the rates of economically active men and women in 2011 ranged from 19.5 percentage points in the municipality of Podvelka to only 2.5 percentage points in the municipality of Solčava.

In 2011 the economic activity rate for women in the Alpine Convention area did not deviate substantially from Slovenia as a whole, yet there were significant differences in values between individual Alpine Convention municipalities, ranging from 60.3% to 41.2%.

The maximum percentages of economically active women were recorded in the municipalities of Logatec (60.3%), Jezersko (59.5%), Solčava and Železniki (59.2), while the rates were lowest in the municipalities of Ribnica na Pohorju (41.2% ) and Podvelka (41.3) – the latter two municipalities have the lowest economic activity rates and the largest differences in economic activity rate between women and men.

In 2011, at the level of Slovenia the proportion of registered unemployed persons in the labour force (i.e. the registered unemployment rate) was 11.5 (Table 14). Also as in the working activity of the population, there are large differences in unemployment between men and women. The proportion of unemployed men (11.1%) was lower than the proportion of registered unemployed women (12.0%).

| Census 2011 | Unemployment rate (per 100), TOTAL | Unemployment rate (per 100), MEN | Unemployment rate (per 100), Women | Young unemployment rate (per 100) for 15-24 age group, TOTAL | Young unemployment rate (per 100) for 15-24 age group, MEN | Young unemployment rate (per 100) for 15-24 age group, WOMEN |
|---|---|---|---|---|---|---|
| Slovenia | 11.5 | 11.1 | 12.0 | 24.0 | 20.9 | 30.0 |
| Total AC area | 11.2 | 10.5 | 12.2 | 23.8 | 20.4 | 30.5 |
| *Whole LAU2 in AC area* | *10.5* | *9.4* | *11.9* | *21.8* | *18.8* | *27.7* |
| *Part LAU2 in AC area* | *11.8* | *11.3* | *12.4* | *25.5* | *21.8* | *32.9* |

Table 14: unemployment and young unemployment rate per gender. Source: Statistical Office of the Republic of Slovenia.

In municipalities in the Alpine Convention area in 2011, an overall proportion of registered unemployed persons was 11.2 and did not deviate materially from the proportion of registered unemployed at the level of Slovenia. In municipalities, situated entirely in the Alpine Convention area, this proportion compared with a total Alpine Convention area was lower for 0.7 of a percentage point and was 10.5%, while in municipalities, situated partly in the Alpine Convention area, this proportion was higher for a half (0.5) of a percentage point.

This year, in the Alpine Convention area 25 out of 62 municipalities or 42% of municipalities of the Alpine Convention showed higher rate of unemployment than the Slovenian average (over 11.5%). Difference between the highest and the lowest registered unemployment rate in the Alpine Convention area was 12.2 of a percentage point. In 2011, municipalities Podvelka (16.8%), Ribnica na Pohorju (16.4%) and Ruše (16.2%), Maribor (16.1%) were faced with the highest unemployment in the Alpine Convention area – with more than 16 percent of registered unemployment rate. All these municipalities are situated in the eastern part of the Alpine Convention.

But this year, in some municipalities in the Alpine Convention area the lowest registered unemployment rate in Slovenia war recorded. The lowest – less than 5 percent – was in municipality Cerkno (4.6%). Municipalities Železniki (5.1%), Gorenja vas – Poljane (5.4%) and Jezersko (5.6%) also stood out for the lowest registered unemployment rate (less than 6%).

This year, also in the Alpine Convention area the proportion of registered unemployed men (10.5%) was lower than the proportion of registered unemployed women (12.2%), but difference in the unemployment rate between the two was slightly higher and was 1.7 of a percentage difference. In most municipalities of the Alpine Convention – approximately 74.2% of all municipalities of the Alpine Convention – in 2011, registered unemployment rate of women was higher than registered unemployment rate of men. Difference in the unemployment rate between women and men was slightly higher in municipalities, situated entirely in the Alpine Convention area, namely for 2.4 of percentage points. Differences in the unemployment rate between women and men were in some municipalities of the Alpine Convention very high. These municipalities also at the level of Slovenia recorded the highest values of differences in the unemployment rate where the unemployment rate of women was significantly higher than the unemployment rate of men. In municipality Podvelka, the unemployment rate of women was higher for 14.3 of a percentage point than the unemployment rate of men, in municipality Ribnica na Pohorju, this difference was in the amount of 14.4 of percentage points. Large differences in the unemployment rate between women and men, in which the unemployment rate of women was significantly higher than the unemployment rate of men, were also in municipality Muta (9.1), Radlje ob Dravi (8.9), Vuzenica (9.5), Mežica, Ravne na Koroškem (8.3). These municipalities are overall characterized by a high unemployment rate of women. Municipalities where in 2011, more than 20 percent of the unemployment rate of women were recorded, are: Podvelka (25.3%), Ribnica na Pohorju (24.8%), Muta (21.1%), Radlje ob Dravi (20.4%). All these municipalities are situated entirely in the Alpine Convention area, in its eastern part or in Koroška.

On the contrary, for the majority of municipalities where in 2011, a relatively low unemployment rate was recorded, also a small difference or uniformity in the unemployment rate between women and men was characterized. 25.8% or 16 out of 62 municipalities in the Alpine Convention area recorded higher unemployment rate of men than the unemployment rate of women. Differences were relatively low – from 0.1 to 3.9 of percentage points in municipality Solčava, which otherwise recorded 13.6 percent of unemployment.

In 2011, at the level of Slovenia registered unemployment rate of young people aged 15 to 24 years was 24.0 of percentage points. Difference between men and women in this age group was very high. The proportion of registered unemployed men in this age group (20.9%) was lower for 9.2 of percentage points from the proportion of registered unemployed women (30.0%).

In 2011, in the Alpine Convention area the youth unemployment rate (15-24 years) did not diverge significantly from the unemployment rate of this age group at the level of Slovenia and was 23.8. This year was also here recorded a high difference in the unemployment rate between women and men. The proportion of registered

unemployed men in this age group (20.4%) was lower for 10.1 of percentage points from the proportion of registered unemployed women (30.5%).

But this year, difference in the unemployment rate between municipalities, situated entirely in the Alpine Convention area (21.8%), and those, situated partially in the Alpine Convention area (25.5%), was recorded.

Higher youth unemployment rate (15-24 years) than recorded unemployment rate of this age group at the level of Slovenia (24.0%) was recorded in 2011 in 43.5 percent (or in 27 out of 62) municipalities of the Alpine Convention. Difference between the highest and the lowest youth unemployment rate in municipalities of the Alpine Convention was this year the whole 43.8 of percentage points. The highest youth unemployment rate was recorded in municipality Lovrenc na Pohorju (48.1) and the lowest in municipality Gorenja vas – Poljane – 4.2%.

### SWITZERLAND

The data for the focus on the Swiss labour market have been derived from public databases and are available on NUTS 3 (Cantonal) level. Even though the geographical level of analysis is not as detailed as the municipal one, these data allow comparing three main typologies of Cantons: the ones that are located completely in the Alpine Convention perimeter, the ones that are only partially located within it and the ones that are completely located outside it. Moreover, additional conclusions can be drawn through the comparison of the values in these three typologies of Cantons with the national Swiss averages.

Three main indicators are considered within this national focus on the labour market: the activity rate, the employment rate and the unemployment rate. The selection of these indicators, equal to the ones that are analysed in the general section of the RSA 5 report, is motivated by the need to obtain information that, although collected on a different geographical level, would be comparable to that concerning the other alpine countries.

Regarding the first indicator (inactivity rate), in general, the Cantons that are completely included in the Alpine Convention perimeter display higher values than the national Swiss average value (19.78); the highest inactivity rate is registered in the Ticino Canton (28). Notable exceptions are represented by the Cantons of Obwalden, Glarus and Appenzell A. Rh. who have inactivity rates equivalent or higher than the national averages.

On the contrary, both the Cantons that are only partially included in the Alpine Convention Perimeter and the ones completely outside the Alpine Convention Perimeter, display inactivity rates lower than the national Swiss average. In general, these differences appear to be related both to alpine – specific features and to national specific features.

On the one hand, among other factors, the higher inactivity rate observable in the Alpine Swiss area can be associated to the higher presence of elderly population. As an example, the rate of people older than 65 years old in Ticino (which is the Canton, among the alpine ones, displaying the higher inactivity rate) is 21.04, while in Glarus – one of the alpine Cantons with a lower inactivity rate - it amounts to 8.10. On the other hand, the data show country - related specificities: inactivity rates cannot be straightforwardly associated with the fact that a Canton is located or not in the Alpine Convention perimeter, but rather the specific socio – economic and labour market situation in Switzerland and in the single Cantons seem to have a higher influence.

The same dynamics can be highlighted in analysing the employment rates at Canton level, displayed in Annex D.

At an average level, the Cantons fully set in the Alpine Convention Perimeter have a lower employment rate (74.4) than the average Swiss rate (79.4). Nevertheless, this value is influence by the low rates of some Cantons, since half of the ten Cantons fully included in the Alpine Convention perimeter show rates that are even higher than the average Swiss one. These low values can be observed in the Cantons Ticino (66.22), Valais (74.2) and

Uri (76.5), while values above the average can be observed in the Cantons Appenzell Ausserrhoden (80.3), Glarus (80.5) and Obwalden (82.5).

All in all, also the Cantons only partially located in the perimeter of the Alpine Convention display a heterogeneous picture, which suggests that employment rates are more linked to the specific territorial and to the within – country situation rather than to the fact that a Canton belongs or not to the Alpine Convention Perimeter.

Regarding the unemployment rate, the data show a similar absence of clear alpine-related patterns. In parallel with the values displayed for the employment rates, the Cantons located in the perimeter of the Alpine Convention generally present average lower unemployment rates than the average Swiss national one (4.2). Among these, Uri (1.30) and Obwalden (1.34) show the lowest unemployment rates Switzerland-wide. Nevertheless, the Cantons of Ticino and Valais, both entirely located in the Alpine Convention Perimeter, present values that are above the national average unemployment rate. A comparison with the Cantons that are not located within the perimeter of the Alpine Convention and with the ones that are only partially located within it confirms this heterogeneous pattern: all, in all, the overall average unemployment rate in non-alpine Cantons is higher than the national one (5.25), with differences at cantonal level (such as in the Canton Genève, which displays the highest unemployment rate Switzerland – wise, with a rate of 10.74).

Finally, Cantons partially located in the perimeter of the Alpine Convention and partially not, have the lowest overall average unemployment rate of the three typologies considered (4.63) in comparison with the Swiss average. Nevertheless, such as for the other typologies of Cantons, internal differences can be identified: for example, the Cantons Freiburg (4.96) and Vaud (7.68) have unemployment rates that are higher, even substantially, than the national averages. As a general conclusion it is not possible to state that the labour market in the Swiss Cantons located in the Alpine Convention Perimeter has clear specificities in comparison to the non - alpine Swiss areas. Also here, local drivers and the national situation seem to play a more relevant role.

## 3.3 Education

Education plays a vital role in both the economic and social context and the development of the education sector can give important information on the development of demographic dynamics (Eurostat, 2010). The presence of schools and universities in a territory and the commuting distances to education facilities can influence the persistence of young population and their families, at least during the studies' period. Moreover, education level, the labour market and demographic trends are dynamically intertwined. The younger and better qualified population is usually more mobile than the older one; therefore, the absence of an adequate job offer for qualified young people is likely to favour their location towards peri-Alpine areas, where higher rates of highly qualified job can be found. This phenomenon, common both to mountain areas and other geographically marginal areas, is also defined as "brain drain", namely the emigration of skilled labour force to more favourable areas that offer better opportunities (Corrado et al., 2013). This phenomenon may relate to different segments of society, but it seems particularly evident when it affects young people in the process of access to higher education.

The Alpine area's general situation is very heterogeneous considering the rate of university graduates in relation to the total number of residents over 15 years for the municipalities of the eight Alpine countries. This is because education policy may be strictly influenced by the education systems present in the various Alpine countries, having as a result a spatial distribution of education levels which is more related to the country level, rather than to "Alpine special characteritics". Moreover, national education systems vary in length, social status or other characteristics, producing outcomes that are not fully comparable.

These patterns are clearly observable in the distribution of the rate of the completed secondary and tertiary education . As for the chapter on labour market, also in this section data for Germany and Switzerland have been collected at NUTS 3 level and therefore their cartographic representation is shown separately.

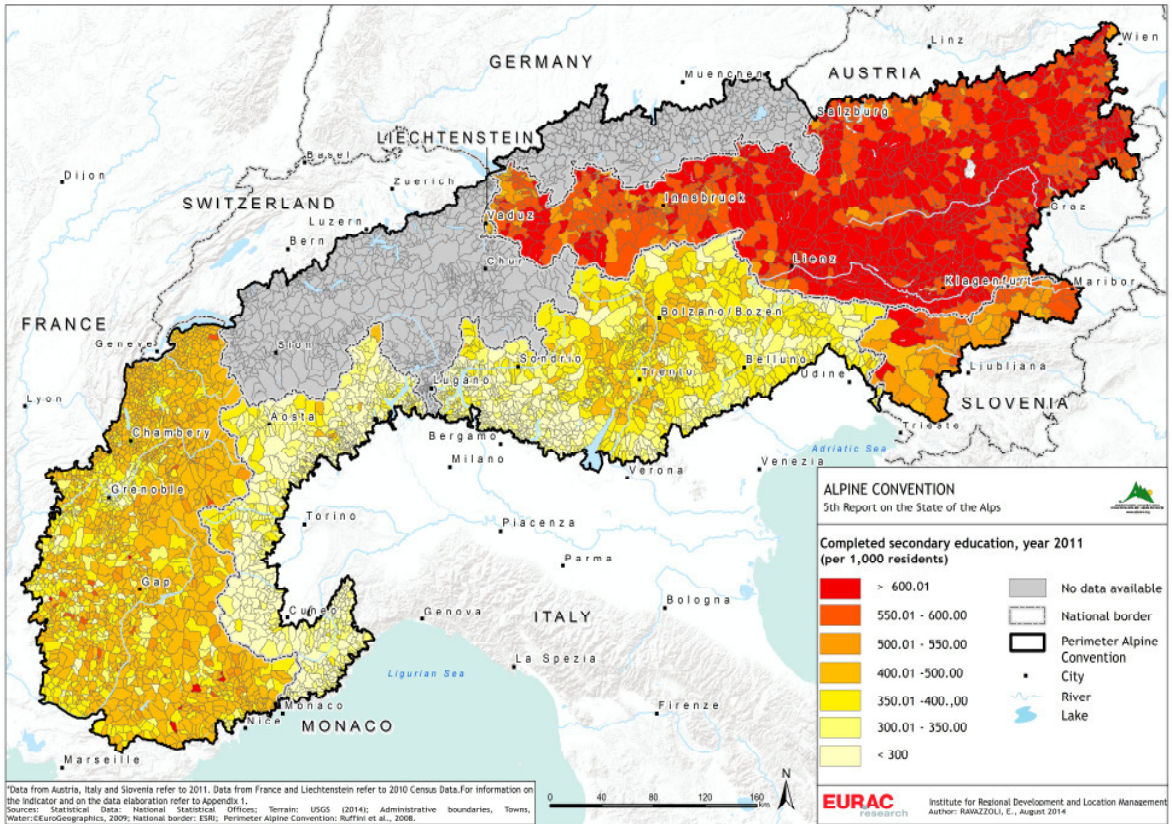



Figure 15: Completed secondary education

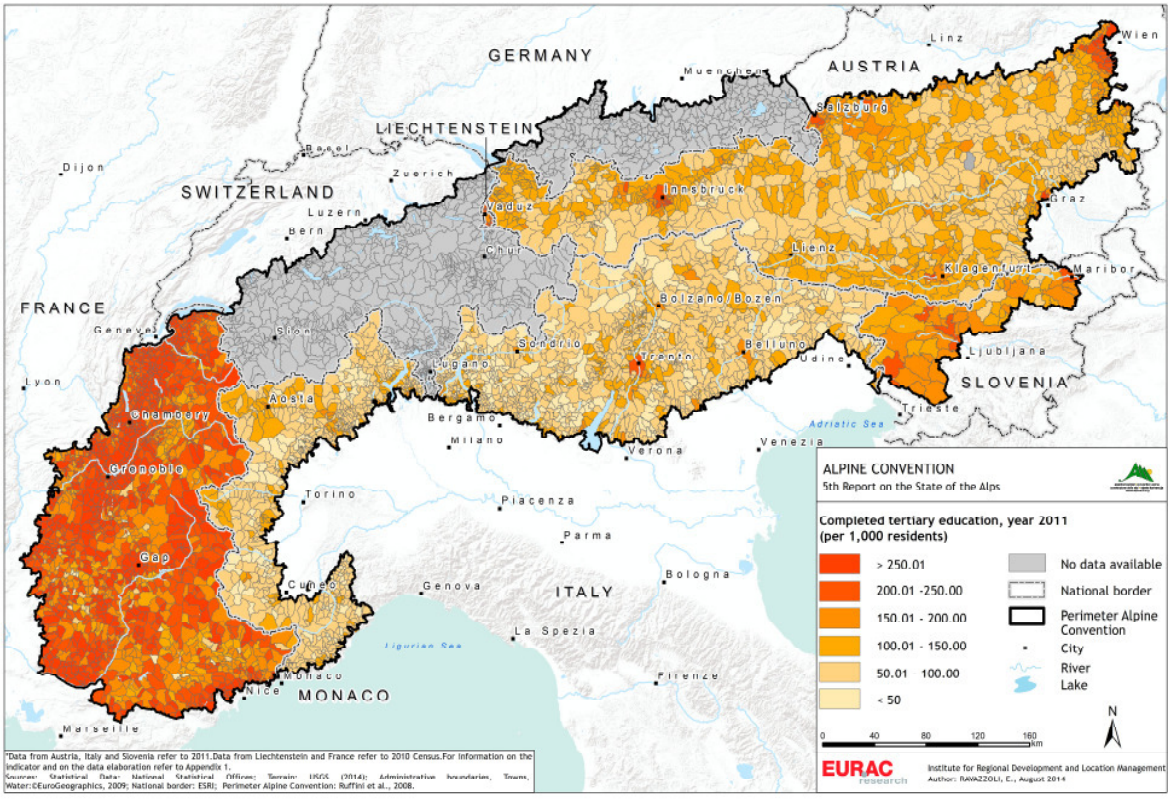



Figure 16: Completed tertiary education

# NATIONAL CONTRIBUTIONS

## AUSTRIA

The Austrian National Contribution will be integrated in the REV1 version.

## FRANCE

The education level of the population is significantly higher than national average (4 points higher in secondary education and 3 points in tertiary education), since employment in those cities (notably Grenoble and Geneva) is highly skilled. But the education level of the population living in the central part of the area, far from major cities, is not significantly lower than national average, except in the tertiary level (enseignement supérieur post-bac): this can probably be explained by the arrival, in those areas, of retired and semi-retired citizens coming from Paris and other large French towns.

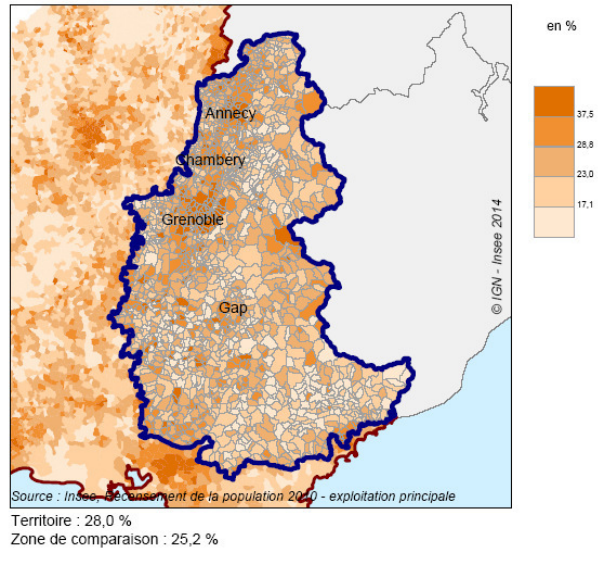



Figure 1: Completed secondary education, 2010.

## GERMANY

For this national focus, the data regarding the levels of education of the German alpine population have been derived from public databases and are available on NUTS 3 level, including two main administrative units: the districts (Kreise) and the urban districts (Kreisfreie Städte).

The analysis of the education dynamics is based on two main indicators: the rate of population that has attained a secondary education level and the rate of population that has attained a tertiary education level. Due to the differences that can be found among education systems cross the Alps, it is worth specifying that, as a secondary education level, we refer here at the ISCED (the UNESCO International Standard Classification of Education) levels 3 and 4 (*Sekundarbereich II* and *Nichttertiäre Bildung nach dem Sekundarbereich*), while, under the term "tertiary education", we refer to the ISCED levels 5 and 6 (*Tertiärbereich Stufe I* and *II*) (EUROSTAT, 2014).

The level of education is connected in many aspects to other relevant social and demographic factors. Specifically, in the German context, higher education levels still are associated with higher employment possibilities, despite the broader changes occurring in the labour market (Bundesministerium für Bildung und

Forschung, 2014). Moreover, a higher education level is also connected to health factors, with persons having a higher level of education tending to be more active. Finally, education is also connected to social aspects such as the political interest and participation (ibid., 2014).

Regarding the rate of population which completed an upper secondary education cycle, the German Alpine districts and urban districts show levels of secondary education ranging from a lowest value of 432 residents on 1,000 (urban district of Kaufbeuren) to a highest value of 531 (districts of Ostallgäu and Oberallgäu). All in all, except the already mentioned value in the urban district of Kaufbeuren and the value recorded in the district of Berchtesgadener Land (447), all the Alpine German districts display secondary education values that are higher than the Bavarian average (459) and the German average (460).

The analysis of the tertiary education level gives a complementary picture to the one of the secondary education level. The rates of residents with a tertiary education level in the German alpine area range from a lowest value of 105 each 1,000 inhabitants in Ostallgäu to a highest value of 168 in the district of Miesbach.

In general, the German alpine districts and urban districts display values of tertiary education lower, also relevantly, than the Bavarian (147) and German (150) average. Asides from the already mentioned value for the district of Miesbach, only two other alpine administrative units display tertiary education rates higher than the Bavarian and German averages: the urban district of Rosenheim (with 148 inhabitants on 1,000 having completed a tertiary study cycle) and the district of Berchtesgadener Land (168 inhabitants on 1,000 with a tertiary education level).

All in all, the data show that, although differences can be observed according to the specific socio – economic situation and the education offer in the single district, and while the participation of the population to secondary and tertiary education in Bavaria from 1998 to 2013 has increased (Bundesministerium für Bildung und Forschung, 2014), the alpine German areas still present lower levels of tertiary education than the average Bavarian and German ones. Despite some localized exceptions, the average lower tertiary education values of the German alpine areas seem directly associated to higher levels of secondary education, compared with the Bavarian and German averages.

As a conclusive remark, it can be stated that residents in the alpine German areas have higher levels of secondary education, but lower levels of tertiary education compared to national averages. This phenomenon can be partly explained with the fact that persons with a tertiary level of education may tend to concentrate outside mountain areas, where the work opportunities would correspond more to the education level acquired.

### ITALY

Italy is a country that traditionally has always had education levels of the population lower than the other European countries. Although in recent years there is a trend of reducing the gap, the distances are still evident. At national level, less than half of the population aged 15 years or more has completed secondary or tertiary education. During the years that have been taken into account, however, it notices a growth in the proportion of the population with these qualifications although the change, for this phenomenon, has generally need very long time to be evaluated.

In Western-Alps, about a third of the population attained a level of secondary education in 2007, while in 2013 this figure rises to 35.8% showing a profile very similar to the national average. East-Alps shows percentages lightly more over and in 2013 the population who has completed secondary education exceeds 40%. As far as this indicator can be observed a slight gender gap in favor of men, about 3 percentage points, which is constant over the entire period and in all geographical areas considered.

| | Males and Females | | | Males | | | Females | | |
|---|---|---|---|---|---|---|---|---|---|
| People, aged 15 years and more, who have completed secondary education | Western-Alps | Eastern-Alps | Italy | Western-Alps | Eastern-Alps | Italy | Western-Alps | Eastern-Alps | Italy |
| 2007 | 33.3 | 36.2 | 33.3 | 34.7 | 37.9 | 34.6 | 32.0 | 34.6 | 3 |
| 2010 | 33.8 | 38.9 | 34.5 | 34.4 | 40.6 | 36.1 | 33.2 | 37.2 | 3 |
| 2013 | 35.3 | 40.7 | 35.8 | 36.7 | 43.1 | 37.2 | 33.9 | 38.5 | 3 |

Table 1: Completed secondary education, 2007-2013.

The situation is very different if we consider the population of 15 years and over who have completed tertiary education. Both alpine areas show lower percentages compared to the national context, particularly in the West (in 2013, 9.2% in Western-Alps, 11.1% in Eastern-Alps and 12.3% Italy). In all areas, however, even this indicator is growing, and it confirms the slow trend to achieve higher levels of education by the younger generation. On the basis of this indicator is the female component that shows a better performance than men: everywhere the advantage of the women results in higher odds of about 1-1.5 percentage points over men. In 2013, in the Western Alps-the distance is even more remarkable where the share of women with tertiary education is 10.6% compared to 7.8% of men.

| | Males and Females | | | Males | | | Females | | |
|---|---|---|---|---|---|---|---|---|---|
| People, aged 15 years and more, who have completed tertiary education | Western-Alps | Eastern-Alps | Italy | Western-Alps | Eastern-Alps | Italy | Western-Alps | Eastern-Alps | Italy |
| 2007 | 7.7 | 9.1 | 10.2 | 7.1 | 9.6 | 9.9 | 8.2 | 8.7 | 1 |
| 2010 | 8.3 | 9.8 | 11.1 | 7.7 | 9.6 | 10.6 | 8.8 | 9.9 | 1 |
| 2013 | 9.2 | 11.1 | 12.3 | 7.8 | 10.3 | 11.6 | 10.6 | 11.9 | 1 |

Table 2: Completed tertiary education, 2007-2013.

The increased presence of people with secondary education levels in the Alps than the national average, and vice versa as regards tertiary education, find a reason in the economy and in productive structure of the Alpine territories that require more applicative and technical skills that can be easily implemented into manufacturing and in the accommodation and food service activities that are most characteristic of these areas. In addition, the North has always shown levels of education of the population on average higher than that derived from a higher education of the older generations who acquired a more massive secondary education compared to what was happening in the rest of the country.

## SLOVENIA

In Slovenia, in accordance with international recommendations the education is accompanied for persons aged 15 years or more even though in developed countries (including Slovenia), a large majority of children who have completed primary education continue their education. More detailed research shows that the level of education in Slovenia in the last decade increased due to the development of a network of colleges and universities, many new forms of education (e.g. E-Learning) and a sharp increase of participation in tertiary education.

| Census 2011 | Completed secondary education (per 1000 residents aged 15+)* | | | Completed tertiary education (per 1000 residents aged 15+) – TOTAL** | | |
|---|---|---|---|---|---|---|
| | Completed secondary education (per 1000 residents aged 15+) - TOTAL | Completed secondary education (per 1000 residents aged 15+) - MEN | Completed secondary education (per 1000 residents aged 15+) - WOMEN | Completed tertiary education (per 1000 residents aged 15+) - TOTAL | Completed tertiary education (per 1000 residents aged 15+) - MEN | Completed tertiary education (per 1000 residents aged 15+) - WOMEN |
| Slovenia | 533.5 | 600.5 | 468.7 | 174.9 | 152.7 | 196.3 |
| Total AC area | 544.7 | 613.4 | 478.0 | 173.0 | 151.8 | 193.6 |
| Whole LAU2 in AC area | 542.9 | 616.6 | 470.8 | 151.7 | 130.0 | 172.8 |
| Part LAU2 in AC area | 546.0 | 610.9 | 483.3 | 188.8 | 168.0 | 208.9 |

Table 3: education attained in Slovenia. Source: Statistical Office of the Republic of Slovenia
* Completed secondary education: Short-term vocational upper secondary, Vocational upper secondary, Technical, general upper secondary. **Completed tertiary education: Short-term higher (former), higher vocational, 1st cycle of higher, professional higher (former) etc., 2nd cycle of higher, professional higher (former) etc., "Magisterij" of science (former) etc. Doctorate of science.

In 2011, in Slovenia 533.5 per 1,000 people aged over 15 years have completed *secondary education*. The number of men with secondary education (600.5 per thousand people aged over 15 years) was higher than the number of women with the same education (468.7 per thousand people aged over 15 years)

In the last decade, in Slovenia the number of people with general upper secondary and secondary education increased, while it should be noted that the number of people with lower and upper secondary vocational education also reduced significantly. The reason for such marked drop of this educational group is partly in the lack of interest of young generations for enrolment in lower and upper secondary vocational education and partly in the fact that those who have completed such education often continue their education in programs for secondary education.

In Slovenia, as expected, in the last decade the number of people with incomplete primary education is rapidly decreasing, as this level of education is characterized especially for people who are no longer in employment (61% of people with such education are older than 64 years).

In the Alpine Convention area, in 2011 544.7 per 1,000 people aged over 15 years have completed secondary education which is slightly higher than at the level of Slovenia (533.5 per thousand people aged over 15 years). Just as at the level of Slovenia, this year the number of men with secondary education (613.4 per thousand people aged over 15 years) was higher than the number of women with the same education (478.0 per thousand people aged over 15 years).

In 2011, more than a half or 55.6 percent of municipalities of the Alpine Convention had higher proportion of people who have completed secondary education than it was recorded this year at the level of Slovenia. The highest proportion of people who have completed secondary education was recorded in municipality Kanal (527.5 per thousand people aged over 15 years) and the lowest in municipality Cerkno (465.5 per

thousand people aged over 15 years).

In 2011, every sixth inhabitant of Slovenia older than 15 years had at least *higher education (tertiary education)*. This year, 174.9 persons with at least higher education per 1,000 people aged over 15 years were therefore recorded. The number of women with higher education (tertiary education) (196.3 per thousand people aged over 15 years) was for one-third higher than the number of men with the same education (152.7 per thousand people aged over 15 years).

In the Alpine Convention area, this year slightly fewer people in a population were with at least higher education than at the level of Slovenia (173.0 per thousand people aged over 15 years). Higher proportion of higher educated people than at the Slovenian level was in 23.8 percent of municipalities of the Alpine Convention. The highest proportion of people with at least higher education (tertiary education) was in municipality Žirovnica (228.8 per thousand people aged over 15 years) and the lowest in municipality Podvelka (79.9 per thousand people aged over 15 years). However, more detailed insight showed a significant difference between municipalities, situated entirely in the Alpine Convention area, and those that extend only partially into it. In the latter, the proportion of people with at least higher education (tertiary education) was higher than at the level of Slovenia (174.9 persons with at least higher education per 1,000 people aged over 15 years) and was 188.8 persons per 1,000 people aged over 15 years. This information coincides with the fact that in these municipalities larger urban centres are situated.

On the contrary, in municipalities that extend entirely into the Alpine Convention area, the proportion of people with at least higher education (tertiary education) was lower than at the national level and was 151.7 people with at least higher education per 1,000 people aged over 15 years.

Also in the Alpine Convention area as well as at the level of Slovenia, the number of women with at least higher education (193.6 per thousand people aged over 15 years) is higher than the number of men with the same education (151.8 per thousand people aged over 15 years).

### SWITZERLAND

As in the Swiss national focus regarding the labour market, this focus on education is based on data derived from public databases, which are available on NUTS 3 (Cantonal) level. The analysis compares the Cantons that are fully located within the Alpine Convention perimeter, the ones that are partially located in the Alpine Convention perimeter and the ones that are located fully outside. Moreover, the data are compared with the Swiss national means.

The analysis of the education sector is based on two main indicators: the rate of population that has attained a secondary education level and the rate of population that has attained a tertiary education level. For comparability reasons with the other data analysed in the general part of the report and in the national contributions of the other alpine countries, the indicators have been calculated as ratio of persons with a completed secondary or tertiary education per 1,000 inhabitants older than fifteen. The values for the indicators here displayed may therefore vary from the ones displayed in other statistical publications: for example, in the Statistical Swiss Atlas, the percentages are calculated on the total population older than twenty-five (BFS, 2014). Moreover, due to the differences that can be found among education systems Alp-wise, it is worth also specifying that as a secondary education level, we refer here at the upper secondary education (*Sekundär Stufe 2*), while, under the term "tertiary education", we encompass universities and institutes of technology (*Eidgenössische Technische Hochschulen*), universities of applied science (*Hochschulen*) and advanced vocational training.

Regarding the rate of population which completed an upper secondary education cycle, the data show a heterogeneous picture both for Cantons fully located in the perimeter of the Alpine Convention as well as for

the other areas.

In general, the Cantons located fully in the alpine Convention Perimeter show a higher rate of persons with a completed secondary education (473.87) in comparison, with the Cantons partially located in the Alpine Convention Perimeter (470.17), with the ones located completely outside the Alpine Convention Perimeter (459.01) and with the Swiss national average (468.87).

The values for the Alpine Cantons range from a lowest rate of 451.54 (Canton Ticino) to a highest rate of 536.82 (Canton Appenzell Innerrhoden); in the partially alpine Cantons, values range from 388.50 (Vaud) to 515.25 (Bern). Between the Alpine and partially alpine Cantons, the levels of secondary education appear quite homogeneous, and the differences can be explained with internal Canton - related specificities rather than with the fact that a Canton is fully or only partially located in the Alpine Convention Perimeter. On the contrary, a more relevant, although limited, difference in secondary education levels can be observed between the Cantons fully and partially located in the Alpine Convention perimeter and the non-Alpine ones.

The analysis of the tertiary education level gives a complementary picture to the one of the secondary education level. The average value of the rate of persons with a tertiary education level in the Cantons that are entirely located in the perimeter of the Alpine Convention is lower (218.83) than the average Swiss national rate (265.91). A lower average value of attained tertiary education can also be observed for the Cantons that are only partially located in the Alpine Convention (251.93), while the Cantons fully located outside the perimeter of the Alpine Convention have a rate (289.97) that is higher both than the Alpine ones and than the average Swiss rate.

As a conclusion, although the levels of education appear related to the cantonal specificities, differences are observable between the Alpine or partially Alpine Swiss Cantons and the Cantons that are located fully outside the Alpine area: the first ones display higher levels of secondary and lower level of tertiary education in comparison to the second ones. This suggest two possible interpretations: on the one hand, higher qualified people could tend to concentrate more in proximity of the urban non-alpine Swiss areas, where a job offer corresponding to the education level attained would more likely be present. On the other hand, it can be supposed that people residing closer to urban areas would more likely attain a higher level of qualification, due to the proximity of higher education institutions.

GOOD PRACTICES

THE BLENDED LEARNING EXPERIENCE AT THE MOUNTAIN UNIVERSITY (Italy)

Issues:

- implementation of educational opportunities for mountain young people (e.g. primary schools in sparsely populated areas, professional schools training up the traditional activities, universities avoiding emigration and brain drain)
- creation of qualified employment dealing with the brain drain phenomena
- innovative solutions for providing services in sparsely populated areas
- innovation as a driver of a sustainable development which preserve culture and population.

Type of measure:

- pilot action: Mountain University in Edolo (BS).

Funding: Framework Agreement between Ministry of Education, University and Research and University of Milan (n. 1293, on August 5th 2011) – affirmation of Edolo as the Centre for Excellence "Mountain University". This Framework Agreement is intended to consolidate and strengthen the Edolo Campus favoring its evolution as a university centre of excellence.

Background:
The center will promote and experiment methodological and operational innovation specifically for the characteristics, complexity and needs of mountain areas, through the activation of an increasingly skilled and diversified training offer together with fruitful research on the resources and priority issues for the development of the said areas.
The Mountain University, in particular, is careing an important **experimentation of teaching methodologies** for mountain theme-targeted trainings. In particular, the **blended learning** methodology is experiencing a wide use in **university-level, specialising and seminar trainings** provided at Edolo.
Such methodology perfectly meets the **objectives** that the Mountain University has set with the described initiative:

- Facilitating the **spread of information and training** to all subjects that are in various ways interested to issues related to the valorisation and protection of mountain territories in all their forms;
- Supporting **self-training of large swathes of population**, also residing in distant and poorly connected mountain areas, on the themes of valorisation and protection of mountain territories, through a flexible teaching methodology, free of any spatio-temporal constraints and accessible to all;

The strong points of the experience of the Mountain University are, indeed, the strong establishment of this reality in the mountain territory and the focus on topics concerning the development and valorisation of mountain territories, in all their forms.
The experience deals with two different action levels:

1. **Technological level: new teaching tools**
   - Use of Virtual Classrooms for remote streaming connections or videorecording of seminars, classes and conferences, subsequently available on the the e-learinng platforms in use;

- Use of digital tools for teaching: digital chalkboards integrated to the virtual classrooms, interactive e-learning platforms (Ariel, Moodle, Wiggio/Blackboard), digital e-books and databases.

2. **Methodological level: new teaching strategies**
   - Experimentation of new pedagogical approaches: Complex Learning and Collaborative Learning.

**Implementation:**

From 2002 on, the Mountain University has been providing, through distance learning (Virtual Classrooms for connections and remote transmission of conferences and seminars), **121 seminars** to which about **1174 people** have taken part though virtual classroom (Table 1).

| PARTICIPANTS to the seminar activities | |
|---|---|
| In person | Through Virtual Classroom |
| 3110 | 1174 |
| Total 4284 | |

Table 1. Number and type of participants to seminar activities (July 2014).

Distance learning has significantly widened the range of the benefiting population, with several classrooms and private entities connecting from different locations of the Alpine arc (e.g. Domodossola, VB, thanks to the collaboration with the ARS.UNI.VCO Association). Several institutes and users have also connected from **different Italian regions**.

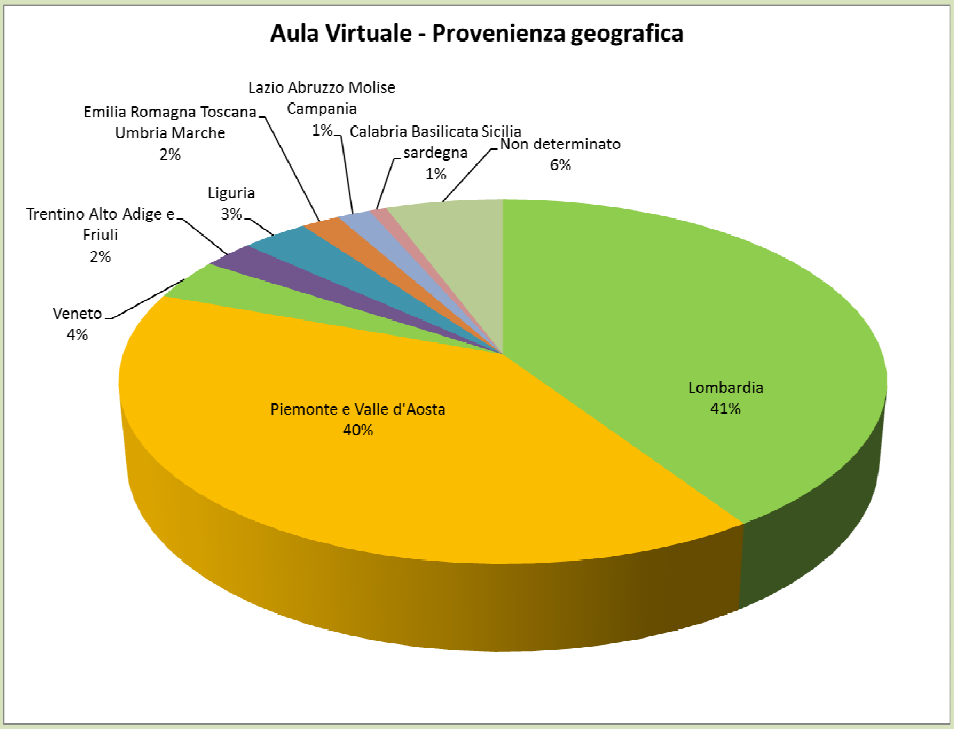



Figure 1: Virtual Classroom - Geographic origin of distance participants to the 2013 -2014 geographical activities.

Those who connect are mainly clerks or technicians, the self-employed, entrepreneurs including agricultural ones, doctoral students or individuals belonging to the agronomists' and foresters' associations, students. In addition to private users, also some public entities have benefited from this service, providing their own room to interested users for the reproduction of the recorded seminars, published on the Multimedia section

of the Valmont website.
The opportunity to view the already provided seminars and conferences more than once by connecting to this page http://www.valmont.unimi.it/italiano/multimedia/multimedia.html (where all the links to the recorded meetings organized at Edolo are published) has allowed to create **a wide, freely accessible repository** of video resources, contributing to a further **dissemination and sharing of knowledge**.
The transmission of seminars via web has had a good feedback in terms of both numbers of connections and appreciation received by users who have benefited from this opportunity. By analyzing the number of *ex post* views of the recordings, since September 2013, on the basis of the number of acesses to each recording made available on the above mentioned website, an indicative quantitative frame of the appreciation of the public can be made: there have been **3029** views.
Since 2013 teaching experimentation activities through blending learning for institutional (university-level and specialising) training activities have been launched.
The recipients have been:

- student of the Bachelor's degree in Valorisation and Protection of the environment and the mountain territory
- participants to the 2013 Advanced Trainings
  - Project Management of the mountain: targeted and strategic planning
  - Programming and management of Tourism in mountain context
  - Renewable Energy Sources in mountain contexts.
- Participants to PSR 2007-2013 Courses
  - Renewable energy sources in mountain contexts: use of the solar source (photovoltaic and thermic systems)
  - Renewable energy sources in mountain contexts: use of water and wind sources.

Two new training courses will be shortly available through **e-learning and blended learning** methodologies:

- the new and advanced version of the **Advanced Training Course in Project Management for the Mountain** (7th November 2014) in collaboration with the Alpine Convention, the Edoardo Garrone Foundation, Soroptimist, Valposchiavo Region (CH).
- the **Master's degree in Valorisation and Protection of Agricultural and Food Supply Chains of the Mountain**, which is going through the final stages of approval by the University of Milan.

Indicators:

- The general appreciation of the bachelor's degree by both students and participants to the mentioned training courses has reached an overall **80% of consent** expressed by part of the students taking part in the satisfaction questionnaire.
- From an occupational perspective, the "Mountain University" is able to train skilled young people which mostly find employment in agriculture (24%; start-up of rural farmers in object of a specific project), public authorities (18%), forestry and agricultural unions (12%), environmental operators (9%), trade associations (9%), mountain huts and farm holydays managers (8%), etc. 78% of young people that obtained a degree are employed, 9% are attending a master degree, 7% are unemployed, 6% did not answered to the questionnaire.

Links: www.unimont.unimi.it
www.valmont.unimi.it
www.gesdimont.unimi.it

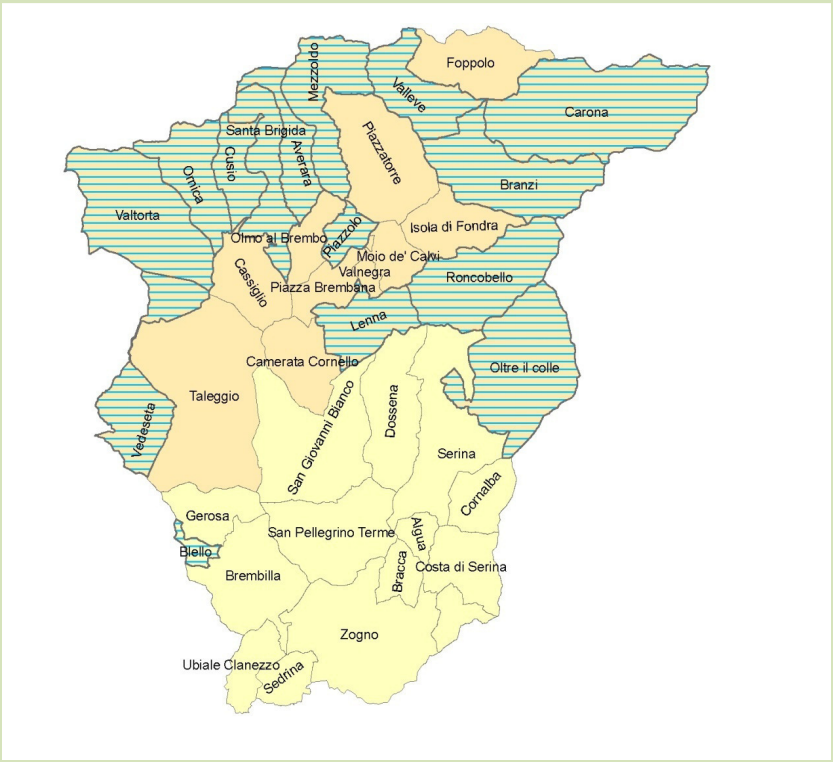
## PROJECT PADIMA: EDUCATION AND TRAINING AS AN OPPORTUNITY TO FACE WITH THE DEPOPULATION OF THE LESS FAVOURED AREAS- THE PILOT-AREA VAL BREMBANA (Transnational – Interreg IV C Project)

### Issues:

- re-launching of the local/regional competitiveness
- implementation of educational opportunities for mountain young people (e.g. primary schools in sparsely populated areas, professional schools training up the traditional activities, universities avoiding emigration and brain drain)
- increasing of the knowledge on the territorial dynamics and elaboration of a strategy for the development of the area and for the safeguard of the services

### Background, implementation and pilot activities:

Out of several pilot-areas taken into consideration by the Partnership of the Project PADIMA, we have chosen the example of the Italian Val Brembana, located near Bergamo in the Orobie section of the Alps.
Depopulating municipalities (in the last decade) are located in the upper valley, the more far and less connected to the urban area of Bergamo. The population of the valley (approx. 44.000 inhab.) was stable between 1998 and 2008, but certain municipalities of the upper valley experienced population decreases up to 30%.
The mean old-to-young dependency ratio (pop. >65 / pop. 0-14) of 1.11 is similar to the regional average of Lombardia (1.08), but in certain municipalities it reaches values of about 3 elderly people per children (Mezzoldo 3.30, Averara 2,73, Cornalba 2,60). In general Val Brembana is characterized by a high mean age, and a low presence of young people and women in childbearing age.
This situation is in particular linked with the lack opportunities for studying and working in the valley. Very often young go to study in Bergamo and stay there to work. The presence in the valley of approximately 70% of people having only a basic school level (20% of residents have a upper-secondary education, whereas less than 10% have a degree) confirm the difficulties in the education sector in this area (these are the lowest educational levels between the pilot areas of PADIMA).
Only the 55% of 17-19 years old see their future in the valley, instead of a 42% of them that want to go out to find job opportunities.




The economic situation in the valley is not too much positive, being characterized by a diminution of the number of enterprises (and the diminution of new enterprises, too) and a low presence of young entrepreneurs (only 6% has less than 29 years). 92% of enterprises have max. 5 employees. Tourism in Val Brembana in mainly national (82% of Italian tourists; 85% of which coming from Lombardia).

What should be the objectives for a re-launching of the area? Improving education and training policies, to provide a better offer for young people and enterprises; improving territorial marketing activities to increase the attractiveness of the mountain part of the valley; increasing the economic diversification to make the economic system more competitive.

SWOT ANALISYS ON EDUCATION AND TRAINING IN VAL BREMBANA

| | |
|---|---|
| **STRENGHTS**<br>Professional high schools offer courses connected with the main economic sectors in the area.<br>·Nearness with Bergamo's University | **WEAKNESS**<br>Low rates of people with second and third education level<br>Few professional training for adults, especially in tourism sector<br>Low knowledge of foreign languages<br>·Difficult accessibility to the high school for the students live in mountain's village.<br>Low employed rate (40.8% in the area, 44% in Lombardy). |
| **OPPORTUNITIES**<br>Demand of specialized workforce<br>Initiative to improve the connecting between schools and work | **THREATS**<br>Decrease of young population<br>Local economic system doesn't demand high skilled (university level) workforce. Therefore there is a 'brain-drain': high skilled young people shift to others areas (Bergamo, Milan)<br>Low rate of students going to university (72.3% in Italy, 46% in pilot area) |

In concrete, these objectives have been translated into three action on the territory:

1) training course for eco-guides: organized by the "Eco-Museum" of Valtaleggio in order to train

young people to work as guides for the museum. The organization of this and others training initiatives helps local young people to have a chance to work and live in the mountain area;

2) decentralized hospitality in the Ornica village: a new form of territorial marketing, which stimulates the promotion of local products, the environmental education and the organization of cultural events, as well giving some job opportunities, consist in the renovation of the traditional houses of Ornica, to build up and organize a decentralized hotel with the rooms located in different parts of the old village;
3) truffle cultivation in Bracca village: the practice aims to enforce the traditional activities connected to picking and cultivating truffles in Bracca. A traditional rural activity can became a business opportunity for the local community, especially in gastronomic tourism, by improving the use of local truffles in restaurants and creating a brand.

Link:

http://www.euromontana.org/en/projets/padima-policies-against-depopulation-in-mountain-areas.html

DIVERSITY4KIDS : LEARNING AT SCHOOL INTERCULTURAL DIALOGUE AND DIVERSITY THROUGH RECREATIONAL, INTERACTIVE AND NARRATIVE METHODOLOGIES (Italy: South Tyrol, Trentino, Friuli-Venezia Giulia, Austria: Tyrol)

Issues:

- Implementation of educational opportunities for mountain young people (e.g. primary schools in sparsely populated areas, professional schools training up the traditional activities, universities avoiding emigration and brain drain).

Type of measure:

- Pilot action (project: Diversity4Kids: Learning at School Intercultural Dialogue and Diversity through Recreational, Interactive and Narrative Methodologies - Interreg IV Italy-Austria); Partners : EURAC (European Academy of Bolzano/Bozen), ZeMIT(Zentrum für Migrantinnen in Tirol), GECT- EUREGIO Tirolo-Alto Adige-Trentino, Centro Culturale Luciano Tavazza per il volontariato e la partecipazione in Friuli Venezia Giulia.

Funding: 320,881 €

Background:
Over the past decade, migration has become part of everyday life in the territories involved in the project. Currently children and teenagers live with foreign students as part of their ordinary school life much more than in their parents' generation. Diversity is a challenge, but also an opportunity: learning at school to deal with diversity prepares students for an increasingly globalized world, in which intercultural capacities and attitudes will become more than ever essential to achieve results in social and economic development.

Implementation:
The main good practice developed within the Diversity4Kids project consists in a didactic set of playful activities on anti-discrimination and diversity for children from 8 to 14 years-old.
Activities include theatre improvisation, role-playing, creative writing, storytelling and biographic narrative. A further good practice is a set of indicators developed with headmasters and

teachers, to monitor and to evaluate the project activities. In the framework of the project, teachers and intercultural mediators have been trained to work with the Diversity4Kids game set and to perform it successfully in schools.

Indicators:

- increased awareness on the issues of diversity and anti-discrimination by children and teenagers in the age of 8-14 years as well as by teachers;
- interest by teachers in organizing playful school activities on diversity and anti-discrimination.

Transferability:

EURAC will transfer part of the Diversity4Kids project activities in some follow up initiatives :

- Trainings for teachers and people working with children will be offered in South Tyrol and Tyrol on how to perform the DXK activities;
- Development of an App for Smartphones and tablets on intercultural diversity and anti-discrimination.

Link: http://www.eurac.edu/en/research/projects/ProjectDetails.html?pmode=3&textId=6455&pid=11316

RURAL LEARNING REGIONS –INSTRUMENTS THAT ENCOURAGE LIFELONG LEARNING (Austria)

Issues:

- re-launching of the local/regional competitiveness
- creation of qualified employment dealing with the brain drain phenomena
- implementation of educational opportunities for mountain young people (e.g. primary schools in sparsely populated areas, professional schools training up the traditional activities, universities avoiding emigration and brain drain)
- increasing of the knowledge on the territorial dynamics and elaboration of a strategy for the development of the area and for the safeguard of the services

Type of measure:

- pilot action (project: Learning regions)
- political measure (n°, date, institution): regional relevant stakeholders build a network ➔ develop a strategy ➔ draw up educational projects

Funding: A Measure of the EU Rural Development Programme 2007-2013: funded by the European Union as well as the Austrian Federal and Provincial Governments under LEADER.

Background:

Learning Regions are instruments to enhance lifelong learning and to establish knowledge management in rural areas. The goals are:

- To establish learning as a strategic regional focus;
- To develop and implement attractive education and training projects;
- To raise public awareness of learning;
- To open up new prospects for the region.

In 39 regions more than 140 projects, oriented towards regional strategies, are carried through. Project

focuses are e.g. building regional knowhow/identity, educational marketing, educational transitions, qualification initiatives, strengthening agriculture, improving youth employment, providing training for economic migrants and so on.

Implementation:
The setting up and running of a strategic learning network on local and regional levels is strongly linked with Leader groups and so their actions are all aligned with the LAGs Local Development Strategies. The key elements of a learning region strategy are a survey of the current learning situation and definition of goals and focal themes for the region. Examples for projects in Learning Regions are:

- Regional learning centers: the educational institutions, library, museum, pubs etc. in a region collaborate to provide a location where people may spend their time learning. New target groups may be addressed.
- Generational learning - hands-on contemporary history: Students interview living survivors in the region about their experiences. The results are presented and discussed in special events, exhibitions and publications.
- Competence portfolios help reveal the regional skills trained in volunteer work, which is typically often done in rural areas.
- Learning focuses for selected audiences: Immigrants, older people or people not used to learning are target groups that have specific educational needs which should be addressed. A variety of learning opportunities on the spot
- E-learning and web 2.0: E.g. "Monday academy", where lectures held in universities are transmitted to the respective region and discussed locally.
- Cooperation for qualification: Enterprises may collaborate to draw up qualification schemes and organize local further training courses held by experts.

Cooperation model "knowledge creates region" as a model for cooperation between regional knowledge potentials (agricultural management, handcraft …) and education and training centers (schools, research centers): development of knowledge regions should raise attractiveness especially for young people and support brain gain. Main issue is low-threshold access to know how and science, e.g. by learning festivals for people of all ages.

Transferability:
The projects are implemented by those partners that are especially interested. The Austrian Institute for Adult Education has drawn up three manuals on Learning Regions, which provide detailed information on the development of a learning region (network building, strategy development and instruments for implementation).

Link: www.lernende-regionen.at

# 4. Some applications on demographic and labour market data

## 4.1 The dynamism of demography and labour market in Alpine area

Actually it doesn't exist "The Alps" as a whole: with respect to demography and labour market situation, as well as for many other characteristics, the alpine territory is a kaleidoscope of much differentiated realities.

To provide an easy-to understand overview of this complex and colourful picture it can be useful to apply methods and tools such as synthetic indexes, which are able to summarize in a single average value the multiplicity of characteristic values of each different micro territorial area. The MPI is a composite index for synthesizing the values of several indicators measured on a certain number of statistical units. On the basis of the index values it is possible to draw a unique classification of the units.

The score given to each unit is an average of the standardized values for the different indicators. Moreover, the MPI index (see a more detailed description in Methodological Appendix – Annex C) includes in its formula a penalization function introduced to take into account the presence of "horizontal" variability, i.e. the variability among those values.

To measure the demographic and labour market's dynamism in the Alps the MPI composite index has been applied to a set of eight demographic and labour market's indicators, calculated on each one of the 4,700 Alpine municipalities[14] included in the analysis. The chosen indicators are: Foreign resident population (per 1,000 residents), Population density, Crude birth rate (per 1000 residents), Population growth rate (per 100 residents), Working-age total resident population (per 100 residents), Employment rate (per 100), Unemployment rate (per 100), Variation in employment rate. The subset of indicators included, derived from the wider set of the available indicators, has been defined trying to keep the more significant and non-replaceable ones, preserving also a certain balance among the two main investigated dimensions (demography and labour market). All the indicators are static and they are calculated on the last data available (usually year 2012), except for the population growth and the variation of the employment rate, which are dynamic and refer to the last ten years of availability of data. The main results (Figure 17) of the study are listed below. Municipalities with high values of MPI are the most dynamic. Among these areas there are: Alto Adige/Sudtirol, Valle d'Aosta, the valleys floor of Adige, the Garda area (in Italy), High Savoie and High Maurienne Valley (in France), Inn and Salzach Valleys, a further part of Tyrol, swathes of Vorarlberg, municipalities in the area of Vienna, Graz and Klagenfurt (in Austria). The highest index values actually were registered in the municipalities of Saint-Christol (FR, 118,1), Sivergues (FR, 116,6), Mäder (AT, 114,1), Val-de-Chalvagne (FR, 112,5), Hall in Tirol (AT, 112,0), Lavant (AT, 111,6), Ampass (AT, 111,3), Hard (AT, 111,2), Altach (AT, 111,0) and Zirl (110,8).

Among less dynamic municipalities (with lower values of MPI) there are: Maritime Alps (in France), municipalities along the border between Tyrol and Vorarlberg, in Hohe and Niedere Tauern as well as in the Niederösterreichisch-Steirische Kalkalpen (in Austria), the municipalities on the border between Austria and Slovenia, between Italy and Slovenia and in the western area of Turin. In the last positions of the ranking for decreasing values of MPI index we find Gars (FR, 77,1), La Bâtie-des-Fonds (FR, 75,6), Aucelon (FR, 75,6),

[14] Not including German, Swiss and Lichtenstein Alps.

Chanousse (FR, 75,5), Oulles (FR, 74,8), Blieux (FR, 73,7), Saint-Léger (FR, 69,15), Montferrand-la-Fare (FR, 67,34), Lesches-en-Diois (FR, 64,3), Vérignon (FR, 63,1).

In Figure 17 the municipal values of the MPI have been represented. In the map stronger colour intensities correspond to higher MPI's values.

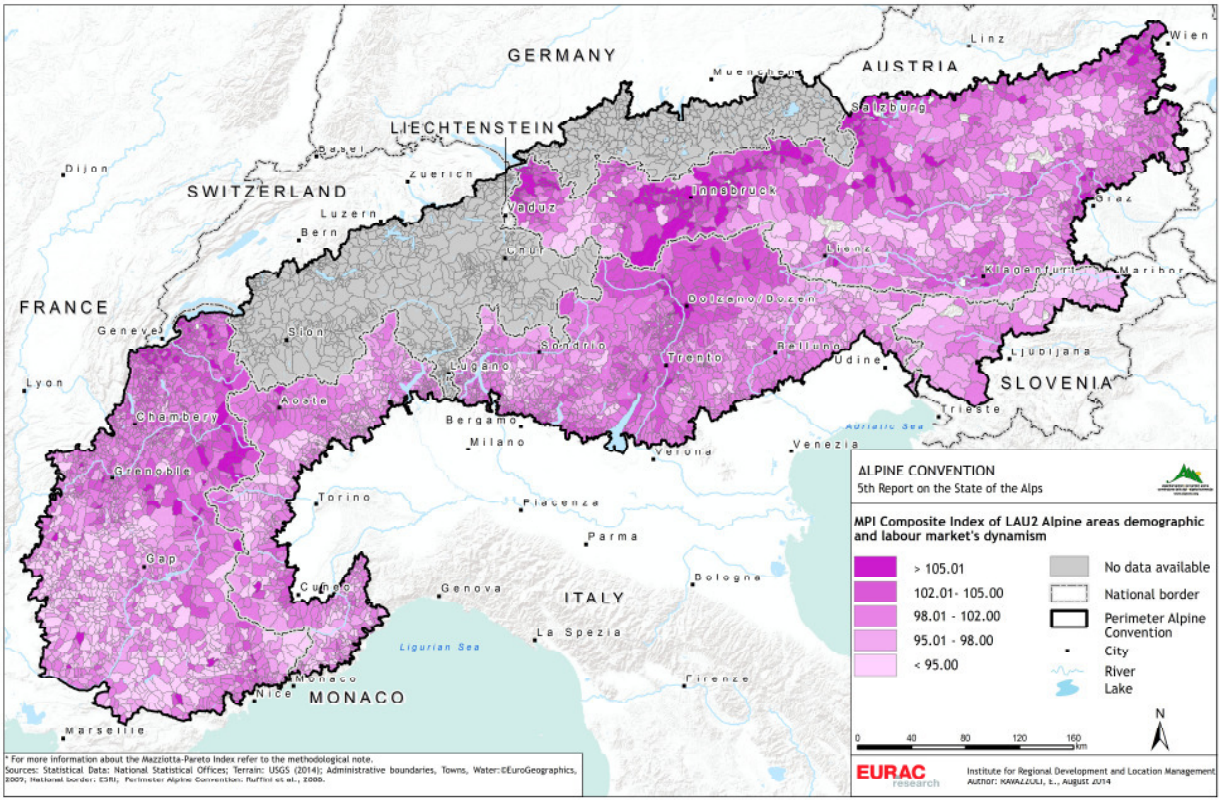



Figure 17: MPI Composite Index Values of LAU-2 Alpine areas demographic and labour market's dynamism.

## 4.2 Classification of the Alpine municipalities by their demography and labour market situation

Considering the set of the most relevant demographic, economic and social variables, in order to deepen the analysis and better classify the heterogeneous situation of the Alps with respect to the specific configuration of values for each territorial unit, a principal components analysis associated with a cluster analysis has been applied. The analysis is based on nine variables. For the demographic analysis we have considered: population density, population growth (in ten years), natural balance, elderly population (per 100), foreign residents (per 1,000 residents). Socio-economic variables included are: employment rate, variation in employment rate (in ten years), unemployment rate and population with tertiary education.

Finally, a map of patterns and trends (Figure 18) in the about 4,700 municipalities considered (not including German, Swiss and Liechtenstein Alps) has been drawn.

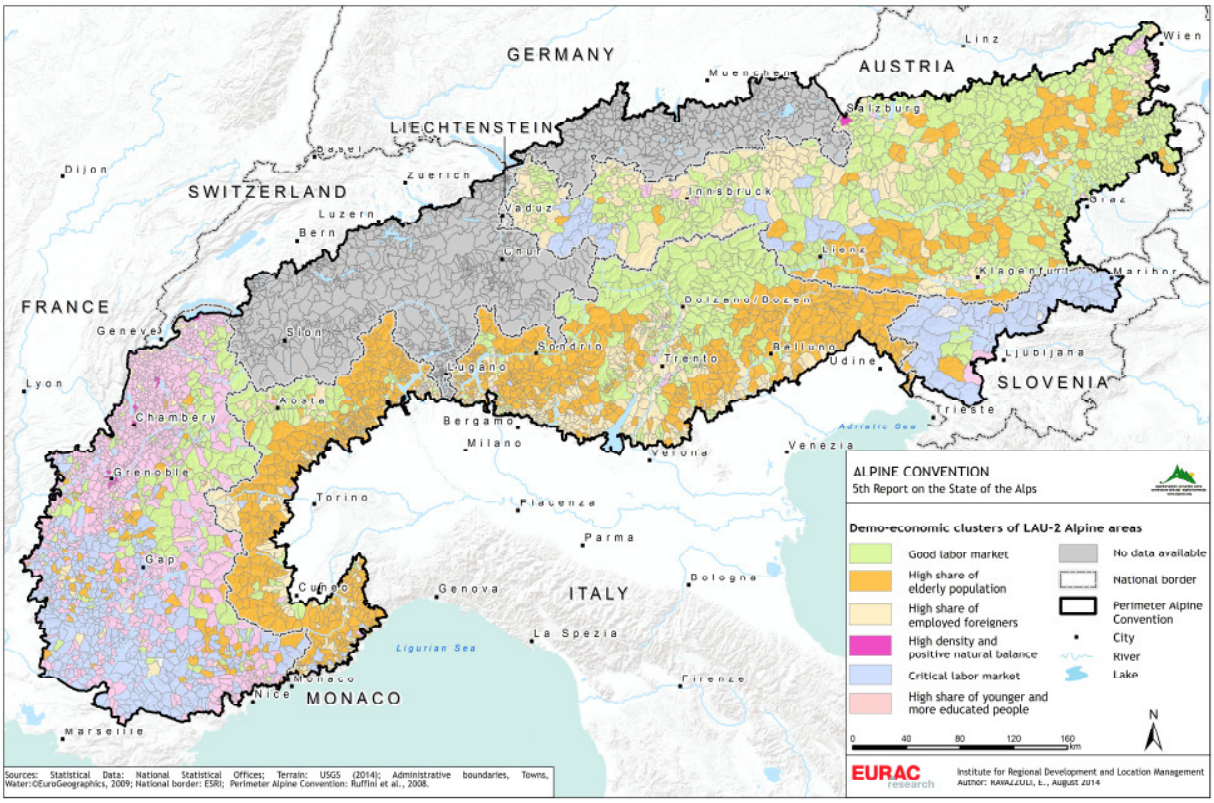



Figure 18: Demo-economic clusters of LAU-2 Alpine areas.

The first three axes deriving from the application of the principal components analysis explain more than 70 percent of total variability.

Thus, focusing the attention on groups of municipalities it is possible to draw the geography of the Alpine area. By the results of the cluster analysis, six groups of municipalities were singled out presenting peculiar characteristics when compared to the general mean[15]. In the map, the six groups of LAU-2 units have been represented with different colours.

The first group of municipalities can be defined as the group with a good labour market (1,258 municipalities). It is characterized, with respect to the general average, by a higher level of employment rate and a variation in this indicator (observed in a ten year period) clearly positive; the unemployment rate shows lower values to complete the framework of a positive overall situation. On a strictly demographic point of view, population density, share of foreigners, of elderly people and of people with a high level of education show lower values respect to the general average. The population growth observed in ten year period is slightly positive respect to a general average more positive. Main areas that belong to this group are: a large

[15] In this respect, it must be underlined that the characterization of each group of municipalities that comes out from the application of multivariate analysis methods such as Principal component analysis followed by Cluster analysis, in order to give a synthetic overview of the different municipalities tends to highlight only the main characteristics of municipalities. As a matter of fact, talking about the characterization of each group in terms of the original indicators, the approach only take into consideration the most relevant characteristics shared by the units contained in a group. Furthermore, the cluster description often is based only on the subset of these characteristics that mainly differentiate the specific group from other groups. This doesn't necessarily mean that the single municipality in each group is characterized only by the variables characterizing the group. This is true both for "positive" characteristics (such as, for example, occupation) and for "negative" (such as, for example, depopulation).

part of Alpine Austrian municipalities, Alto Adige/Sudtirol, Valle d'Aosta, touristic area in Savoie (Maurienne Valley), the area of Mont Blanc, Arve Valley (in France) and the hills in the west of Ljubljana.

The second group can be defined as the group with a high share of elderly population (1,117 municipalities). In fact, it is characterized in particular by the highest value registered by this indicator respect to the general average. In addition, lower values of employment rate and of share of people with a high level of education are observed. The population growth in ten year is negative and the natural balance is strongly negative; the high share of elderly population play presumably an important role in defining the demographic situation observed in this group. Main areas that belong to this group are: a large part of Italian Alps (Liguria, Piemonte, Veneto, the South-East and Western part of Trentino, Friuli-Venezia Giulia and the provinces of Como, Lecco, Sondrio and Bergarmo), Niedere Tauern and Niederösterreichisch-Steirische Kalkalpen (in Austria), Idrija in Slovenia.

The third group *High share of foreigners* (758 municipalities) is characterized in particular by the higher value registered by the share of foreigners and a higher level of density. The share of people with a high level of education is smaller and the value of the employment rate is similar to the general one. Main areas that belong to this group are: large parts of Trentino, different peri-alpine municipalities – most of the municipalities belonging to this category are touristic resorts or peri-alpine municipalities not far from the main towns of the Po plain and characterised by high values of foreign population - and High Susa Valley (in Italy), parts of Vorarlberg, the upper part of secondary valleys in Tyrol, Salzburg and central Carinthia (in Austria).

The fourth group *High density and positive natural balance* is quite small respect to the other groups (27 municipalities). The level of population density is really high and a balance clearly positive is observed. The proportions of foreigners and of people with tertiary education are quite high. As negative aspect, the unemployment rate shows values higher respect to the general average. Main areas that belong to this group are: Salzburg area (in Austria), Grenoble, Annecy, Aix Les Bains (in France).

The fifth group *Critical labour market* (530 municipalities) is characterized in particular by a high unemployment rate, a low employment rate and a small variation in this last indicator (in ten years). The proportion of elderly people and of population with tertiary education is quite high. The population growth in ten year period is more positive with respect to the general one. Main areas that belong to this group are: a large part of Slovenian Alps, border area of Tyrol and Vorarlberg and parts of Hohe Tauern Valley (in Austria), several municipalities of Maritime Alps (in France). For some of these areas the critical labour market situation could be due to the difficulties in accessibility.

The last group *High share of younger and more educated people* (1,008 municipalities) is characterized by a high share of people with tertiary education whereas the values of the proportions of elderly and of foreign population are lower respect to the general average. The population growth is strongly positive and the natural balance too. The employment rate is higher and the variation observed for this indicator is positive. Both on a demographic and labour market point of view this group seems to be quite dynamic. Main areas that belong to this group are: some municipalities of Maritime Alps (in France), the areas near Vienna and Innsbruck, municipalities in the south of Ljubljana, the north-eastern French Alps.

The cluster analysis confirms that, at the micro territorial level, in the area persist huge differences in conditions and dynamics both with reference to the situation of the population and the demography, and with reference to the labour market. These differences in some cases go across the national boundaries. In others, however, they are rather clearly defined and delimited by national or even regional boundaries, highlighting the importance of any policy in guiding certain phenomena.

## GOOD PRACTICES

### OBSERVATOIRE DU MONT BLANC & WIKIALPS (France – Italy – Switzerland)

**Issues:**

- increasing of the knowledge on the territorial dynamics and elaboration of a strategy for the development of the area and for the safeguard of the services.

**Type of measure:**

Pilot action (project PIT H2 *Camp de base de l'Espace Mont Blanc*).

**Funding:** Both of them co-financed by the European Regional Development Fund in the frame of the Alcotra 2007-2013 Programme the first and the AlpineSpace Programme the second one.

**Background:**
The Mont Blanc Observatory (MBO) has been created on the behalf of the *Conference Transfrontalière Mont Blanc* as a tool to support its politics of sustainable development. With 32 indicators, the Observatory aims to be the key monitoring tool for the spatial development of a strategic cross border area and to help local communities to realize new projects more connected with the situation under way.

**Implementation:**
The Mont Blanc Observatory is now part of the Alpine Space project "WIKIAlps" which aim is to provide the EU Commission with an analysis of the main results achieved with AS projects performed in the "inclusive growth" and "resource efficiency & ecosystem management" fields.
Through WIKIAlps the Observatory will improve its capacity to respond to the needs expressed by public bodies, at communal and regional levels, concerning the knowledge of demographic, social and economic phenomena. Using a set of complementary tools and a series of scientific audits, the MBO will support decision makers and civil servants to design and implement policies, strategies and actions for the sustainable management of the Espace Mont Blanc territory.

**Indicators:**

- Number of indicators (now they are 32, divided between demographic, social, economic and environmental fields)
- Use of the audits to take decisions: number of best practices.

**Transferability:**
The autonomous Region of Aosta Valley and Fondazione Montagna sicura are participating in WIKIAlps with the purpose to test the MBO's capacity to be synergic with other similar experiences. Within the group of international partners of WIKIAlps it will be possible to share and transfer the technical solutions designed for the MBO with the objective to disseminate information and data amongst public administrators and stakeholders of one of the most complex territory of the Alps.

**Link:** http://observatoire.espace-mont-blanc.com/
http://www.sycoemb.eu/

**PROJECT COMUNIS: PASSEIER 2020 - TOWARDS A VISION OF INTER-MUNICIPAL COMMERCIAL LOCATION DEVELOPMENT FOR AN ALPINE VALLEY (Transnational – Alpine Space Project)**

**Issues:**

- improvement of the local/regional competitiveness
- increasing of the knowledge on the territorial dynamics and elaboration of a strategy for the development of the area and for the safeguard of the services.

**Background, implementation and pilot activities:**

The project COMUNIS (see further information in Annex C) runs from 2009 to 2012 in the framework of the ETC Alpine Space Programme.

Reacting to individual business demand at short term is a common strategy of commercial development on the municipal level. A concerted, long-term strategy developed in cooperation with other municipalities – as a so-called 'inter-municipal location' – aimed at using vacant commercial buildings or already designated land and adding value to regional endogenous potentials is often missing. Against this background, COMUNIS has developed cooperative strategies for inter-municipal Commercial Location Development (CLD). By raising awareness of the advantages intra-territorial cooperation, COMUNIS has aimed to overcome individualistic attempts of problem solution on the level of single municipalities. The guidelines for devising and applying inter-municipal CLD-strategies have been adapted to the challenges, conditions and potentials of the project's pilot areas in particular, taking into account also the local conditions of mountain regions, in general, as well.

In the Autonomous Province of Bolzano - South Tyrol, the project was carried out in the Passeier / Passiria Valley and municipality Tirol. This narrow side valley is located north of Meran, bordering the Ötz Valley (Austria) via the Timmelsjoch / Rombo mountain pass and the Wipp Valley (Alta Valle Isarco) on South Tyrolean side via the Jaufen / Giovo mountain pass.

The pilot area Passeiertal comprises six municipalities with a population of about 13.000 inhabitants, more than 4.500 households and more than 1.500 registered companies. It stretches over ca. 25 km, the surface is ca. 376 km² with a varying degree of permanent settlement conditioned by the mountainous topography.

Accessibility of the Passeiertal is difficult and limited. The main road for all traffic is winding and narrow. Access to the valley via the mountain passes is restricted for heavy traffic leading to high traffic volume in and around the city center of Meran through which to enter the valley. Ca. 3.000 people commute within the pilot area or outside (e.g. to the economic center Meran); 12.000-15.000 cars per day; 10 % heavy traffic; 1.164 motorcycles on 16.08.2011 drove towards or across the mountain pass Jaufenpass / Giovo; 808 motorcycles on the same day drove towards or across the mountain pass Timmelsjoch / Rombo) (ASTAT, 2011[16]). The situation leads to congestion especially at peak times and is a source of noise pollution in many of the pilot area's villages.

The local economy is mainly based on small-scale industrial and manufacturing companies (in particular construction, crafts) and tourism (e.g. Moos in Passeier / Moso in Passiria is a so-called Alpine Pearl[17]). Ca. 95% of companies have between one and nine employees. Inter-municipal cooperation (IMC) has already reached a good level (joint administrative units, business association, etc.) and there is the willingness to

[16] ASTAT Landesinstitut für Statistik (2011). Datenbank Verkehr in Südtirol. Available online: http://qlikview.services.siag.it/QvAJAXZfc/AccessPoint.aspx?open=&id=QVS@titan-a|Verkehr.qvw&client=Ajax

[17] http://www.alpine-pearls.com/en/

expand and deepen the cooperation.

EURAC research is following the five-step process of CLD as outlined in the guidelines[18] of the COMUNIS project to develop a vision of inter-municipal CLD in the Passeiertal:

1. Context description: local stakeholders point out the main challenges in the pilot area (accessibility of the valley, heavy traffic volume, awareness-raising for IMC, re-use of vacant buildings and commercial zones and unfinished buildings).
2. Analysis: the following three core fields were analyzed to assess the specific situation of the pilot area:
    - Location profile: accessibility; economy; job market; human resources; image.
    - Inter-municipal cooperation: intensity of existing cooperation; attitudes and expectations of stakeholders; political and legal framework conditions.
    - Commercial land use management: availability and use of land; spatial framework conditions; land prices.

The Balanced Scorecard[19] (BSC) was used as an analysis method since it allows to visualize in a diagram the status quo of the above-mentioned issues and to illustrate possible development paths (targeted situation). Results of the BSC-analysis were further evaluated in an analysis of strengths, weaknesses, opportunities and threats (SWOT-analysis). Thereof, regional potentials could be derived.

This step resulted in a profile of the inter-municipal location giving an overview of the existing inter-municipal cooperation (for CLD and other municipal tasks) and of the framework conditions for (inter-municipal) commercial land use management. The core economic activities of the pilot area were identified and deeper discussed and analyzed with local stakeholders.

3. Development: on the basis of the identified potentials (Figure 1), possible development paths/approaches for the pilot area are being devised, innovative solutions are being developed and recommendations are being formulated.
4. Implementation: taking into account already existing structures of cooperation between municipalities and between businesses, the developed strategy (the chosen development path) will be implemented with local stakeholders by making recommendations for organizational structures and rules which regulate the cooperation.
5. Evaluation: a periodic review of the implemented strategy and the chosen development path will show the progress made. Additionally, the BSC can be carried out again and be compared to an earlier version.

In general, the framework conditions and the political objectives for the future development on inter-municipal level reflect the EU's priorities set for the year 2020 (green growth for functional areas and green jobs; use of renewable energy resources). They are also in line with the objectives and strategies of the Autonomous Province of Bolzano-South Tyrol (strengthen IMC using joint structures; preserve mountain municipalities jeopardized by emigration; reach CO2-neutrality; increase regional added value) and mirror the objectives of the agency Business Location Südtirol-Alto Adige (set economic focus in small regions to develop functional areas; limit further land use development for commercial/industrial purposes), responsible for business settlement and location marketing in South Tyrol.

The aims at inter-municipal level in the Passeiertal are:

[18] COMUNIS Project Consortium (2012). *Inter-municipal Cooperation for Strategic Steering of SME-oriented Location Development in the Alpine Space - Project Synthesis*. 34 p. Available on http://www.comunis.eu/downloads/COMUNIS_Synthesis_Booklet_EN.pdf/view

[19] The Balanced Scorecard method is a strategic performance tool used for example to assess an organization's or structure's performance.

- Increase the distribution and use of renewable energy sources.
- Strategic use of (available) commercial resources for future business settlements.
- Increase regional added value by closing regional economic cycles.
- Integrate regional strengths in location marketing activities.
- Increase quality of life level to hold population and workers.

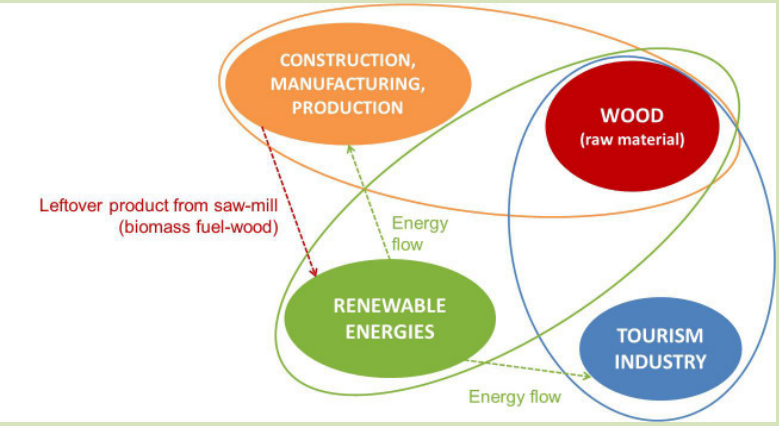



Figure 1: Selected regional potentials (sector-related) and their interrelation: possibilities for increased cooperation in the Passeiertal.

Considering that and based on the location profile, three possible development paths have been identified: the expansion of the wood sector and its inter-relation with other sectors, the increased production and use of renewable energies (e.g. hydropower, biomass), and the integration of tourism and agriculture.
The field of action "wood" shall be looked at in more detail (Figure 1). Due to existing cooperation and organization of businesses and forest owners in the wood sector and a dominance of wood manufacturing businesses, it is an objective to further valorize that sector in the Passeiertal[20].
Possible target-aimed measures for the inter-municipal cooperation and cooperation between companies are:

- Invest in design of innovative objects (e.g. furniture, toys, public/private construction, etc.).
- International competitions to attract external innovations (architects, designers, planners) and attention towards the area.
- Install a new or extend the existing saw-mill in the valley to process and store local wood.
- Identify and settle businesses and services that are missing in the local value chain wood to attain a higher processing degree (e.g. biomass (fuel-wood) as a raw material for renewable energy).
- Follow the idea of creating a "wood world" in the valley to sensitize the population and visitors for local wood and to present the wood's various uses (e.g. also in public or private buildings).
- Use existing working groups of forest owners and entrepreneurs to follow up on these activities.

Other fields of action were identified for which recommendations have been developed: in general, the formation or regional value-added partnerships that integrate both economic actors as well as public/administrative stakeholders is suggested for all fields of action. In order to meet the increasing

[20] Structured evaluation of the results of the Workshop "Quo Vadis Passeiertal?" held 03.02.2012 at EURAC Bozen/Bolzano.

demand-trend for local/regional products by tourists and the local population, it is advised to further integrate tourism with agriculture and add value to agricultural products, also developing innovative forms of tourism and hotel cooperation. Launching an inter-municipal cooperation campaign informing on the advantages and disadvantages of IMC can help abandon prejudices among the population against cooperation across municipal borders. It is suggested to regularly carry out business surveys to oversee land demand for commercial purposes in all municipalities and offering incentives for the use of abandoned existing industrial/commercial structures. Initiate a discussion in the companies on inter-business logistics to improve the accessibility and mobility for commuters and contribute to coordinating traffic in the valley. The extension of inter-municipal and inter-agency cooperation in training and secondary school education should be followed up to sensitize young people for craftsman's trade and other vocations as well as to preserve traditional professions and production methods.

Link: www.comunis.eu

# 5. Population and services

Welfare conditions and perspectives are rapidly changing at European and alpine level. These changes are both a cause and a consequence of the broader demographic changes and new population dynamics, which are generating great challenges for the programming and forecasting of adequate welfare and services responses to the upcoming needs. The increase of the share of older population, generally visible at alpine level, will be combined with the expectation that, in the future, an increasing number of older people will be living alone, so that informal care from other household members will not be available. Moreover, the increased participation of women to the labour force will also play an important role in the reduction of the supply of informal care. As a consequence, improving professional social care and support for independent living is rapidly becoming a priority. The future health status of the population will depend to a large extent on current health behaviour (European Commission, 2006).

The age of the resident population plays a key role in determining the levels of welfare and acceptable social conditions. This phenomenon has been already tackled in Chapter 2, where Figure 3 has shown the relation between the population over 65 years old with the one under 15, highlighting how many persons of retirement age there are for every hundred children and adolescents. This information gives a picture of the relation between the two non-working sections of the population: those definitely no longer working and the young people who will be working in the future. As a consequence, it shows clearly what kind of demographic trend a municipality is likely to experience and what kind of infrastructure (e.g. schools and facilities for the care of the elderly) will be needed there in the future. All in all, although it is a phenomenon spread in all European Countries, in the Alps, the ageing of the population is particularly evident, especially in the Core Alpine area; this calls for an in-depth investigation of the way in which services for the population will have to be provided in the future.

## 5.1 Health care facilities

Health is an important priority for European society, who expects to be protected against illness and disease. Nevertheless, the health status of a population is difficult to measure, since it is hard to find a common definition among individuals, population, cultures, or even across time (Eurostat, 2010). Moreover, health indicators are strictly related to the concept of "quality of life".

In general, mountain areas suffer a great inequality concerning the offer of social and medical care. The mountain *milieu,* regarding the access to health care, is certainly marked by its specific geography. Therefore, it would be hazardous not to distinguish between the health problems of the population living in touristic and industrial valleys, which can count on several communication facilities and is relatively favoured for what concerns the health care offer, and those of mountain population characterized by spread settlements, isolated villages and a lower accessibility. The social and economic contexts of Alpine areas do not allow people to benefit from the same health care system as the people living in cities or urban areas with the same social conditions.

Health systems - the combined arrangements of institutions and actions whose primary purpose is to promote, restore, or maintain health (World Health Organization, 2000) - are increasingly being recognized as key to fighting disease and improving the health status of populations. The number of beds in the health care services needed in a country depends on many factors, including the patterns of disease and the availability of alternative care settings.

In order to analyze the availability of health services, it is possible to consider the number of hospital beds for ordinary admissions (hospital beds used for admissions for at least one night) per 1,000 people. This is an indicator that reflects both induced demand and supply-side factors and the extent of physical, financial, and other barriers to health care (World Bank, 2013). This indicator of the availability of health care services, which compares the hospital capacity relative to the general population, is often used to carry out international and intra-national comparisons. In order to compare these indicators among Municipalities in the Alps, it is advisable to use the definition of dataset as the System of Account classification[21] (World Health Organization, 2011) where the hospital beds are defined as both public and private, as regularly maintained, staffed and immediately available for the care of admitted patients, for ordinary admissions[22]. One of the main trends emerging today, both at European scale and referred to the Alpine area, is the decrease of hospital beds available for citizens. A considerable share of the observed reduction in hospital beds is likely to have been caused by the drop in the length of hospital stay (e.g. Italy has the highest rates for shortest stays and "day hospital" cases). Another reason is the arising of financial constraints during the 1990s, which have led to a rationalization of healthcare services everywhere (Alpine Convention, 2012). The increased demand for healthcare for elderly people, many of whom are suffering from chronic disability and diseases, has in most cases been met by transferring beds for acute or psychiatric care to long-term care, while total numbers are still declining (Eurostat, 2006). This phenomenon is particularly evident on the Italian part of the Alpine arc.

Since distance is the most important criterion for patients when choosing a hospital (Tappeiner et al., 2008), the spatial and temporal distance to the nearest hospital is an important indicator of medical provisions and of the recuperation situation of the patients. The distribution of ambulance stations, whether central or decentralized, the availability of an air ambulance or the technical equipment of the ambulance stations are further factors. However, the short access distances or travel times remain the most important factor. In an area that is relatively poor in health practitioners, mountain populations experience some new difficulties to access specialized and technical health care. For emergencies, general practitioners and pharmacists could be the only available recourse with considerably enlarge responsibilities, compared to their urban colleagues (Smirou, 1984). For more details on the accessibility to hospitals, see the thematic analysis "Focus report on hospitals in the Alpine area".

[21] Since 2006 OECD, EUROSTAT and WHO collaborated intensively to revise the System of Health Accounts methodology with the expertise and inputs of health accountants across the globe. This process culminated in the publication of new manual in October 2011: SHA 2011.

[22] HP.1 Inclusion: Beds in all hospitals, including general hospitals, mental health and substance abuse hospitals, and other specialty hospitals; occupied and unoccupied beds. Exclusion: provisional and temporary beds; beds in nursing and residential care facilities.

## NATIONAL CONTRIBUTIONS

### AUSTRIA

The Austrian National Contribution will be integrated in the REV1 version.

### FRANCE

*The French Alps can be considered well equipped in terms of medical facilities, even if mountainous landscapes mean longer road distances and time to get to these facilities. The number of general medical practitioners, of short and long term medical and residential care facilities per 1000 residents are very close to national rates. This is, in part, due to the presence of many non-permanent residents during the holiday periods in the most touristic parts of the area.*

| | | French Alpes | France |
|---|---|---|---|
| 3,2 | % of population more than 30 minutes from short term hospital | 5,1 | 1,3 |
| 3,3 | Number of general medical practitionners per 1000 residents | 11 | 10 |
| 3,4 | Long term residential care facilities* | 30 | * |
| 3,5 | % of population more than 30 minutes from long term residential | 12,3 | 6,5 |

* the number of beds in these facilities is not available

Table 1: Health care indicators, 2010

### ITALY

*The Italian Health Care is mainly a public system (there is a National Health System) and it is regionally based: the 19 regions and 2 autonomous provinces have responsibility for the organization and delivery of health services through local health units. Each region has a great autonomy in the definition and organization of his regional healthcare system, so the comment of this dataset makes sense only considering the regional perspective.*

*The number of beds is an aggregation of beds for different kinds of specialty care and may mask deficiencies in certain areas.*

*The number of beds is a very poor measure of health system capacity as a bed only contributes to health care if it is supported by an appropriate mix of staff and equipment (McKee M (2003). What are the lessons learnt by countries that have had dramatic reductions of their hospital bed capacity? Copenhagen, WHO Regional Office for Europe, Health Evidence Network report; http://www.euro.who.int/Document/E82973.pdf).*

*The hospital can serve many patients who live outside of municipality where it is located, sometime these area are neighbouring.*

*In all the Italian regions during the last years, the hospital demand and supply indicators has been decreasing, in fact it has been taken many measures, through national (PATTO PER LA SALUTE - triennio 2010-2012 http://www.salute.gov.it/portale/temi/p2_6.jsp?lingua=italiano&id=1299&area=programmazioneSanitariaLea&menu=vuoto ) and regional laws, to promote the improving of an integrated network among inpatient care, outpatient care and prevention. During the planning of health care facilities, respect the period 2012-2014, the Government have established a reduction for all regions, in terms of number of hospital beds, which is expected to be 3.7 beds per thousand inhabitants (0.7 for rehabilitation*

*and long-term care beds) ( National Act n. 135/2012).*

*In 2010 the value of national average is 3.7 per 1,000 inhabitants: the availability of hospital beds in regions where there are alpine municipalities is higher than the others (3.9 per 1,000 vs 3.5 per 1,000 people) (see Table 2).*

| Regions | N of hospital beds (absolute values) | Population average - 2010 | N of hospital beds, per 1,000 people |
|---|---|---|---|
| Regions with ALPS Municipalities | 88,293 | 22,786,458 | 3.9 |
| Regions without ALPS Municipalities | 128,293 | 36,490,958 | 3.5 |
| Italy | 216,586 | 59,277,416 | 3.7 |

Table 2: Hospital beds per 1,000 residents in regions with and without ALPS municipalities- Italy *Year 2010.*

If we observe the alpine municipalities in Italy, we find hospital beds in five over six regions (Friuli Venezia-Giulia, Lombardia, Piemonte, Valle D'Aosta and Veneto. The region of Liguria is the only one that doesn't have hospitals in the ALPS Municipalities) and two autonomous provinces (Bolzano and Trento) where there are 12,384 hospital beds that serve 4,339,637 residents: the rate is 2.9 per 1,000 inhabitants[23]. It has also been noted that hospitals in the ALPS municipalities have less availability per inhabitants to the rest of Municipalities, of the same regions (4.2 per 1,000 residents) (see Table 3)

| **Regions with ALPS Municipalities in Italy** | **N hospital beds** | **Population average** | **hospital beds (per 1,000 residents)** | **N hospital beds** | **Population average** | **Number of hospital beds (per 1,000 residents)** |
|---|---|---|---|---|---|---|
| Piemonte | 2510 | 874378 | 2.9 | 15014 | 3488797 | 4.3 |
| Valle d'Aosta | 480 | 126724 | 3.8 | 0 | 0 | - |
| Lombardia | 2689 | 1280325 | 2.1 | 35512 | 8352087 | 4.3 |
| Bolzano | 2038 | 500065 | 4.1 | 0 | 0 | - |
| Trento | 2189 | 520641 | 4.2 | 0 | 0 | - |
| Veneto | 1860 | 1255239 | 1.5 | 15584 | 3591707 | 4.3 |
| Friuli Venezia Giulia | 618 | 218111 | 2.8 | 3816 | 1003098 | 3.8 |
| Liguria | 0 | 84796 | - | 5983 | 1490492 | 4.0 |
| **Total** | **12384** | **4339637** | **2.9** | **75909** | **17926180** | **4.2** |

Table 3: Hospital beds per 1,000 residents in regions with ALPS municipalities- Italy-Year 2010.

*In Liguria there aren't hospitals for the residents in ALPS municipalities, but there are 4 hospital beds per 1,000 people in the other municipalities. Even in the other four regions there are less hospital beds in ALPS municipalities than in the rest of municipalities (Piemonte 2.9 per 1,000 inhabitants, Lombardia 2.1 per 1,000 inhabitants, Veneto 1.5 per 1,000 inhabitants vs 4.3 per 1,000 inhabitants and Friuli Venezia Giulia 2.8 vs 3.8).*

*The developed world's population is aging because of the trends of increasing in life expectancy and decreasing of fertility rates. These demographic changes result in an increasing share of old and very old*

[23] The provinces autonomous of Bolzano and Trento and the Region of Valle D'Aosta are completely on the ALPS

*people, leading to new patterns of morbidity and mortality, such as the increasing number of degenerative and often multiple and chronic diseases. These trends are predicting the increase of demand of long-term care (LTC).*

*LTC is usually provided to persons with physical or mental disability, the frail elderly and people that need support in conducting their daily life activities and seem unable to care for themselves without the help of another person. LTC includes a variety of services both medical and non-medical addressed to people with chronic conditions, physical or mental disabilities.*

*In Italy, as in other countries, the rapid population ageing is coupled with the recent evolution of National Health Service (NHS) which prompts the policymakers to require more information on long-term services so as to adopt specific strategies to meet increasing health needs and contain future expenditures connected with aging.*

*In Italy are considered Residential Long term care facilities those that provide also health care services.*

*In Italy the residential long term care facilities in 2011 are 7,119 with 281,082 beds (4.73‰ inhabitants). The 46% of residential long term care facilities are in the Alpine Regions (3,261 facilities) with 162,198 beds (12‰ inhabitants) while in the selected Alpine Municipalities the residential facilities of the same type are 892 (12.5% of Italian residential facilities) with 41,185 beds (10‰ inhabitants). The indicators show more supply of residential long term care facilities in the Alpine Municipalities in comparison of other Italian regions. The rates of recipients of these facilities are higher for all age groups in the Alpine municipalities than rates at Italian level but are lower than those calculated in the Alpine regions. The recipients aged 0-17 are 0.65‰ inhabitants (0.57‰ inhabitants at national level and 0.92‰ inhabitants at regional level), the adults recipients represent the 1.87‰ inhabitants (1.31‰ inhabitants at national level and 2.80‰ inhabitants at regional level). The level of elderly recipients is the highest, this is due to the specific selection of the residential facilities, LTC facilities, and to the aging process explained in the introduction. The elderly recipients are the 37.76‰ inhabitants (17.56‰ inhabitants at national level and 47.23‰ inhabitants at regional level) and those aged 80 years and over are 59.16‰ inhabitants (43.92‰ inhabitants at national level and 124.36‰ inhabitants at regional level).*

*General practitioners (GPs) treat acute and chronic illnesses and provide preventive care and health education to patients.*

*GPs are generally focal points of primary care, that is the level of care that has been in the middle of many reforms and changes over the past 30 years, basically based on[24]:*

- *the introduction of general practice or family medicine as a medical specialty in some countries;*
- *the encouragement of the establishment of group practices;*
- *the encouragement of teamwork between different health professionals; delegating tasks traditionally carried out by physicians to nurses and professions allied to medicine;*
- *the introduction of additional payment for particularly desirable services (for instance, immunization) and partial capitation payment to supplement fee-for-service;*
- *the increase in the range of services provided by primary care professionals (e.g., community-based mental health services and minor surgery);*
- *the strengthening of the gate-keeping role (e.g., by making primary care providers budget holders*

[24] WHO, Regional Office for Europe, http://www.euro.who.int/en/health-topics/Health-systems/primary-health-care/data-and-statistics

*responsible for purchasing services for their patients; introducing the "money follows the patient" principle; or restricting access to secondary and tertiary care without referral).*

*The role of a GP can vary greatly between countries because of the different organization of the health care systems.*

*In Italy the 19 regions and 2 autonomous provinces have responsibility for the organization and delivery of health services through the Local Health Units (LHU)[25]. LHUs deliver primary care, hospital care, public health, occupational health, and health care related to social care. In primary care GPs play a central role: they establish the access to health care services by prescribing medicines, specialist visits, diagnostic tests, laboratory tests and hospital admissions within the National Health System. Moreover Italy is one of the few countries where primary care for children is entrusted to the family paediatrician. Therefore the general paediatricians are like GPs for the population up to 14 years. Patients are required to register with a GP whose list has not reached the maximum number of patients allowed (1,500 for GPs and 800 for paediatricians).*

*The majority of GPs in Italy operate in solo practices, although the central government and regions have offered economic incentives to encourage group practice and greater integration between GPs and other health care services, social care, home care, health education, and environmental health services. Recent legislation encourages multidisciplinary teams to work in three ways: base group practice, where GPs from different offices share clinical experiences, develop guidelines, and participate in workshops that assess performance; network group practice, which functions like base group practice but allows GPs to access the same patient electronic health record system; advanced group practice, where GPs share the same office and patient health record system, and are able to provide care to patients beyond individual areas. The legislation encourages also a better integration of health and social care services, with the aim of shifting long-term care from institutional services to community care services with an emphasis on the home care. The community home care scheme was founded as part of the National Health Plan for 1998–2000, and establishes a home care network that integrates the competencies of nurse, GP, and specialist physician with the needs and involvement of the family. GPs oversee the home care network, liaise with social workers and other sectors of care, and take responsibility for patient outcomes.*

*Statistical data reported in this report for GPs are referred to all the general physicians and paediatricians.*

*GPs practicing in Italy in 2010 were 53.596 (45.878 physicians and 7,718 paediatricians), 9.7 per 10,000 residents. In the Regions with Alpine municipalities there is not a high variability of the allocation of GPs, with the exception of the Autonomous Province of Bolzano, which has 6.9 GPs per 10,000 residents (Table 1). As mentioned above, in Italy health services are organized at the regional level and provided by LHUs. Therefore, the supply of GPs can be analyzed at the level of LHUs . The Alpine municipalities belong to 9 LHUs in Veneto, 8 in Piedmont, 7 in Lombardy, 4 in Friuli-Venezia Giulia, 2 in Liguria and 1 LHU in Valle d'Aosta, in the autonomous province of Bolzano and in the autonomous province of Trento. In these LHUs there is a higher variability of the allocation of GPs: the lowest values were recorded, besides the autonomous province of Bolzano, also in Lombardy in the LHU of the province of Brescia (7.5 per 10,000 residents) and in the LHU Vallecamonica-Sebino (7.4 ); the highest values were recorded in Veneto in the LHU of Bassano del Grappa (12.2) and in Bussolengo (10.1), while in Friuli-Venezia Giulia the LHU of western Friuli had 10.0 GPs per 10,000 residents.*

[25] The Commonwealth Fund, International Profiles of Health Care Systems, 2012, November 2012

**General practitioners by Local Health Unit with Alpine municipalities - Year 2010**

| Regione/LHU code | LHU name | Number of Alpine Municipalities | General doctors | General Pediatricians | Total GPs | Rate per 10,000 residents |
|---|---|---|---|---|---|---|
| **PIEMONTE** | | | **3335** | **445** | **3780** | **9.2** |
| 010203 | TO3 | 80 | 431 | 64 | 495 | 9.5 |
| 010204 | TO4 | 68 | 372 | 62 | 434 | 9.8 |
| 010206 | VC | 38 | 137 | 16 | 153 | 9.3 |
| 010207 | BI | 54 | 133 | 15 | 148 | 9.2 |
| 010208 | NO | 5 | 246 | 33 | 279 | 8.8 |
| 010209 | VCO | 82 | 130 | 15 | 145 | 8.5 |
| 010210 | CN1 | 129 | 299 | 43 | 342 | 8.3 |
| 010211 | CN2 | 27 | 116 | 16 | 132 | 8.2 |
| **VALLE D'AOSTA** | | | **90** | **18** | **108** | **8.4** |
| 020101 | AOSTA | 74 | 90 | 18 | 108 | 8.4 |
| **LOMBARDIA** | | | **6504** | **1154** | **7658** | **8.5** |
| 030301 | A.S.L. DELLA PROVINCIA DI BERGAMO | 140 | 688 | 127 | 815 | 8.1 |
| 030302 | A.S.L. DELLA PROVINCIA DI BRESCIA | 62 | 688 | 127 | 815 | 7.5 |
| 030303 | A.S.L. DELLA PROVINCIA DI COMO | 91 | 379 | 61 | 440 | 8.6 |
| 030305 | A.S.L. DELLA PROVINCIA DI LECCO | 46 | 218 | 44 | 262 | 8.0 |
| 030313 | A.S.L. DELLA PROVINCIA DI SONDRIO | 78 | 141 | 17 | 158 | 9.0 |
| 030314 | A.S.L. DELLA PROVINCIA DI VARESE | 57 | 602 | 116 | 718 | 9.5 |
| 030315 | A.S.L. DI VALLECAMONICA-SEBINO | 42 | 67 | 9 | 76 | 7.4 |
| **P.A. BOLZANO** | | | **272** | **58** | **330** | **6.9** |
| 041201 | AZIENDA SANITARIA DELLA P.A. DI BOLZANO | 116 | 272 | 58 | 330 | 6.9 |
| **P.A. TRENTO** | | | **395** | **80** | **475** | **9.7** |
| 042101 | TRENTO | 217 | 395 | 80 | 475 | 9.7 |
| **VENETO** | | | **3486** | **569** | **4055** | **8.9** |
| 050101 | BELLUNO | 51 | 95 | 13 | 108 | 9.5 |
| 050102 | FELTRE | 18 | 57 | 10 | 67 | 9.1 |
| 050103 | BASSANO DEL GRAPPA | 20 | 123 | 24 | 147 | 12.2 |
| 050104 | THIENE | 21 | 131 | 21 | 152 | 8.1 |
| 050105 | ARZIGNANO | 10 | 125 | 22 | 147 | 8.6 |
| 050107 | PIEVE DI SOLIGO | 13 | 156 | 25 | 181 | 9.2 |
| 050108 | ASOLO | 11 | 164 | 30 | 194 | 9.6 |
| 050120 | VERONA | 12 | 330 | 61 | 391 | 8.4 |
| 050122 | BUSSOLENGO | 15 | 204 | 39 | 243 | 10.1 |
| **FRIULI VENEZIA-GIULIA** | | | **969** | **122** | **1091** | **9.9** |
| 060102 | ISONTINA | 6 | 105 | 16 | 121 | 9.2 |
| 060103 | ALTO FRIULI | 42 | 67 | 6 | 73 | 9.9 |
| 060104 | MEDIO FRIULI | 19 | 280 | 34 | 314 | 9.7 |
| 060106 | FRIULI OCCIDENTALE | 25 | 224 | 34 | 258 | 10.0 |
| **LIGURIA** | | | **1313** | **168** | **1481** | **9.2** |
| 070101 | IMPERIESE | 42 | 167 | 23 | 190 | 8.8 |
| 070102 | SAVONESE | 40 | 228 | 25 | 253 | 8.9 |
| **ITALY** | | | **45878** | **7718** | **53596** | 9.7 |

Source: Ministry of Health data

## FOCUS REPORT ON HOSPITALS IN THE ALPINE AREA

Alessandro Cimbelli and Laura Murianni – Italian National Institute of Statistics

The general goal has been the evaluation of time and road distances from all the 1746 alpine municipalities to the nearest hospital. There is a total of 114 hospital facilities located in alpine area. The road and time distance between them (municipalities-hospitals) could be derived by specific web services or by means of vector road network and some network analysis tool included in GIS software.

Processing description

The analysis has been carried out by means of free or open dataset and web-services.

Information about hospital facilities in the alpine area have been provided without any geographic coordinates but with the street addresses. So, the first task has been the geocoding of all the hospitals with the batch geocoding service offered by the website http://www.findlatitudeandlongitude.com/.

After some tries, the addresses format that seems to reduce fails on the geocoding process has been the following:

*<hospital name>, <place name>, <civic address>, < number>, <zip code> - <municipality> (<province>)* .

The resulting accuracy of the geographic coordinates returned in the output is, in more than 60% of the cases, relative to the municipality, and goes better for the other records reaching a "rooftop precision" for 15 hospitals over 114. The geographic coordinates of the 1746 alpine municipalities have been extracted considering a point inside the main urban settlements of each administrative area.

Once obtained the geographic coordinates of hospitals and municipalities, it is possible to evaluate their mutual road and time distance. This task could be very heavy in terms processing resources if applied to the entire set of records without any simplification. The distance/time matrix could be, in this conditions, of 114 x 1746 = 199044 values. If using a web service for this task it should be considered the limits for the maximum number of queries per day/second (with Google Maps Api: 2500 requests every 24 hours, 10 per second).

So, without considering the implementation of network functions on a GIS desktop software and the in-house processing of a road graph, it's necessary to introduce some simplification, reducing the number of all the possible values in output.

For each hospital only the first 100 nearest municipalities have been considered (the proximity is intended to be as a straight line distance). The matrix in this way has been reduced to 100 x 114 = 11400 values and it has been produced by means of the vector analysis functions of QGIS. The selection of the nearest hundred settlements is only a simple way to cuts out the most distant settlements but is not considered as the real road distance. With the Google Maps API, implemented in the Friendly Batch Routing[26] (FBR) software, realized by the Luxembourg University, it has been possible the evaluation of the travel time and road distance between municipalities and hospitals. The input requested format is the following:

*<record id>; <latitude_of_origin>, <longitude_of_origin>; <latitude_of_destination>, <longitude_of_*

[26] http://geow.uni.lu/apps/fbr/

*destination >*

and in the output we have obtained from the software, that runs as a local web service, three additional fields: *<time(seconds)>, <distance(meters)>, <steps>*

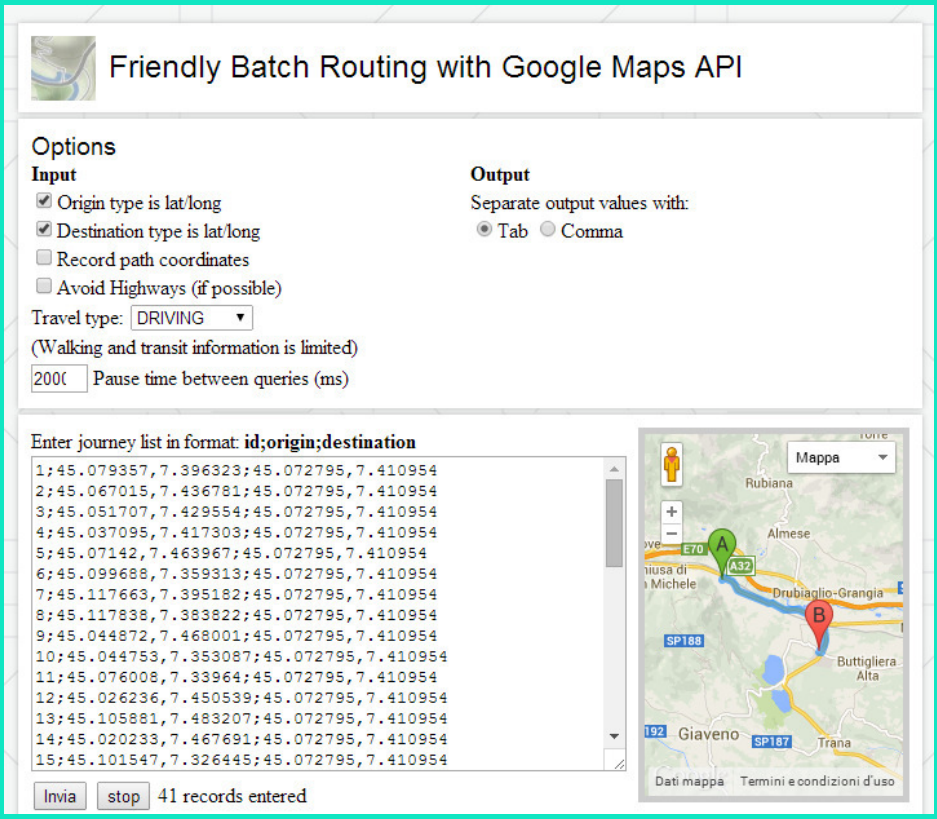



Figure 1: FBR interface

Due to the limitations for the number of requests, the processing has been carried out in five days.

Travel time values have been at the end classified in four classes of 30 minutes each in order to assign to each municipality the class of isochrone and to produce specific thematic maps.

Results

The isochrones maps shown in the two next figures demonstrate, as expected, that the most distant settlements are located in the high mountains and near the national border. In particular it is possible to see the high impact of the earth morfology and of the barriers represented by lakes and mountains in the travel times in the alpine area. This is particularly true in the northern Piemonte and Valle d'Aosta regions where many municipalities need more than one hour of travel to reach an hospital.

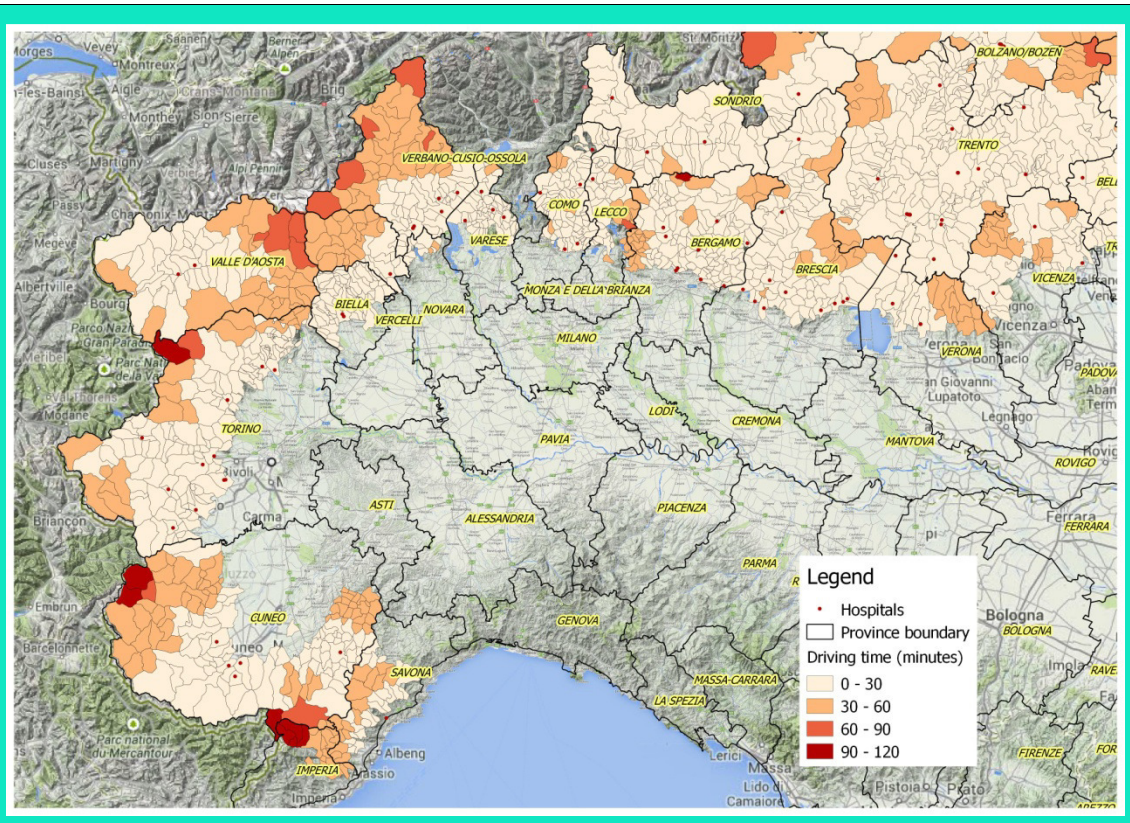



Figure 2: Travel times to hospitals in West Alpine area

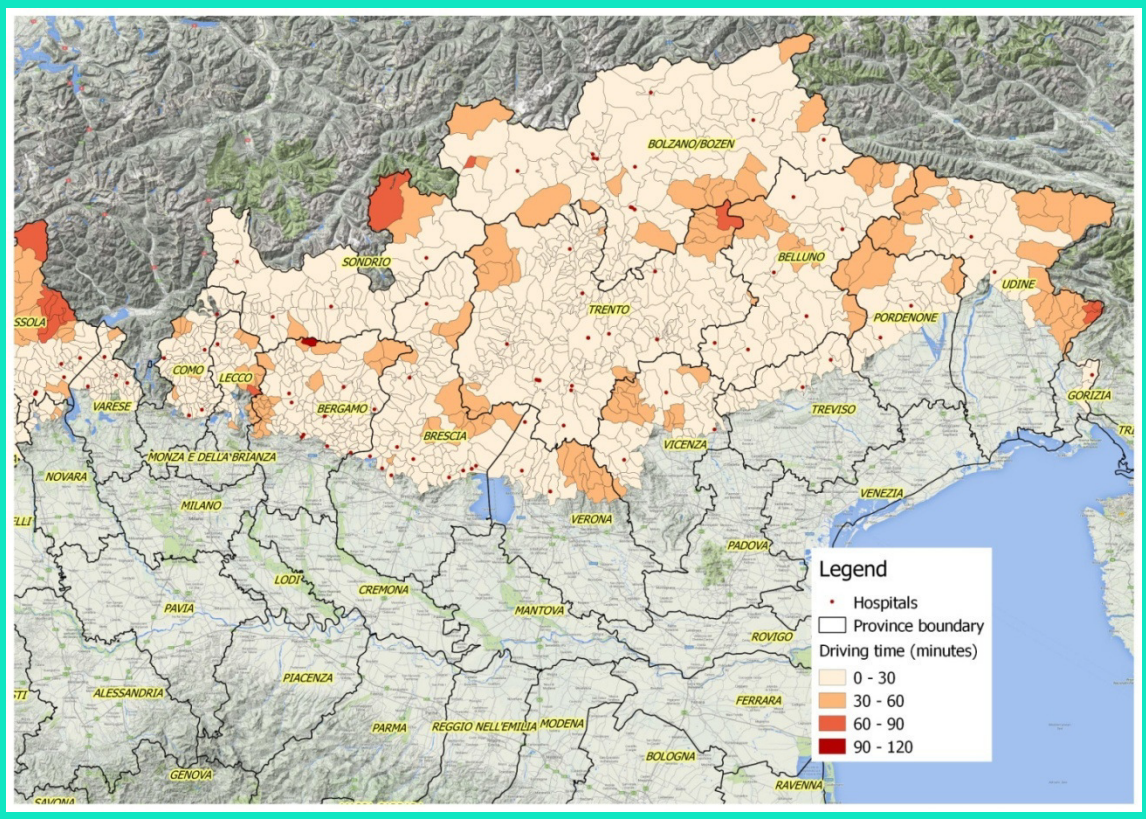



Figure 3: Travel times to hospitals in East Alpine area

As an example let's consider the path between the municipality of Malesco (VB) and the hospital "Stabilimento Ospedaliero Castelli" of Verbania. The travel time is 57 minutes for 60 km of road, but the straight line distance is only 22 km.

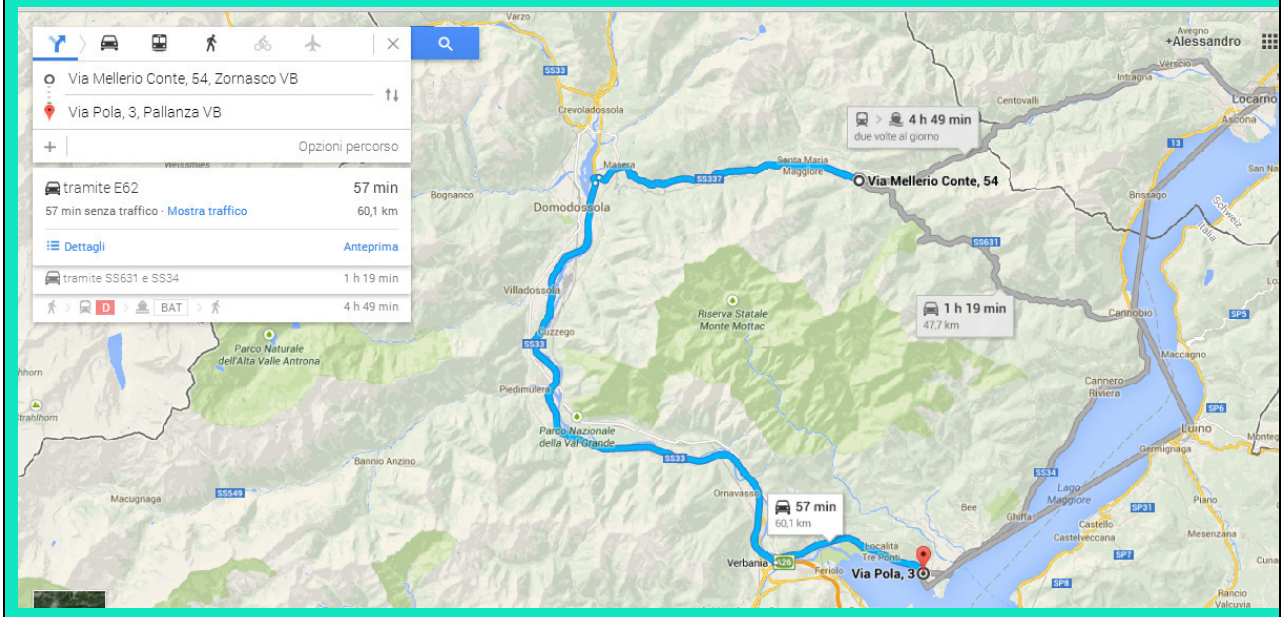



Figure 4: Travel path from Malesco and the hospital of Verbania

At the same time the maps show a good distribution of the hospital facilities in the eastern Italy, where in the regions of Lombardia, Veneto, Trentino – Alto Adige and Friuli Venezia Giulia there are only eight municipalities, over 1108, with a needed travel time from hospital of more than 1 hour.

In general the distribution all Italian alpine municipalities by travel time classes is the following:

| Travel time class | Number of municipalities |
|---|---|
| 1 | 1336 |
| 2 | 344 |
| 3 | 19 |
| 4 | 9 |

## 5.2 Infancy day-care

Fertility indicators play an important role, in order to study familiar and reproductive behaviours. In the analysis it is important to devote special attention to the presence of facilities, that can encourage women to have children and families to grow.

The share of children attending social and educational services for early childhood is used to measure the implementation of policies of reconciliation of family and work commitments. The indicator is defined as the percentage of resident children in the age 0-2 years (until the age of 3 years) attending the socio-educational services (only services that are managed or funded by the municipalities are considered). The socio-educational services for early childhood include both nurseries and supplementary services for young children (including services managed in home). The indicator is available separately for the two types of services and in joint form.

NATIONAL CONTRIBUTIONS

ITALY

*The regulatory framework in recent years has been aimed at increasing the number of socio-educational services throughout the country: in 2007 it was started the "extraordinary plan of action for the development of the regional system of social and educational services for the early years ", with the signing of the agreement in the Joint Conference between the government, the regions and local governments. In addition, this and other kinds of services have assumed a key role within the unitary regional policy, drawn and described in the 2007-2013 National Strategic Framework (Qsn). In this case the goal is to encourage female participation in the labor market, raising the proportion of children who benefit from child care services.*

*The available data allow you to examine the time series between 2004 and 2011 (last year available). At the national level, after a slight but continuous increase of the indicator in 2011 is recorded for the first time a negative change over the previous year, corresponding to 0.5 percentage points lower. This variation is due to the decrease of the users with regard to the supplementary services, while remaining stable, the share relating to nurseries.*

*In 2011, thirteen of the twenty-four provinces of the Alps show values of the indicator above the national average (13.5%). Between 2007 and 2010, the changes are positive in almost the entire area, with the sole exception of the provinces of Imperia, Savona, Como, Biella, and Verbano-Cusio-Ossola. Between 2010 and 2011, fourteen provinces of the Alps show reductions for the enrollment of children in social and educational services for early childhood.*

## 5.3 Mobility

Transport and mobility have always been crucial issues in the socio-economic development of the Alpine area. They have fostered national and international trade and set the basis for the tourism activities. Nevertheless, the mass motorization and the increased access to transport by different social groups – i.e. the so-called democratisation of transport (Hernández Luìs, 2008) – have raised the issue of sustainability, mainly in environmental terms (e.g. energy consumption and emission reduction). Since then, mobility has been no longer interpreted as a mere economic development accelerator, but also as a high-impacting activity, which needs to be managed and regulated.

According to the First Report on the State of the Alps (Alpine Convention, 2007), the terms mobility and transport are not exactly synonymous. In fact, transport is a means of moving persons and goods across space, while mobility is a more complex and socially embedded phenomenon. Mobility necessarily involves transport, but includes also "the accessibility of personal options and opportunities to serve human needs in a social sense" (potential mobility) and "the position of humans in a symbolic space" (realized mobility) (Götz, 2003).

Common approaches to analyze mobility and transport are systemic approaches (Rodrigue, Comtois and Slack, 2006; Tolley and Turton, 1995; Hoyle and Knowles, 1998). According to them, the transport system is made of nodes and links that allow (potentially) moving across time and space, using different modes (e.g. rail, car, bus, etc.). Adopting this perspective, the Alpine Transport System is a multi-modal network of transport infrastructures and operational services that can be analyzed at a local, regional, national and international level (Permanent Secretariat of the Alpine Convention, 2007). The transport system is both depending on and influencing demographic development. Indeed, on the one hand, demographic factors shape the transport demand and therefore impact on the infrastructural and service characteristics of the system – e.g. quality standards for people with limited mobility. On the other hand, the accessibility of the system influences the selection of the location of settlement areas, the possibility for inhabitants and guests to move in a space (motility) and consequently the development of economic activities as well as the quality of life.

Accessibility is an important issue especially for small rural or peripheral villages in the Alps and its increase due to the upgrading or the introduction of new transport infrastructures have been a major driving force of regional development policies and landscape change. According to the information contained in the Tutorial "Governance Capacity" (2006), the accessibility of the alpine centers (transport infrastructure hubs) has improved at a higher rate than in the periphery, and this trend will continue in the future. The accessibility of small towns has instead remained quite slow, leaving some towns isolated. Despite this general trend, the situation across the Alpine states is quite heterogeneous and the scarcity of studies on the accessibility of metropolitan areas in some countries (e.g. France, Austria and Italy) makes comparisons quite difficult[27].

Accessibility is a valid indicator that allows evaluating the reachability of a location using public or private transport modes. It enables people living in more remote places, such as villages of mountain areas, to connect nationally and internationally, and have access to a broad set of resources and services. Increasing the accessibility of areas by using different public transport modes and their combinations clearly represents a key opportunity especially in mountain areas, where the massive use of private vehicles, which provide the maximum degree of flexibility - is no longer sustainable. Indeed, favoring public transport and discouraging

[27] Voll, F. (2012) Die Bedeutung des Faktors „Erreichbarkeit" für den Alpenraum. Erarbeitung eines alpenweiten Modells der Erreichbarkeit von Metropolen und Regionalzentren vor dem Hintergrund aktueller Diskussionen um Regionsentwicklung in Abhängigkeit von räumlicher Lage, PhD Thesis, Natural science faculty, Friedrich-Alexander University, Nürnberg.

the use of private vehicles is crucial for the creation of more sustainable and efficient transport systems, which directly contribute to the sustainable development of communities. One of the criteria normally adopted to evaluate accessibility is surely the presence (and the frequencies) of public transport modes, which physically provide a mean for people to move from one point to another. An additional criterion to measure the accessibility is the evaluation of the travel times required to move from one point to another. It includes several elements, such as the travel time spent waiting for the vehicle, the travel time spent for the journey and the time required to reach on foot the final destination.

The presence of the public transport service and the travel times necessary to reach destinations characterize the accessibility of the transport system, but accessibility is often not enough to ensure modal shift from private to public means of transportation. A more accurate analysis of the strengths and weaknesses of the system also by adopting passengers' perspectives seems to be crucial to a) set up a user-centered design of the service and b) to increase the attractiveness of the whole system. Therefore, besides quantitative analyses of the performance of public transport, customer satisfaction analyses are a tool to define priorities and measures to meet the needs of the users and create a link between transport operators, public institutions and users.

The case of South Tyrol region provides an interesting example of an integrated and extensive transportation system that not only guarantees a good level of accessibility, but is also capable of satisfying passengers' needs.

## THE PUBLIC TRANSPORT SYSTEM IN SOUTH TYROL REGION (ITALY). MOBILITY, ACCESSIBILITY AND PASSENGERS' SATISFACTION

Anna Scuttari and Elisa Ravazzoli - EURAC Research

### The public transport system in South Tyrol region

South Tyrol is an autonomous province in northern Italy, bordering Austria and Switzerland. The province has an area of circa 7,400 km$^2$ (only 5,5% of which is constructible surface, ASTAT, 2012c) and a population of more than 500,000. The local economy is mainly based on the tertiary sector, with the tourism sector playing a key role, although South Tyrol retains a strong agricultural sector as well (ASTAT, 2012a). The road network (national and provincial roads) is managed at a provincial level, with an extension of 5,016 km, corresponding to 677,8 km each 1,000 km$^2$ (Figure 1); the rail network is partly managed at national and partly at regional level, covering 287 km, equal to 38,8 km each 1,000 km$^2$ (ASTAT, 2012b) [28]. The Brenner Highway crosses South Tyrol province from north to south and is a strategic connection within the Verona-Munich corridor, both in terms of freight and passenger transport. Mobility is crucial to South Tyrol, as to most Alpine regions, since it allows to reduce the depopulation process in the peripheral areas and to increase their accessibility for tourism purposes. Therefore, the local government has always been active in the creation of a solid transportation network, investing in infrastructures, in operational services and finally in customer relationship and information management.

*The integrated transport system in South Tyrol*

Public transport in South Tyrol is characterized by the integration of different means of transport into a single tariff system, as well as the use of clock-face schedules. The integrated transport system includes regional trains for routes within the jurisdiction of the Province as well as for those reaching Trento and Innsbruck, urban and long-distance buses, city buses and certain cable car lines and funiculars (http://www.sii.bz.it/en/south-tyrol-integrated-transportation; http://www.ibv-zuerich.ch/index.php?id=144). Trains are supposed to be the backbone of the network and aim at connecting the main cities and villages one another, bus transportation, cable cars and funiculars are supposed to increase the accessibility of more remote areas, while city busses and urban busses guarantee the mobility within urban centers. In 2014 the integrated transport system includes 114 extra-urban bus lines, 13 city busses, seven funiculars and a dense network of urban transport in the main cities (Bolzano and Merano) as Figure 2 shows. Moreover, the provincial rail network extends along the north south axis (Brenner-Bolzano-Verona line) and the east-west axis (Malles-Merano-Bolzano and Fortezza-S. Candido). The northern part of the Brenner line (Brenner-Salorno) is the oldest in the region, and is the result of a project developed by the Austrian government in the mid-nineteenth century to connect Verona to the Bavarian border. The Bolzano-Verona part was inaugurated in 1859 (Ditterich, 1953). The westbound (Malles-Merano-Bolzano) and eastbound lines (Fortezza-S.Candido) are more recent than the Brenner line. The westbound line was built in 1906 and dismantled in 1990 due to its marginality within the national network. Fifteen years later the entire line was taken over and revamped by

[28] If we compare South Tyrolean transport infrastructure data with the corresponding ones in Italy, we notice a comparatively low coverage of both road and rail transport. The lower coverage, which is common to most Italian Alpine regions, may be due to the presence of mountainous areas, which imply reduced constructible surfaces and dense settled areas. Source: ISTAT (2006) *Le infrastrutture in Italia. Un'analisi provinciale della dotazione e della funzionalità.* http://www3.istat.it/dati/catalogo/20060512_00/inf_0607_infrastrutture_in_Italia.pdf).

the Autonomous Province of Bolzano. The route is furnished with Fast Light Innovative Regional Trains (FLIRTs): a regionally financed and more advanced rolling stock compared to that in use on most Italian rail lines, including the Brenner line. The Val Pusteria Valley line (Fortezza/Franzensfeste-Brunico/Bruneck-San Candido/Innichen) was inaugurated in 1871, and electrified at the end of the 21st century. In 2008, this line was also provided with some additional local trains (FLIRT trains), with a similar design to those used on the Val Venosta line, which can carry bycicles in the summer months and are adapted for ski transport during the winter. Thanks to their versatility, these trains represent a viable alternative to cars for commuters, tourists, hikers and sport enthusiasts alike.

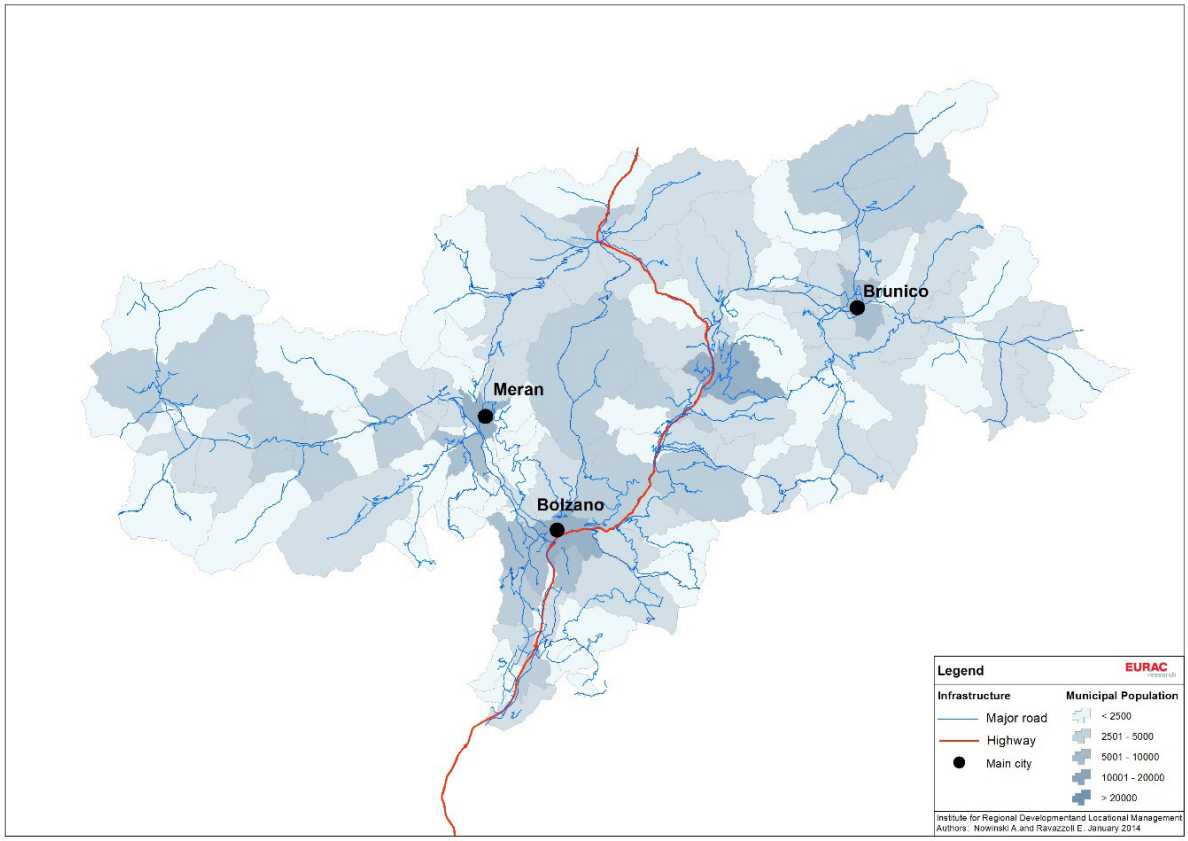



Figure 1: Map of the road transportation system

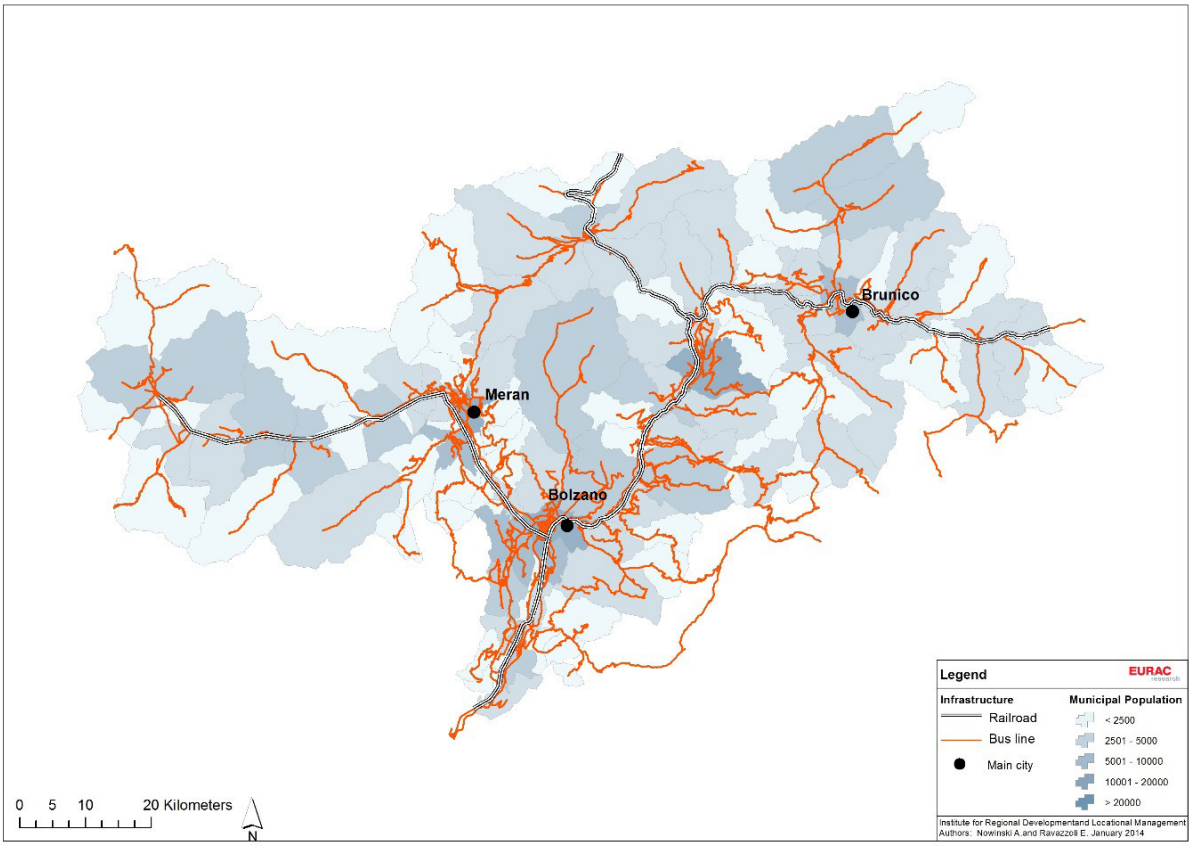



Figure 2: Map of the public transportation system

*The tourist transport system*

With more than 6 million arrivals and 29 million overnights in 2012 (ASTAT, 2014), tourism plays a key role in the South Tyrolean economy. In 2005 the direct added value from tourism was 1,254€, corresponding to 8.2% of local GDP (ASTAT, 2009). The main tourist markets are Germany and Italy - respectively corresponding to 48 and 33% of overnights in 2012 (ASTAT, 2014). The journey to South Tyrol occurs mainly by car - 89% of arrivals are car-based and only 4,6% by public means of transport (ASTAT, 2008). Nevertheless, cars are partially substituted by public means of transport during holidays - respectively 56% of trips are made by car and 21% by public means of transport during the stay (ASTAT, 2008). The public transport system is promoted to tourists through mobility cards, which allow the combination of transport services and access to tourist attractions. Special tourist cards - 3.7 million in 2011 (ASTAT, 2014) - are offered to tourists free of charge in some municipalities, in order to increase the use of public transport. Notwithstanding these incentives, several studies confirm that tourists have scarce information on the mobility offer and therefore use mainly single tickets. An adequate information and awareness in cooperation with tourist offices and accommodation facilities is therefore a key element to increase the access to public transport. Public transportation for tourist is a great challenge and opportunity for South Tyrol region, especially if considering that those tourists who use public transport in South Tyrol are on average more satisfied than inhabitants (Pechlaner et al., 2012; Pechlaner et al., 2013). Cable cars and funiculars are an important element of the tourist transport system. South Tyrol counts 375 cable cars, concentrated mainly in the eastern part of the region. Funiculars are crucial to tourism development, since they support winter sport activities and have an increasing relevance in the summer season, as well (ASTAT, 2012). Recently, the connection between rail and funiculars has been introduced in Pustertal Valley at the Percha station. This innovative element has caused the need for a new integration between modes and a reorganization of

parallel services (e.g. skibusses), as well as the introduction of new product and pricing policies for winter tourism.

*Accessibility granted by public and private transport mode in South Tyrol*

In order to measure the accessibility granted by the public transport system in South Tyrol, we have considered two separate dimensions of travel times: the time required to reach the closest bus stop or rail station (*accessibility of the transport system*), and the actual travel time spent while travelling (*accessibility of the destination*). Data on the two dimensions has been collected in different ways: the *accessibility of the transport system* was estimated through the European project INTER-Regio-Rail (www.interregiorail.eu) and particularly through the survey on residents' travel behavior in the South Tyrol Region; *accessibility of the destination* was calculated through an ad hoc data collection concerning travel times, which allows the construction of an original destination matrix[29]. Results of the project INTER-Regio-Rail offer an estimation of the average time required by inhabitants to reach the nearest rail station in South Tyrol. This amounts to 12 minutes approximately and 44% of the interviewees cover it by foot. The origin destination matrix enables to compare the travel times required to cover a given distance by public and private means of transport in South Tyrol (i.e. by train or bus vs. by car). The distance examined as a representative case is that between each municipality and the most important transport hub of the region, the city of Bolzano. It is necessary to mention that the collected travel times to cover this distance refer only to the accessibility of the destinations (the actual travel time spent in cars/public transport) and do not consider the accessibility of the transport system (time required to reach the closest bus stop/railway station)30. Moreover, travel times were collected by measuring the time taken to both a journey made by bus and by train, but only the fastest travel time was considered and represented into the map.

Figure 3 shows the accessibility of the destination Bolzano – i.e., the travel time necessary to travel on public means of transportation from one municipality to the city of Bolzano. Figure 4 shows the same information for a journey made by car. Data show that on average it is possible to reach the city of Bolzano within 70 minutes by using public transport and within 55 minutes by using the car. What is clear from Figure 3 is that the North-West part of the region is the most accessible by public transport (being the travel times within 60 minutes). Indeed, in this part of the region municipalities can benefit from a direct public transport connection (either bus or rail). However, by looking at the two maps simultaneously, it emerges that the Western part of the region is more reachable by public transport than by car. On the contrary, the Eastern part is less accessible, since the minimum time required in reaching Bolzano ranges from 61 minutes to up to 90 minutes. The most accessible part of the region by car includes municipalities that are located along the North-South direction, following the A22 highway, while the Eastern and Western parts are not easily reachable by car and the minimum time required reaching Bolzano ranges from 61 up to 90 minutes, if not more.

[29] The origin destination matrix of travel time was created by taking into consideration the centroid of each municipality. Data on travel time between each municipality and Bolzano were gathered from the viaMichelin website (http://www.viamichelin.it/) in the month of November 2013.

[30] We could not make an entire estimation of accessibility times by adding the INTER-Regio-Rail average time to the origin-destination matrix estimation because the first data only refer to rail transport. Moreover, average values might be distorting, since differences are expected to be evident across the province.

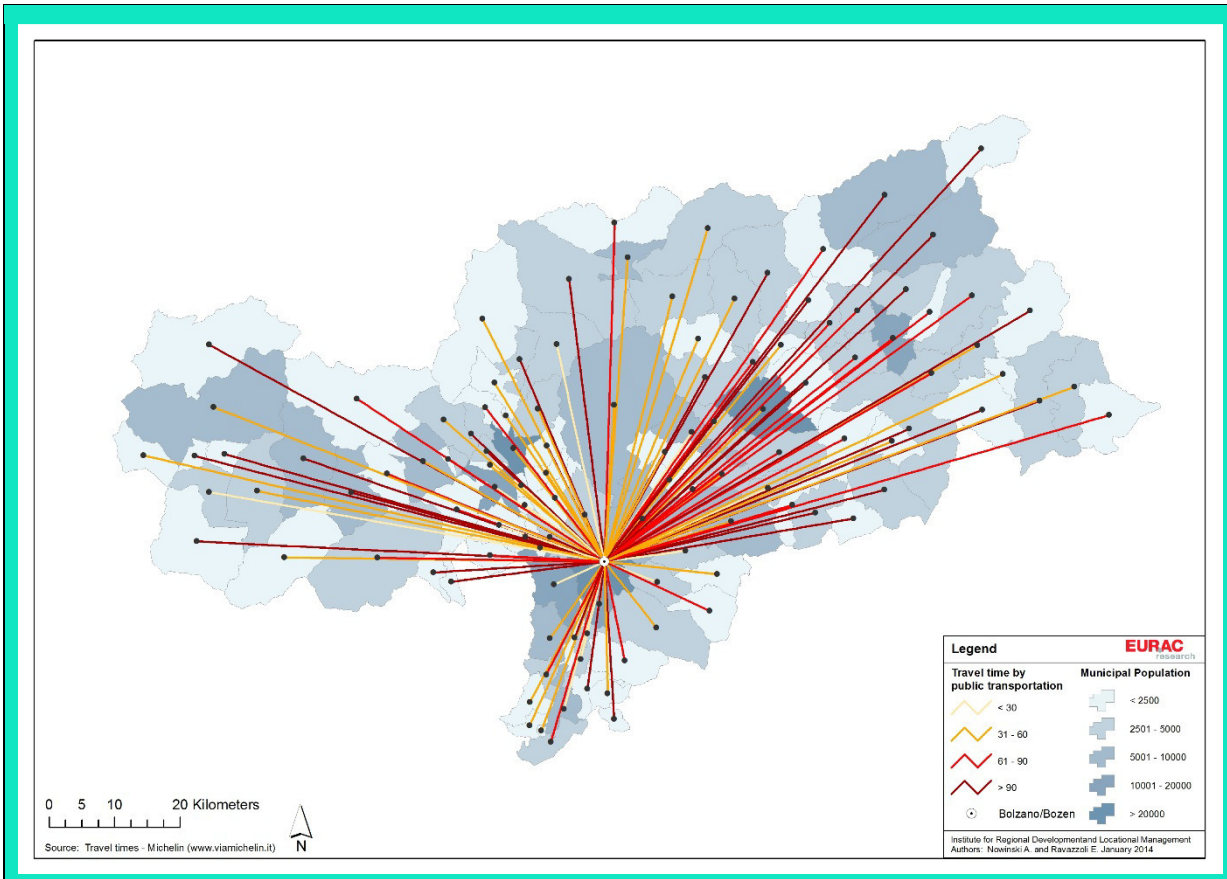



Figure 3: Map of the travel time to reach Bolzano city by public means of transportation

Overall, in spite of the different patterns between the eastern and western South Tyrolean areas, the accessibility by car and by public transport in the region looks fairly similar, with a maximum difference of 36 minutes in favor of the car. The inclusion of the "first mile" and "last mile" of the journey may offer more precise results in the comparison between public means of transport and car usage. Nevertheless, to precisely compare a "door-to door" journey by public means of transport to the corresponding journey by car, "last mile" connections from parking places to final destinations and parking times should be calculated, as well. This preliminary results on the comparison between travel times on public and private means of transport could set the basis for a more detailed and precise analysis of the "door-to-door" journey. Moreover, besides the positive evaluation of accessibility, results show the spatial disparities within regional areas and enable to define priorities in future interventions.

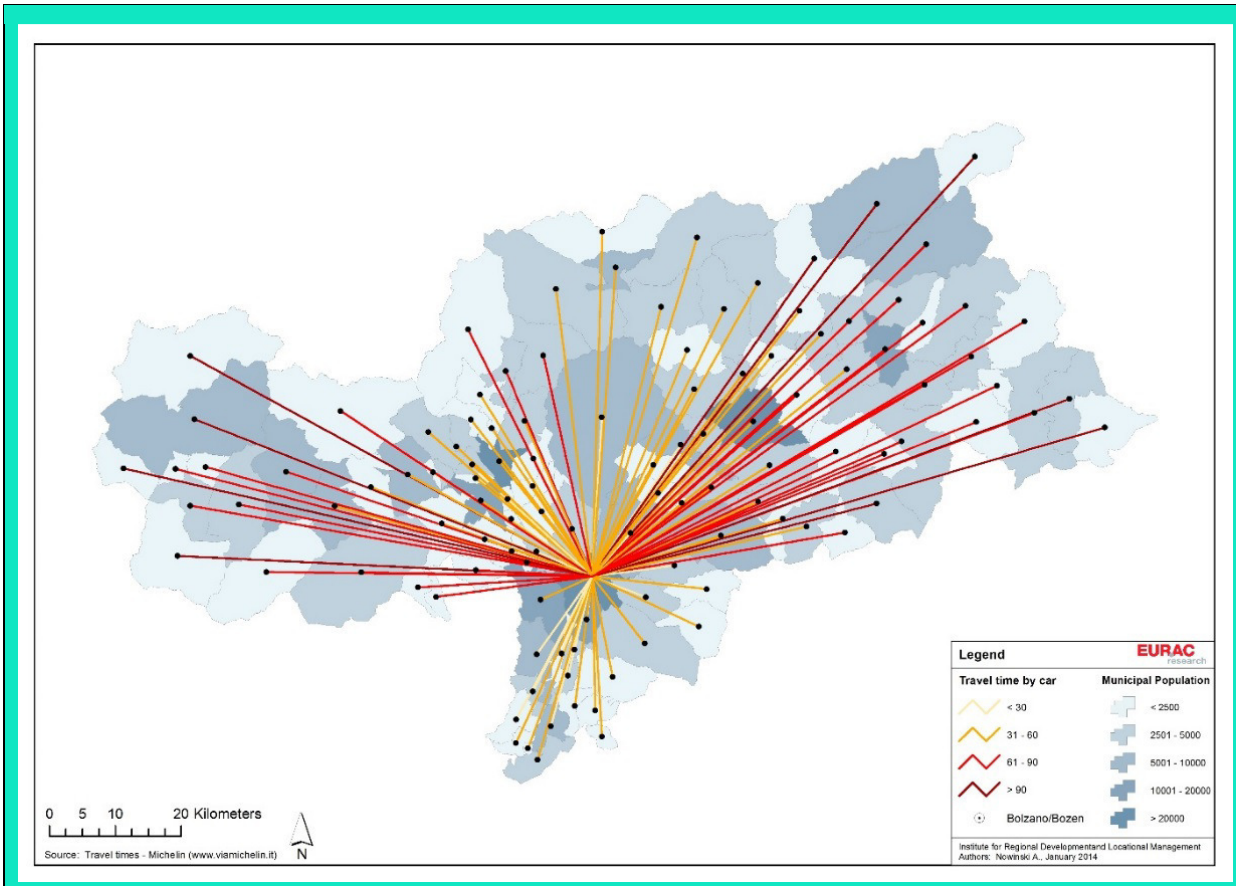



Figure 4: Map of the travel time to reach Bolzano city by car

## Concluding remarks

The integration of different means of transport, the good accessibility and the capacity to meet passengers' needs, as the results of the INTER-Regio-Rail study shows (Pechlaner et al., 2012), demonstrate the high quality of the South Tyrolean transport system. This good performance is not only relevant *per se*, but has several impacts on the selection of the settlement locations and the construction of new built-up areas, on the quality of commuting (and the related quality of life of residents) and finally on the overall sustainability of the region[31]. Moreover, an efficient transport system discourages the usage of private means of transport, thus indirectly reducing pollution and greenhouse gasses emissions. Finally, free access to public transport for young and elderly people has a positive impact on social cohesion, since it increases the potential mobility (*motility*) of these passenger groups, while contemporarily stimulating their sensitiveness to sustainable mobility principles. Nevertheless, the realization and the maintenance of such a widespread and accessible public transport system across time needs considerable financial efforts, which may be questioned in periods of financial straits. In this sense, a correct balance between the scale of investments and their capacity to reduce environmental and social impacts of the transport system is crucial to foster a sustainable regional development in the long term, particularly in Alpine regions.

[31] The role of mobility for sustainable development of Alpine areas has been statistically tested and confirmed by Putzhuber, F., Hasenauer, H (2010), Deriving sustainability measures using statistical data: A case study from the Eisenwurzen, Austria, *Ecological Indicators,* 10, 32–38.

GOOD PRACTICES

PROVIBUS – PUBLIC TRANSPORT IN PIEMONTE (Italy, Piemonte, Torino Province)

Issues:

- improvement of the regional competitiveness
- Innovative solutions for providing services in sparsely populated areas.

Type of measure:

- pilot action
- Political measure.

Funding: Provincia di Torino

Background:
The difficult connection among small centers and the main ones is widespread in Piedmont, not only in the Alpine valleys, but also in the hills land, and in the plain too.
Many families meet problems to reach their working place and, more, to deal with the school frequency of their sons. Official traditional public transport is not effective because of its high cost when the number of passengers is very limited.

Implementation:
The service of the "Provibus" (car service on demand, by previous reservation, shared (or not) with some other customers) started in the hills near Turin, where many people leave, but working in the city. Secondary schools and universities are sited in Turin, so many young people must travel all days at different hours.
The promising start of the service was confirmed more and more in the following years, and at now we have 10 areas served by this service, four of them in the Alpine area.

Indicators:
Since 2006 (initially start of the first service in a plain area of Crescentino), nine lines more are working.

Transferability:
Very simple methodology, total transferability.

Link: http://www.provincia.torino.gov.it/trasporti/provibus/index.htm#ilservizio


ALIAS PROJECT: ALPINE HOSPITALS NETWORKING FOR IMPROVED ACCESS TO TELEMEDICINE SERVICES (Lombardy Region – DG Health (project coordinator), Rhône Alpes, Friuli Venezia Giulia Region, Carinthia, Slovenia, Bavaria, Canton Geneva)

Issues:

- innovative solutions for providing services in sparsely populated areas
- increasing of the knowledge on the territorial dynamics and elaboration of a strategy for the development of the area and for the safeguard of the services.

Type of measure:

- pilot action (project: ALIAS – n. 10-2-2-IT – cofounded by the Alpine Space Programme)

Funding: 1,914,600 €

Background:
Limited access to healthcare (HC) and quality of care are inextricably intertwined. Improving access to care in medically rather underserved areas and better professional interactions for local providers increase HC services quality in these areas. One way to address the accessibility issue is through the "redistribution" of specialists and clinical resources available in urban HC centres to these Alpine Space areas. Telemedicine (eHealth) allows this to take place without physical relocation of providers by eliminating the significance of time and distance between patient and providers.

Implementation:
ALIAS ( July 2011 – October 2012) was aimed to offer ICT public services for citizens and professionals. The project enabled the creation of a Network shaping the ALIAS Virtual Hospital, networking 12 pilot nodes, for sharing medical information and exchanging best clinical practices, to improve the efficiency of hospitals in remote alpine areas. Two telemedicine services have been developed and piloted: Information provision

allowing healthcare professionals of any ALIAS hospital network to access information about a patient coming from any (other) ALIAS region, upon his consent; Advice querying allowing any healthcare professional of the ALIAS hospital network using telemedicine tools to require expert advice on a patient under treatment.

**Indicators:**

Being a telemedicine oriented pilot initiative carried out at transnational level and focused on the role of hospitals in delivering healthcare services at a distance, ALIAS has proved the concept of an innovative and exportable model of cooperation between remotely working professionals. This model has been based on an organisational and technical platform including secure communication, safeguard of shared data, specialised clinical expertise and reliable process clinical information system enabling to support decision making by healthcare practitioners.

At the project conclusion all 12 pilot sites were in the position to run the ALIAS services. The results of the evaluation showed that from a technical and security standpoint the system has been widely accepted by the users.

The output of the pilot action also influenced local governance in health. The principle that has guided the development of the ALIAS platform, both from an organizational and technical point of view, has been the enhancement of the community welfare in the Alpine Regions. In this light, if ALIAS was conceived as a first step of the cooperation between the Lombardy and Rhone-Alps regions in the healthcare sector (a Memorandum was signed in 2008), during its implementation new opportunity of cooperation originated from the strong will of all the involved Regions to reinforce that kind of cooperation to neighbour regions. With this prospect, during the ALIAS timeframe, the healthcare Ministry of Lombardy signed 2 letters of intent with Friuli Venezia Giulia Region (2010) and the Bavarian Ministry of Environment and Public Health (2012). Further initiatives have been also recently initiated by Lombardy with local healthcare authorities in Slovenia and Austria. This policy framework promises to give coherence and continuity to a transnational initiative which has a strong policy commitment and a long-term vision for making its results sustainable and reusable. Finally, the ALIAS initiative has been included in the Strategic Plan for 2012 of Lombardy Region driving the implementation of healthcare policies (DELIBERAZIONE N° IX / 2633 Seduta del 06/12/2011 - DETERMINAZIONI IN ORDINE ALLA GESTIONE DEL SERVIZIO SOCIO SANITARIO REGIONALE PER L'ESERCIZIO 2012, Annex 8).

**Transferability:**

The groundwork of the ALIAS project has resulted into a combination of technical, organisational and legal components, featuring the asset on which to verify the capitalisation of its results for building up further development. Given the results achieved by the ALIAS operation and the positive experience gained through the deployed services, the project partners, enlarged to new actors, committed them to capitalise the work done escalating the ALIAS central platform to include new services directed towards both patients and Primary Care services.

Under the framework of the Alpine Space Programme 2007-2013, the NATHCARE project – Networking Alpine Health for Continuity of Care – may be seen therefore as the natural evolution of its «ancestor» system ALIAS. The main concept at the heart of the NATHCARE project is to provide a set of services promoting integration of Primary and Secondary care processes - a key to increase both efficiency and efficacy in the Health Care domain – while allowing patient empowerment and ensuring transnational adoption of well documented best practices, in such a way to provide availability of highly trained medical professionals even in remote areas. To do so, NATHCARE is capitalising the experiences, expanding the scope and refining the services developed within the framework of the ALIAS initiative.

**Link:** www.aliasproject.eu

# 6. Conclusions

The general aim of the RSA V was to describe the main socio-demographic phenomena across the Alpine area, overcoming the national boundaries. The subsequent adopted strategy has envisaged data collection at municipal level, in order to produce comparable data and create an harmonized overview of the alpine situation in terms of indicators' definitions, time series of references, geographical homogeneity and sources considered.

Another step has been the comparison of the Alpine region with the respective national average data: this allowed highlighting some peculiarities and focusing on them, in order to analyse the mountain-related problems and the solutions on field as presented in the good practices examples. The analysis of the Alpine socio-demographic situation revealed, first of all, that the Alpine region is currently experiencing a markedly heterogeneous demographic growth.

Differences in demographic growth are related to accessibility, topography and altitude, socio-economic factors, position and role of the Alpine region in each Country. Areas with growing population stay side-by-side with demographic decrease areas, and similarly contrasting trends can be also be found, at lower scales, in the same regions or even provinces. In very general terms, it can be stated that population is growing in the central and in the northern part of the Alps and decreasing in the eastern Alps and in some sectors of the southern side of the crescent. All over the 20th century a pronounced difference existed between the German Alps and the Italian and French Alps; today, smaller but more complex differences can be pinpointed.

A final step of analysis allows considering simultaneously different variables (both demographic and employment) in order to synthesize them in one or even a reduced set of main dimensions. Then different clusters of Alpine areas can be built according to their inner characteristics observed with respect to the dimensions previously individuated (areas of well-being vs. critical areas).

As of 2013, Alps were inhabited by 14,484,617 people on a 191,398 $km^2$ territory, with a population density of 76 inhabitants per $km^2$, that makes the Alps one of the less populated areas in central Europe but also one of the most dense mountain areas worldwide. Population density is generally higher in the peri-alpine areas and in the main valleys, compared to core Alpine area.

The establishment of urban centres within the Alps and the ongoing process of peri-urbanisation have led to a change in living standards. The Alps are no longer a mainly-rural area with a rural population but now they can be considered the preferred residence for people who want to combine the advantages of urban infrastructure with the attractiveness of unspoilt countryside.

In the last decade the average population growth rate remains positive thanks in particular to immigration, which has been gaining considerable strength. Migratory fluxes involve overall the peri-urban and the peri-alpine areas; nevertheless, depopulation of isolated areas is observed showing a heterogeneous demographical pattern.

In the whole Alpine area the foreign resident population is 87.4 per 1,000 residents but the situation is very heterogeneous: the minimum is in the Slovenian Alpine area with 41.3 (followed by French Alpine area, 62.3) and the maximum is observed in Liechtenstein (335.0) and Switzerland (203.3), caused probably by the attractiveness for senior and wealthy citizens on account of its privileged setting (tax scheme, climate, leisure facilities).

Next to the international population movement which has become a marked social and demographic feature of the whole of Europe, the Alps also receive fluxes of older people who desire to live in a pleasant

environment. Moving in the opposite direction, young people leave in considerable numbers the highlands (and sometimes the Alpine perimeter) to search education and jobs that are more specific and qualified.

Linked to this situation, another key issue of Alpine demography is the ageing of the population, which imposes a reconsideration of the modes of provision of public services and of some specific but crucial aspects of the welfare system, not least because the localities that are most affected by ageing are the smallest and least connected with the main road network. In particular, ageing heightens the need to improve certain services (e.g. social services, hospitals, distribution of meals) and to create ad hoc structures. Both the decrease and the ageing of population cause the closure of services like primary schools: this entails changes in the patterns of cultural transmission and intergenerational relations, thereby affecting the whole community.

All in all, it can be concluded that in the Alpine area economic development, like demographic evolution, is extremely heterogeneous and polarized. The symbiosis of tourism and services, industry, electric power generation, agriculture, transport and mobility, is the basis of economic development.

The evidence collected and systematized by the expert group highlights that behind the naked figures which measure the declining or growing number of inhabitants or even the structural ageing of the Alpine population hide compositional changes. An all-important issue is represented by the compositional changes many upland communities are experiencing in their ranks owing to the "immigration" of new inhabitants, generally younger than the majority of the local population, mostly coming from the lower reaches of the Alps or indeed from the cities in the plains, and quite often also from afar. Needless to say, these compositional changes must be especially pronounced in those areas where population is growing in spite of a negative or at best stationary natural balance of births and deaths. But even in those municipalities where the number of inhabitants is falling there are such flows of immigration.

The characteristics of different Alpine areas have been illustrated also with the support of accurate maps. The connection with the territory is crucial to understand the current demographic situation and the most recent tendencies. Furthermore, the support of well-known general studies and the empirical evidence yielded by extant surveys have all helped to give the Report what we reckon to be a satisfactory degree of authoritativeness.

On the other hand, it has to be mentioned that it was not possible for all the Contracting Parties to participate in drafting the report with the same degree of efficiency and completeness. The difficulties found by some Parties to provide direct information on some relevant issues has resulted in a certain lack of homogeneity in the data set. For the time being, this has hampered an adequate balancing of the contributions from different regions in the Report, as well as a detailed comparison of the figures.

It is also very important to notice that the recent national censuses (2011) have offered the opportunity to dispose for the whole Alpine area of a larger and more up-to-date amount of data at a more detailed territorial level, which will permit to outline a more precise framework, most of all for labour market, to assess the extent and direction of the changes that have occurred in the past decade.

To provide an easy-to understand overview of this complex and colorful picture it can be useful to apply methods and tools such as synthetic indexes, which are able to summarize in a single average value the multiplicity of characteristic values of each different micro territorial area. To measure the demographic and labour market's dynamism in the Alps the Mazziotta-Pareto Index has been applied to a set of eight demographic and labour market's indicators, calculated on each one of the Alpine municipalities included in the analysis.

Furthermore, a final step of analysis allows considering simultaneously different variables (both demographic and employment) in order to synthesize them in one or even a reduced set of main dimensions. Then

different clusters of Alpine areas can be built according to their inner characteristics observed with respect to the dimensions previously individuated (areas of well-being vs. critical areas).

The cluster analysis confirms that, at the micro territorial level, in the area persist huge differences in conditions and dynamics both with reference to the situation of the population and the demography, and with reference to the labour market. These differences in some cases go across the national boundaries. In others, however, they are rather clearly defined and delimited by national or even regional boundaries, highlighting the importance of any policy in guiding certain phenomena.

Some "Thematic Analyses" (specific chapters dealing with a particular phenomenon cared by single Countries, Observers, external subjects) and a good practices collection has been included in the final version of the Report. These further studies dealing with demographic changes and their impacts on labour market and service provision have been collected in order to prepare examples and suggestions for policy-makers.

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# ANNEX A - GLOSSARY

## Demographic overview

*Area of permanent settlement* | Area which is inhabited or used continuously throughout the whole year; in other words, where the majority of human activities is concentrated. This area includes intensively used agricultural areas, settlements and transport infrastructures, but does not include forests, pastures, bare rocks, wasteland and water surfaces. Due to the requirements of the respective spatial planning, the relevant administrative and political definition of the area of permanent settlements differs in the individual countries" (Permanent Secretariat of the Alpine Convention, 2007).

*Total resident population (absolute values)* | The amount of population usually resident in a specified geographic area (municipality)

*Women (per 100 residents)* | The amount of women usually resident in a specified geographic area (municipality) calculated per 100 residents.

*Foreign resident population by sex (per 1000 residents)* | A foreigner is a person who is not a citizen of the host country in which he or she is residing or temporarily sojourning.

*Percentage of elderly population* | Residents above 65 years on the total population * 100 (P65+/P*100).

*Total resident population ageing index* | The ratio between the population aged 65 and more and the population aged less than 14*100 (P65+/P0-14*100).

*Percentage of working-age total resident population* | The percentage on the total population of the residents aged from 15 to 64 (P15-64/P*100).

*Population density (residents per km$^2$)* | Number of residents per unit of area (square kilometres)

*Population growth rate (per cent)* | Represents the average annual growth on the population in a determined time frame (in this report 2001-2011 or 2002-2012). This indicator is calculated according to this formula: ((Pop_t – Pop_s)/(Pop_s * (t-s)) where t = last available year and s = first available year.

*Natural change* | The number of live births minus the number of deaths.

*Crude birth rate (per 1,000 residents)* | The crude birth rate is the number of live births occurring among the population of a given geographical area during a given year, per 1,000 mid-year total population of the given geographical area during the same year.

*Crude death rate (per 1,000 residents)* | The crude death rate is the number of deaths occurring among the population of a given geographical area during a given year, per 1,000 mid-year total population of the given geographical area during the same year.

*Total fertility rate (per 1,000 women)* | Refers to the number of children that would be born per 1,000 women assuming no female mortality at child-bearing age and the age-specific fertility rates of a specified country and reference period.

*Life expectancy at birth* | The average number of years that a person at that age can be expected to live assuming that age-specific mortality levels remain constant.

*Life expectancy at 65 years* | Life expectancy referred to people who are 65 years old.

## Labour market

*Inactivity rate (per 100, by sex)* | The inactivity rate used is obtained from the percentage ratio of non-participants in the labour force in the 15-64 age group to the corresponding population. "Non-participants in the labour force" are defined as those individuals who are classified as neither being employed nor seeking work.

*Employment rate (per 100, by sex)* | The employment rate of the population aged 15-64 years is obtained from the percentage ratio of employed individuals to the population of the same age class. According to the labour force survey, harmonised at the European level, a person is defined as employed if, in the reference week, he/she has done at least one hour of work in any activity entailing remuneration in money or in kind or has been temporarily away from work (for example on holiday, sick leave, or receiving income support while temporarily laid off), but has kept his/her job or remained self-employed.

*Unemployment rate by sex (per 100)* | Unemployed people are those who, during the reference week: (a) had no employment and (b) were available to start work within the next two weeks and (c) had actively sought employment at some time during the previous four weeks. In addition, unemployed people include those who had no employment and had already found a job to start later. The harmonised unemployment rate provides the number of unemployed people as a percentage of the labour force (the total number of people employed plus unemployed).

*Employment by NACE sectors (percentage on employed people)* | For each territorial unit the distribution of the employees according to the following classification (economic activity of the establishment where the work is performed). See the following table for the NACE classification in 12 categories.

| | |
|---|---|
| 1 | Agriculture |
| 2 | Manufacturing |
| 3 | Construction |
| 4 | Wholesale and retail trade |
| 5 | Transportation |
| 6 | Accommodation and food service activities |
| 7 | Information and communication |
| 8 | Financial and insurance activities |
| 9 | Professional and support activities, real estate |
| 10 | Public administration |
| 11 | Education and health |
| 12 | Other service activities |

## Education

*Population with completed secondary education (per 1000, by sex)* | The education level attained is classified according to the International Standard Classification of Education (ISCED). The expression 'level successfully completed' is associated with obtaining a certificate or a diploma if there is a certification. In cases where there is no certification, successful completion must be associated with full attendance. In this document, we refer to upper and post-secondary non-tertiary education (ISCED 3-4). ISCED level 3: upper secondary education – generally begins at the end of compulsory education; the entrance age is typically 15 or 16 years and entrance qualifications and other minimum entry requirements are usually needed; instruction is often more subject-oriented and typical duration varies from two to five years. ISCED level 4: post-secondary non-tertiary education – straddles the boundary between upper secondary and tertiary education; typical

examples are programmes designed to prepare pupils for studies at level 5 or programmes designed to prepare pupils for direct labour market entry.

*Population with completed tertiary education (per 1000, by sex)* | For this indicator ISCED level 5 and level 6 are considered. ISCED level 5: tertiary education (first stage) – entry normally requires successful completion of level 3 or 4; includes tertiary programmes with academic orientation which are largely theoretically based and occupation orientation which are typically shorter and geared towards entry into the labour market ISCED level 6: tertiary education (second stage) – leads to an advanced research qualification (Ph.D. or doctorate).

## Welfare and services

*Number of hospital beds (per 1,000 residents)* | Hospitals comprise licensed establishments that are primarily engaged in providing medical, diagnostic and treatment services that include physician, nursing and other health services to inpatients and the specialised accommodation services required by inpatients. The tasks of hospitals may vary by country and are usually defined by legal requirements. In some countries, health care facilities need in addition a minimum size (such as a number of beds and medical staff to guarantee 24-hour access) in order to be registered as a hospital.

The definition corresponds to the code HP.1 of the "System of Health accounts" (http://who.int/nha/sha_revision/en/).

*Distance in km to the nearest hospital* / See definition of Number of hospital beds

*Offices of general medical practitioners (per 1,000 residents)* | This item comprises establishments of health practitioners who hold the degree of a doctor of medicine or a corresponding qualification and are primarily engaged in the independent practice of general medicine. Although in some countries "general practice" and "family medicine" may be considered as medical specialisations, these occupations should always be classified here.

The definition corresponds to the code HP.3.1.1 of the "System of Health accounts" (http://who.int/nha/sha_revision/en/).

*Number of long-term residential care facilities (per 1,000 residents)* | The category of Residential long-term care facilities comprises establishments that are primarily engaged in providing residential long-term care that combines nursing, supervisory or other types of care as required by the residents. In these establishments, a significant part of the production process and the care provided is a mix of health and social services, with the health services being largely at the level of nursing care, in combination with personal care services. The medical components of care are, however, much less intensive than those provided in hospitals. The definition of Residential long-term care facilities corresponds to the code HP.2 of the "System of Health accounts" (http://who.int/nha/sha_revision/en/).

*Distance in km to the nearest residential care facility* / See definition Number of long-term residential care facilities (per 1,000 residents)

*Infancy day-care services per children with less than 3 years (per 100)* / This indicator refers to the formal care of young children by people other than their family or in settings outside of the home. 'Early childhood' is usually defined as before the age of normal schooling which in general differs between countries. However, here we consider theoretical starting age 0 and ending age 2. If data are not available exactly for these age groups please specify the ages that you consider.

# ANNEX B – DATA SOURCES for the indicators considered in the report

## ITALY

- *Demography*
  - ✓ Population and Houses Census (Istat)
  - ✓ Survey on Annual Demographic Balance of the resident population (Istat)
  - ✓ Survey on Annual Demographic Balance of the foreign resident population and its structure by gender and citizenship (Istat)
  - ✓ Survey on Resident population by sex, age and marital status (Istat)
  - ✓ Survey on Foreign resident population by sex and age (Istat)
- *Labour Market*
  - ✓ Population and Houses Census (Istat)
  - ✓ Continuous Labour Force Survey (Istat)
- *Welfare and services*
  - ✓ Survey on social actions and services of single and associated municipalities (Istat)
  - ✓ Survey on residential health care facilities (Istat)
  - ✓ Elaboration on Primary care on Ministry of Health data (Istat)
  - ✓ Hospital beds: Ministry of Health - D.G. of Health Information System - Office of Statistics

## AUSTRIA

To be integrated in the REV1 version

## FRANCE

To be integrated in the REV1 version

## GERMANY

To be integrated in the REV1 version

## LIECHTENSTEIN

To be integrated in the REV1 version

## MONACO

To be integrated in the REV1 version

## SLOVENIA

To be integrated in the REV1 version

## SWITZERLAND

To be integrated in the REV1 version

# ANNEX C – METHODOLOGICAL APPENDIX

## Theoretical and methodological issues of the Mazziotta – Pareto index

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### Introduction

Social and economic phenomena, such as development, poverty, quality of life, etc., have been measured, in the past, principally from an unidimensional point of view, i.e., by using only one indicator. The more recent literature tends to consider these phenomena as complex or multidimensional since they are characterized by the combination of different indicators. The measurement of complex phenomena is a difficult and dangerous operation since it requires simplifications that are inherently somewhat arbitrary, is always constrained by limited resources and time, inevitably involves competing and conflicting priorities, and rests on a foundation of values preferences that are typically resolved by pragmatic considerations, disciplinary biases and measurement traditions. Nevertheless, it is possible to consistently combine both the selection of the individual indicators representing the phenomenon and the choice of the 'best' aggregation function in order not to lose much statistical information. The aim of this section is to present a generalized composite index, denoted as MPI (Mazziotta-Pareto Index), suitable in the case where the components are non-substitutable, i.e., they have all the same weight (importance) and a compensation among them is not allowed (Munda and Nardo, 2005).

### Steps towards the synthesis of indicators

In the scientific literature there are many studies, by eminent authors, concerning the use of composite indices in order to measure complex, economic and social, phenomena about geographical areas. The main problems, in this approach, concern the choice of theoretical framework, the availability of the data, the selection of the more representative indicators and their treatment in order to compare and aggregate them.

The steps for constructing a composite index can be summarized as follows:

a) *Defining the phenomenon to be measured.* The definition of the concept should give a clear sense of what is being measured by the composite indicator. It should refer to a theoretical framework, linking various sub-groups and underlying indicators.

b) *Selecting a group of individual indicators*. Ideally, indicators should be selected according to their relevance, analytical soundness, timeliness, accessibility, etc. (OECD, 2008). The selection step is the result of a trade-off between possible redundancies caused by overlapping information and the risk of losing information.

c) *Normalizing the individual indicators.* This step aims to make the indicators comparable. Normalization is required prior to any data aggregation as the indicators in a data set often have different measurement units. Therefore, it is necessary to bring the indicators to the same standard, by transforming them into pure, dimensionless, numbers. Another motivation for the normalization is the fact that some indicators may be positively correlated with the phenomenon to be measured (positive 'polarity'), whereas others may be negatively correlated with it (negative 'polarity'). We want to normalize the indicators so that an increase in the normalized

indicators corresponds to increase in the composite index. There are various methods of normalization, such as ranking, re-scaling, standardization (or *z*-scores) and 'distance' to a reference. Assigning the same 'importance' to each indicator, it is indispensable to apply a transformation criterion that makes the indicators independent from both the unit of measurement and from the variability, e.g., the standardization.

d) *Aggregating the normalized indicators.* It is the combination of all the components to form one or more composite indices (mathematical functions). Different aggregation methods are possible. The most used are additive methods that range from summing up unit ranking in each indicator to aggregating weighted transformations of the original indicators. Multivariate techniques as Principal Component Analysis (Dunteman, 1989) and distance measures as Wroclaw Taxonomic Method (Harbison *et al.*, 1970) are also often used.

For this approach, obviously, there are several problems such as finding data, losing information and researcher arbitrariness for: (i) selection of indicators, (ii) normalization, (iii) aggregation and weighting. In spite of these problems, the advantages are clear and they can be summarized in: (a) unidimensional measurement of the phenomenon; (b) immediate availability; (c) simplification of the geographical data analysis.

Many works and analysis have won over the critics and the scientific community concluded that it is impossible to obtain a 'perfect method' where the results are universally efficient. On the contrary, data and specific targets of the work must, time by time, individuate the 'best method' in terms of robustness, reliability and consistency of solutions.

### The composite Index

Additive methods for constructing composite indices imply requirements and properties which are often not desirable or difficult to meet. For example, they assume a full substitutability among the components of the index: a deficit in one dimension can be compensated by a surplus in another. However, a complete compensability among individual indicators is generally not acceptable and a 'balanced' distribution of the values is required.

The proposed method wants to supply a composite measure of a set of indicators that are considered 'non-substitutable', i.e., all the dimensions of the phenomenon must be 'balanced' (Mazziotta and Pareto, 2011). The MPI is designed in order to satisfy the following properties: (i) normalization of the indicators by a specific criterion that deletes both the unit of measurement and the variability effect (Delvecchio, 1995); (ii) synthesis independent from an 'ideal unit', since a set of 'optimal values' is arbitrary, non-univocal and can vary over time (Aureli Cutillo, 1996); (iii) simplicity of computation; (iv) ease of interpretation.

These properties can be satisfied by the following approach. It is known that distributions of different indicators, measured in different way, can be compared by the transformation in standard scores. Therefore, the individual indicators are converted to a common scale with a mean of 100 and a standard deviation of 10: the transformed values will fall approximately in the range 70-130[32]. In this type of normalization the 'ideal vector' is the set of mean values and it is easy to identify both the units that are above average (values greater than 100) and the units that are below average (values less than 100). Moreover, normalizing by standard scores allows to release the indicators from their variability and to assign them the same weight.

[32] On the basis of Bienaymé-Cebycev theorem, the terms of the distribution within the range 70-130 are at least 89% of total terms.

In such context, a penalty coefficient is introduced that is a function, for each unit, of the indicators' variability in relation to the mean value ('horizontal variability'): this variability is measured by the coefficient of variation. The proposed approach penalizes the score of each unit (the arithmetic mean of the standardized values) with a quantity that is directly proportional to the 'horizontal variability'. The purpose is to favour the units that, mean being equal, have a greater balance among the indicators values (Palazzi, 2004).

The method provides a 'robust' measure and less 'sensitive' to inclusion or exclusion individual indicators (Mazziotta C. *et al.*, 2010).

The steps for computing MPI are the following.

1) Normalization

Let $\mathbf{X}=\{x_{ij}\}$ be the matrix with $n$ rows (statistical units) and $m$ columns (individual indicators) and let $\mathrm{M}_{x_j}$ and $\mathrm{S}_{x_j}$ denote the mean and the standard deviation of the $j$-th indicator:

$$\mathrm{M}_{x_j} = \frac{\sum_{i=1}^{n} x_{ij}}{n}; \qquad \mathrm{S}_{x_j} = \sqrt{\frac{\sum_{i=1}^{n} (x_{ij} - \mathrm{M}_{x_j})^2}{n}}.$$

The standardized matrix $\mathbf{Z}=\{z_{ij}\}$ is defined as follows:

$$z_{ij} = 100 \pm \frac{(x_{ij} - \mathrm{M}_{x_j})}{\mathrm{S}_{x_j}} 10 \qquad (1)$$

where the sign ± is the 'polarity' of the $j$-th indicator, i.e., the sign of the relation between the $j$-th indicator and the phenomenon to be measured (+ if the individual indicator represents a dimension considered positive and  if it represents a dimension considered negative).

2) Aggregation

Let $\mathrm{cv}_i$ be the coefficient of variation for the $i$-th unit:

$$\mathrm{cv}_i = \frac{\mathrm{S}_{z_i}}{\mathrm{M}_{z_i}}$$

where:

$$\mathrm{M}_{z_i} = \frac{\sum_{j=1}^{m} z_{ij}}{m}; \qquad \mathrm{S}_{z_i} = \sqrt{\frac{\sum_{j=1}^{m} (z_{ij} - \mathrm{M}_{z_i})^2}{m}}.$$

Then, the generalized form[33] of MPI is given by:

$$\mathrm{MPI}_i^{+/-} = \mathrm{M}_{z_i}(1 \pm \mathrm{cv}_i^{\,2}) = \mathrm{M}_{z_i} \pm \mathrm{S}_{z_i}\mathrm{cv}_i \qquad (2)$$

where the product $\mathrm{S}_{z_i}\mathrm{cv}_i$ is the 'penalty' and the sign ± depends on the kind of phenomenon to be measured.

If the composite index is 'increasing' or 'positive', i.e., increasing values of the index correspond to positive variations of the phenomenon (e.g., the socio-economic development), then $\mathrm{MPI}^-$ is used. Vice versa, if the composite index is 'decreasing' or 'negative', i.e., increasing values of the index correspond to negative variations of the phenomenon (e.g., the poverty), then $\mathrm{MPI}^+$ is used.

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[33] It is a generalized form since it includes 'two indices in one'.

# Principal component analysis and cluster analysis: some methodological notes

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The statistical methodology offers a wide range of methods for synthesizing the values of different indicators, observed on a certain number of statistical units. An important support can be provided by the methods that allow classifying the units, in order to be able to easily describe them, with reference to the specific characterization that at the same time is shared by some units and separates them from the others.

From a strictly methodological point of view, the Principal component analysis and the Cluster analysis are two statistical methods, respectively for reducing the number of a certain set of variables - the values of which has been observed on a certain number of statistical units - and for classifying in groups some statistical units, on the basis of the values assumed on each unit by a certain number of variables. Both methods are applicable to and indicated for quantitative variables (interval scale).

Principal component analysis is often performed before a regression, to avoid using correlated variables, or before clustering the data, to have a better overview of the variables.

## Principal component analysis

Principal component analysis (PCA) is a multivariate statistical technique for quantitative variables that uses an orthogonal transformation to convert a set of observations of possibly correlated variables into a set of values of linearly uncorrelated variables called principal components.

Since the observed variables have been standardized to have a variance of one, each of them contributes one unit of variance to the "total variance" in the data set. Therefore, the total variance will always be equal to the number of observed variables being analyzed, and the components that are extracted in the analysis will partition this variance.

The number of principal components (PC) is less than or equal to the number of original variables. This transformation implies that the first principal component has the largest possible variance (that is, accounts for as much of the variability in the data as possible), and each succeeding component has the highest variance possible under the constraint that it is orthogonal to (i.e., uncorrelated with) the preceding components. Principal components are orthogonal because they are the eigenvectors of the symmetric covariance matrix. PCA is sensitive to the relative scaling of the original variables.

The method is mostly used as a tool in exploratory data analysis and for making predictive models. PCA can be done by eigenvalue decomposition of a data covariance (or correlation) matrix or singular value decomposition of a data matrix, usually after mean centering (and normalizing or using Z-scores) the data matrix for each attribute (Abdi. H., & Williams, L.J., 2010). The results of a PCA are usually discussed in terms of component scores, sometimes called factor scores (the transformed variable values corresponding to a particular data point), and loadings (the weight by which each standardized original variable should be multiplied to get the component score) (Shaw P.J.A., 2003).

PCA is the simplest of the true eigenvector-based multivariate analyses. Often, its operation can be thought of as revealing the internal structure of the data in a way that best explains the variance in the data. If a multivariate dataset is visualised as a set of coordinates in a high-dimensional data space (1 axis per variable), PCA can supply the user with a lower-dimensional picture, a projection or "shadow" of this object when viewed from its most informative viewpoint. This is done by using only the first few principal components so that the dimensionality of the transformed data is reduced. A single scatter plot summarizing all the

information provided by the method can be built in order to allow to look at the data on a two-dimensional map, and to identify trends.

Variables are visualized on a graphical display also called ''the correlation circle''. The correlation circle is useful in interpreting the meaning of the axes. In this graphical display, each variable is shown as a vector, which signals the combined strength of the relationships between the variable and two PCs (vector length) and whether these relationships are positive or negative (vector direction). The angle between two vectors shows the degree of correlation between two measured variables. A right angle indicates that two variables are completely uncorrelated; zero or 180 degrees between two variables indicates complete positive or negative correlation.

### Cluster analysis

Cluster analysis is a multivariate method which aims to classify a sample of subjects (or objects) on the basis of a set of measured variables into a number of different groups such that similar subjects are placed in the same group.

Cluster analysis is able to produce a synthetic picture of the variables involved, classifying the individuals according to the maximum homogeneity found within each group . Often for its characteristics of synthesis, a cluster analysis is more immediate than a PCA, though very often the two approaches are combined.

There are a number of different methods that can be used to carry out a cluster analysis. These analyses can be divided into two major groups based on aggregation strategy chosen: hierarchical and non-hierarchical. Often, however, the choice falls on a mixed strategy of classification that limits the effects of the constraints imposed by both the procedures mentioned above. In this case, the set of elements to be classified is first aggregated according to a strategy not hierarchical (to mobile centers) producing, so, a partition with a large number of classes which, in turn, become the new set of elements to be classified. This time, however, the aggregation strategy is hierarchical. This second step can only enhance the classes already obtained previously.

In the hierarchical procedure the Ward's method has been applied. According to this method all possible pairs of clusters are combined and the sum of the squared distances within each cluster is calculated. This is then summed over all clusters. The combination that gives the lowest sum of squares is chosen. This method tends to produce clusters of approximately equal size, which is not always desirable. It is also quite sensitive to outliers. The Ward's method is one of the most popular methods along with the average linkage method.

The method of hierarchical cluster analysis is best explained by describing the algorithm, or set of instructions, which creates the dendrogram results. The horizontal axis of the dendrogram represents the distance or dissimilarity between clusters. The vertical axis represents the objects and clusters. Each joining of two clusters is represented on the graph by the splitting of a horizontal line into two horizontal lines. The horizontal position of the split, shown by the short vertical bar, gives the distance between the two clusters.

The final grouping of clusters (also called the final partition) is the grouping of clusters which will identify groups whose observations or variables present common characteristics. The decision about final grouping is also called cutting the dendrogram and consists in drawing a line across the dendrogram to specify the final grouping. The following steps can help you determine where to cut the dendrogram. The step where the values change suddenly might identify a good point for cutting the dendrogram. The final clusters have to show the most similar characteristics inside the same group and to be as different as possible from the other clusters.

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# ANNEX D – MAPS OF GERMANY AND SWITZERLAND ON LABOUR MARKET AND EDUCATION, data at NUTS 3 level

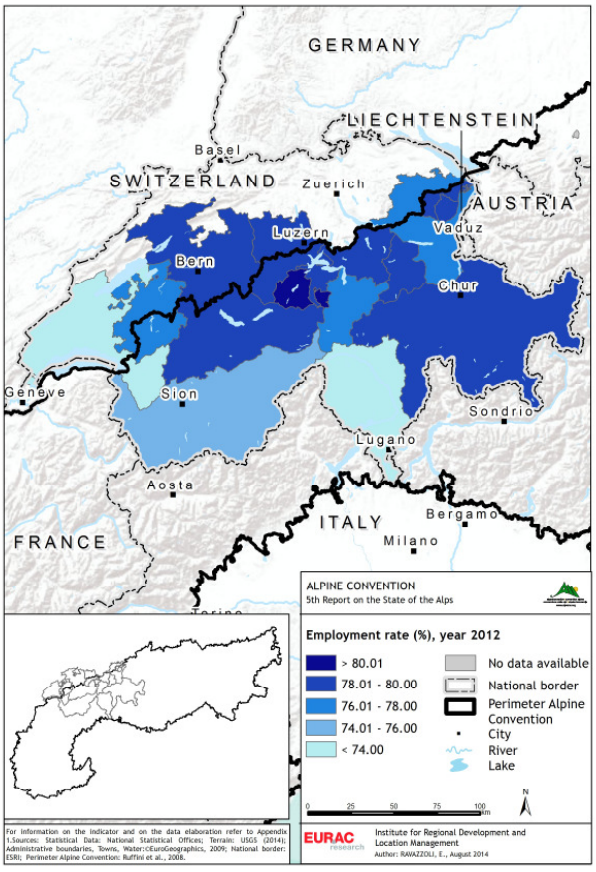


Figure E1: Employment rate in Switzerland (per 100)

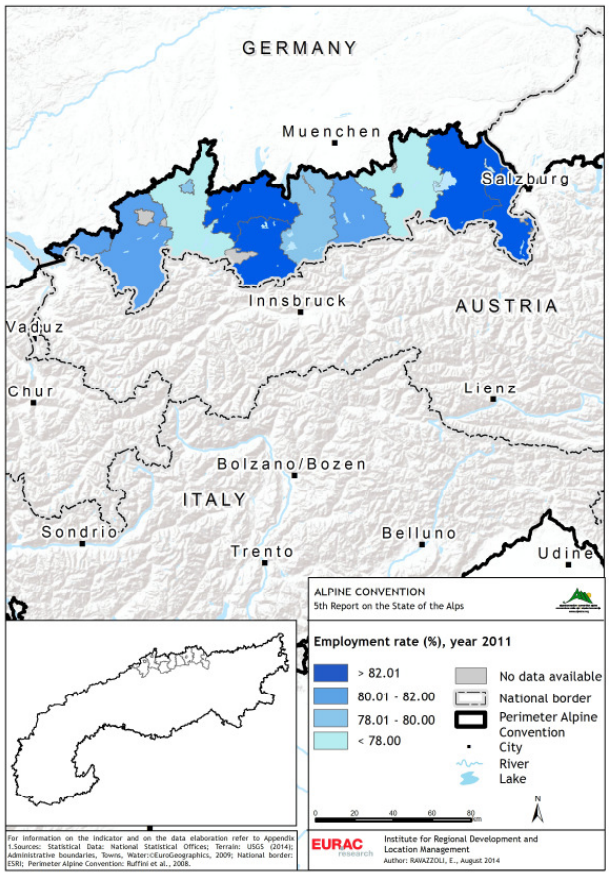


Figure E2: Employment rate in Germany (per 100)

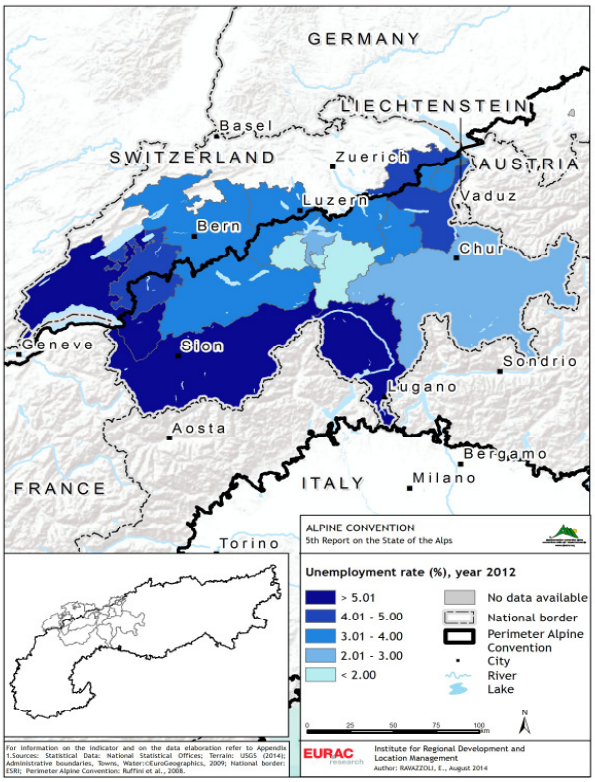


Figure E3: Unemployment rate in Switzerland (per 100)

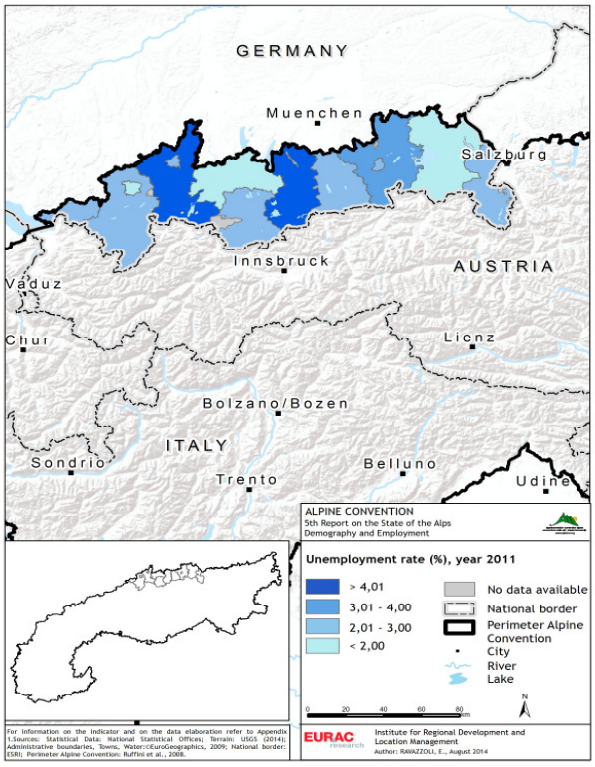


Figure E4: Unemployment rate in Germany (per 100)

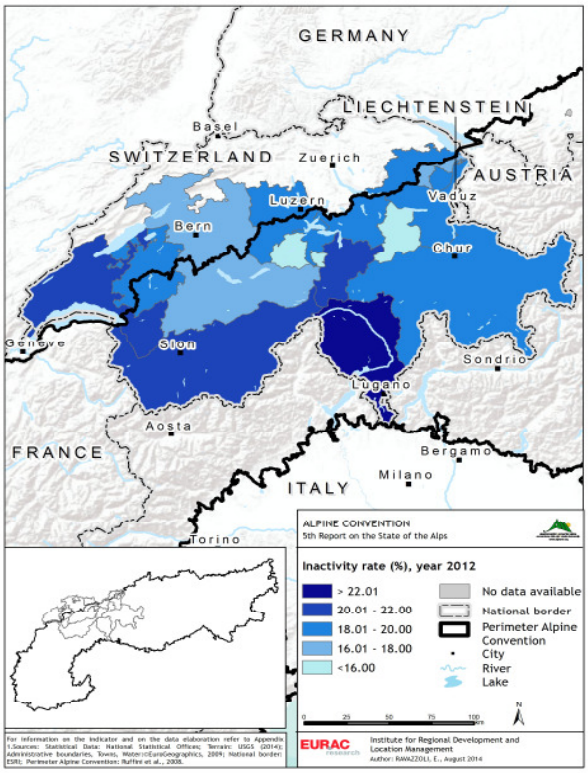


Figure E5: Inactivity rate in Switzerland (per 100)

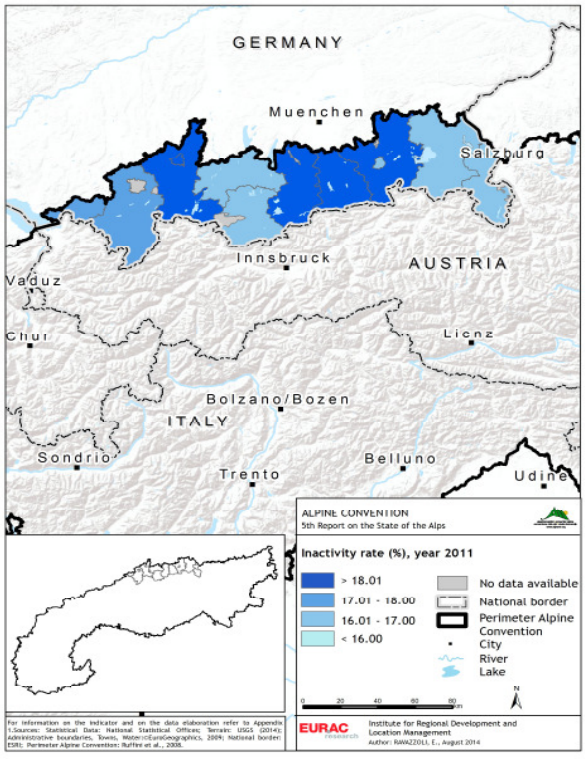


Figure E6: Inactivity rate in Germany (per 100)

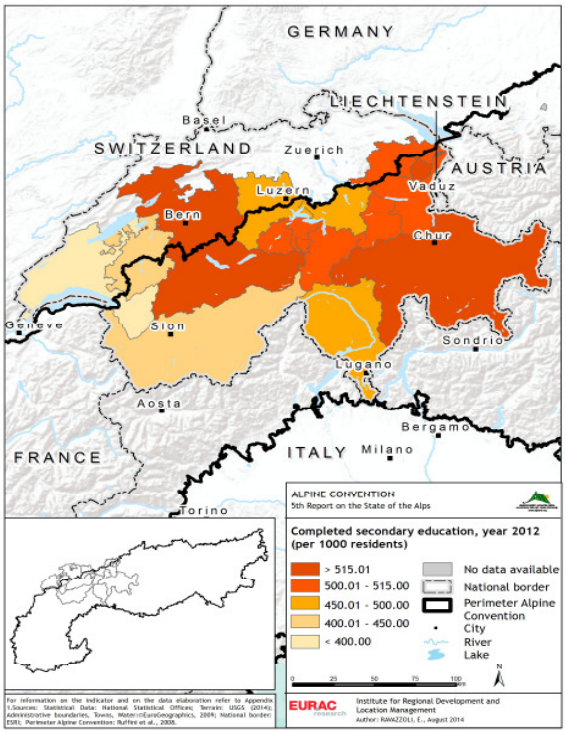


Figure E7: Completed secondary education in Switzerland

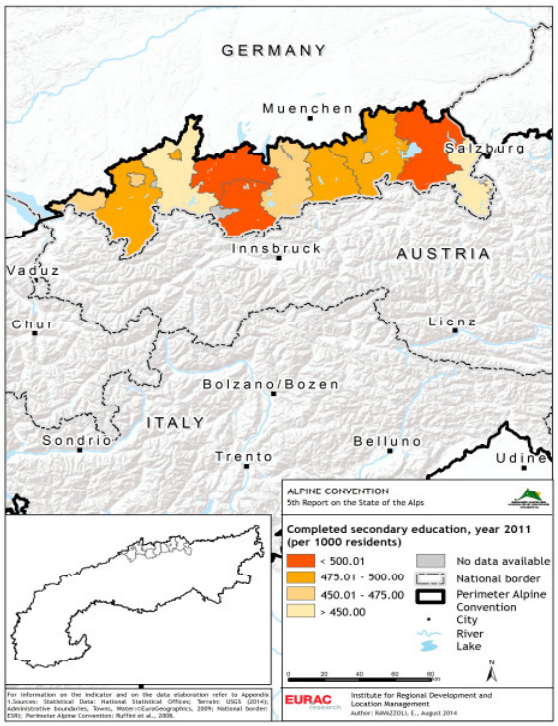


Figure E8: Completed secondary education in Germany

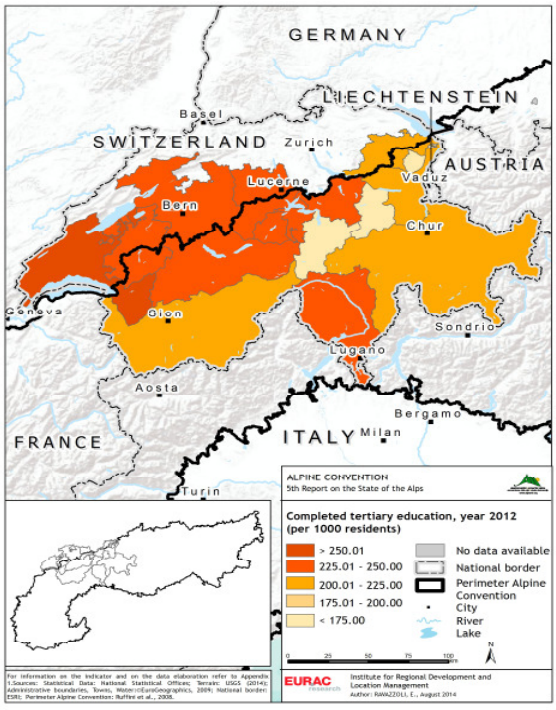


Figure E9: Completed tertiary education in Switzerland

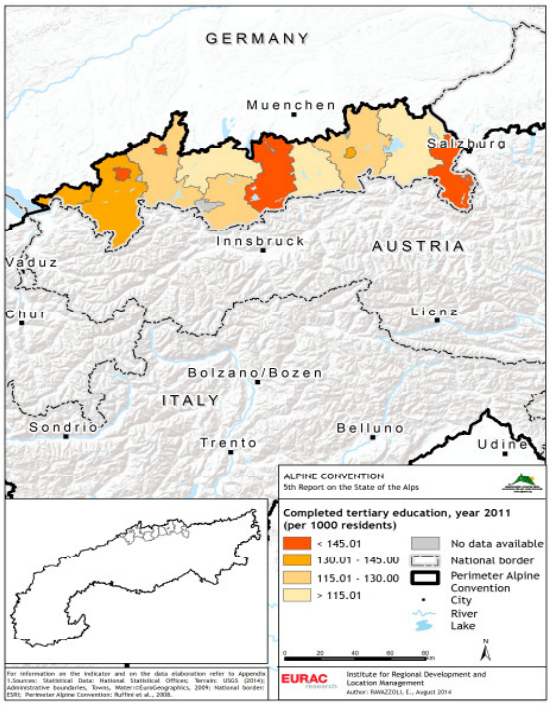


Figure E10: Completed tertiary education in Germany

# ANNEX E – MAP OF THE ALPINE CONVENTION

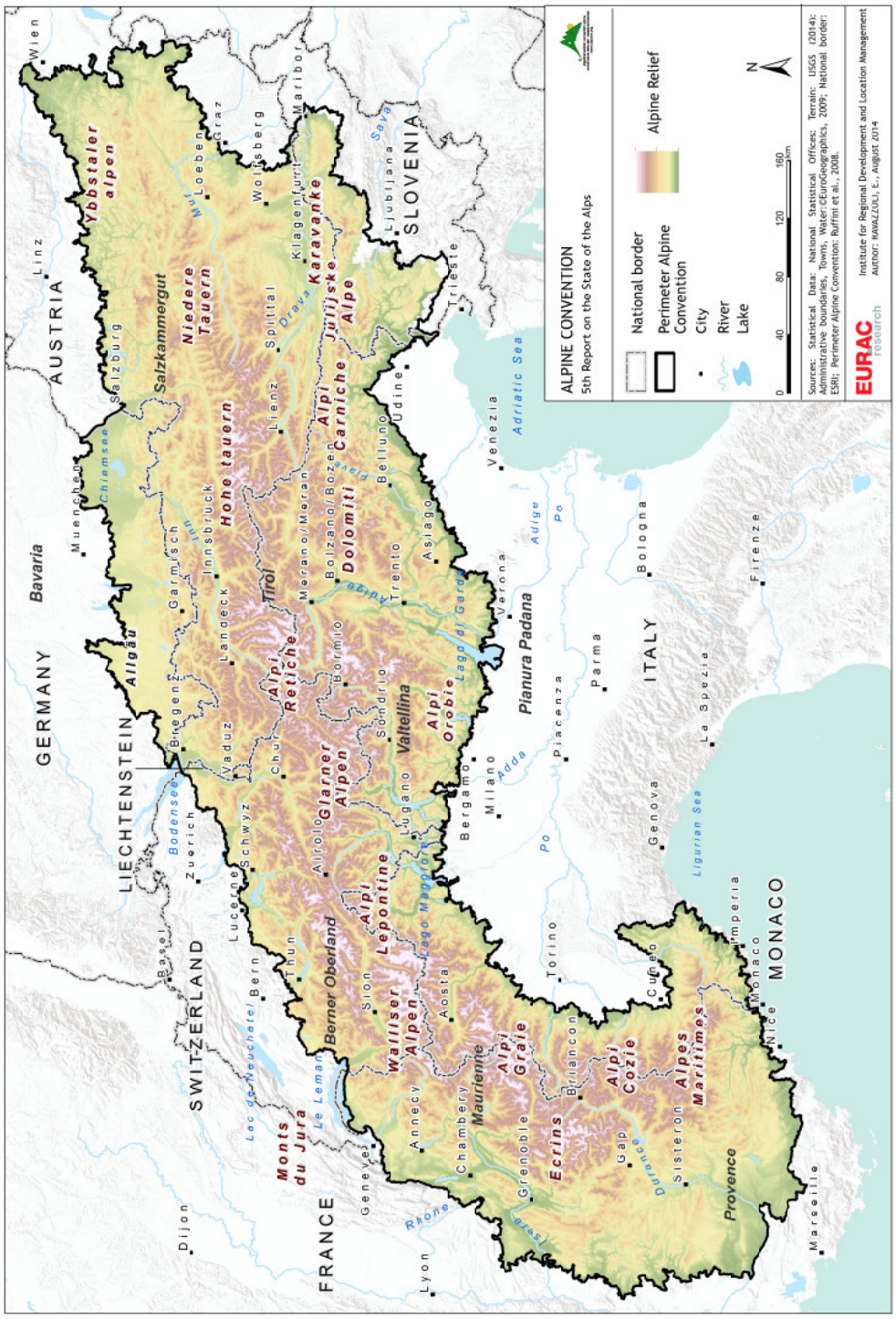


Figure 199: Geography of the Alpine Convention.

# DEMOGRAPHIC CHANGES IN THE ALPS

## REPORT ON THE STATE OF THE ALPS

## ALPINE CONVENTION

## Alpine Signals – Special Edition 5

*Synthesis report*

THE ALPINE CONVENTION IS THE FIRST INTERNATIONAL TREATY FOR THE PROTECTION AND PROMOTION OF THE SUSTAINABLE DEVELOPMENT OF A CROSS-BORDER MOUNTAINOUS REGION

Italian presidency 2013-2014
alpine convention

MINISTERO DELL'AMBIENTE
E DELLA TUTELA DEL TERRITORIO E DEL MARE

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# 1. Introduction

## 1.1 The Alpine Convention and its instruments and priorities

**The Alpine Convention** is an international treaty between the Alpine countries (Austria, France, Germany, Italy, Liechtenstein, Monaco, Slovenia and Switzerland) and the EU, aimed at promoting sustainable development in the Alpine area and at protecting the needs of the people living within it. It embraces the environmental, social, economic and cultural dimensions.

**The Alps,** with their biodiversity capital, water and wood reserves, are the natural, cultural, living and economic environment for nearly 14 million people and an attractive tourist destination for approximately 120 million guests every year.

As stated in the Declaration on Population and Culture of the Alpine Convention, socio-economic and cultural aspects are considered by the Alpine States to be central for the implementation of an integrated policy ensuring the protection and sustainable development of the Alps. The Alpine States therefore committed themselves to preserve and promote cultural diversity in the Alps as well as to focus on the needs, wishes and opinions of the people who live in the Alpine area. This Ministerial Declaration considers the Alps as a living and economic territory, in which the inhabitants should benefit of a wide access to services such as transport system, health and education. Alpine population, furthermore, should have the opportunity to work in the Alpine territory, hopefully strengthening local value chains aiming at creating social and environmental-friendly regional development.

The establishment of the politic, economic and infrastructural conditions that allow the Alpine territory to be competitive, attractive and sustainable in the XXI century need to start from an exhaustive picture of the Alpine population and an analysis of its characteristics and movements.

This is why "demographic change" is one of the five thematic pillars of the Multiannual Work Programme 2010-2016 of the Alpine Convention.

Therefore, an ad hoc expert group was established by the Alpine Ministers at the XII Conference of the Parties in 2012 with a mandate to prepare the fifth Report on the State of the Alps focusing on demographic changes and their drivers.

The expert group continued the work started by the Working Group Demography and Employment set up by the X Alpine Conference in 2009, which prepared a first overview on demographic framework of the Alps. This overview served as the starting point for the work of the ad hoc expert group and provided a basis for more specific research studies and activities. For the preparation of the Fifth Report on the State of the Alps, good practices dealing with demographic changes and their impacts on labour market and service provision were also collected in order to provide examples in these fields to policy-makers.

The ad hoc expert working group which drafted this report includes representatives from the Contracting Parties and Observers, experts in these fields of science, and other stakeholders.

## 1.2 Aims of the RSA V report

The Alps represent an example of human-shaped environment, whose characteristics are worldwide famous and appreciated. Their landscape was shaped by centuries of diffused human presence and the related social, cultural and economic production. In the past, each alpine valley with acceptable climatic conditions was inhabited and taken care of, with the aim of keeping the living and working environment safe and productive. Nevertheless, in the XX century, wide sectors of the Alps experienced a severe depopulation trend, which resulted in an increased difficulty in providing basic services to the local population, thus posing at risk their living standards. A persistent exacerbation of this negative trend, if prolonged in time, can trigger negative cycles not only for the resident population, but also for tourism and hydro-geological safety.

The final report addresses the following questions: how is it possible, to deal with the demographic phenomena in the Alps? How is it possible to influence the demographic changes in order to keep the Alpine areas inhabited?

The first step to answer in the practice to these questions is the creation of a common framework of knowledge, with comparable data and common considerations, including a set of good practices dealing with demographic changes, their causes and their consequences. In this sense, the main objective of the ad hoc expert group on demographic change (and its drivers) established by the Alpine Convention was to prepare the fifth Report on the State of the Alps, by the XIII Alpine Conference (the 13th Conference of the Parties, held in Turin in 2014). The current document is a synthesis of the extended version of the RSA V report, whose main aims are to:

- cast light on and analyse the changes in the population dimension, distribution, structure;
- observe labour market dynamics and their connections with demographic changes;
- consider the roles of different levels of education and training and their effects on society;
- recognise the strengths and weaknesses in the various areas and chart them;
- focus on some thematic analyses that cover peculiar aspects observed in particular areas (such as the urbanization in the Alpine area or "new mountain inhabitants");
- collect good practices, selected on the basis of specific criteria;
- provide guidance to policy-makers regarding the use of best practices and their transferability.

In order to focus on all the topics here above listed, the RSA V extended report is structured in four main chapters:

- Chapter 2 - Demographic overview. This chapter focuses on the analysis of the status quo of the population in the alpine area, on the structure of this population (mainly according to gender, age and origin of the population) and on the dynamics that affected population growth or decrease in the last 10 years.
- Chapter 3 – Employment and education. This chapter aims at describing the structure of the alpine labour market through an analysis of the activity, employment and unemployment rates. Moreover, the chapter includes a description of the level of education of the alpine population.
- Chapter 4 - Some applications on demographic and labour market data. In this chapter two statistical methods have been applied.

- Chapter 5 – Population and services. This chapter describes the status quo of specific welfare services that can foster the maintenance of the population on the territory. In particular, the chapter describes the status of health care facilities and infancy day care services at alpine level.

Moreover, the final extended RSA V report contains a series of in – depth thematic analyses on specific themes.

## 1.3 The dynamism of demography and labour market in the Alpine area

Actually it doesn't exist "The Alps" as a whole: with respect to demography and labour market situation, as well as for many other characteristics, the alpine territory is a kaleidoscope of much differentiated realities.

To provide an easy-to understand overview of this complex and colourful picture it can be useful to apply methods and tools such as synthetic indexes, which are able to summarize in a single average value the multiplicity of characteristic values of each different micro territorial area. The MPI is a composite index for synthesizing the values of several indicators measured on a certain number of statistical units. On the basis of the index values it is possible to draw a unique classification of the units.

The score given to each unit is an average of the standardized values for the different indicators. Moreover, the MPI index includes in its formula a penalization function introduced to take into account the presence of "horizontal" variability, i.e. the variability among those values.

To measure the demographic and labour market's dynamism in the Alps the MPI composite index has been applied to a set of eight demographic and labour market's indicators, calculated on each one of the 4,700 Alpine municipalities[1] included in the analysis. The chosen indicators are: Foreign resident population (per 1,000 residents), Population density, Crude birth rate (per 1000 residents), Population growth rate (per 100 residents), Working-age total resident population (per 100 residents), Employment rate (per 100), Unemployment rate (per 100), Variation in employment rate. The subset of indicators included, derived from the wider set of the available indicators, has been defined trying to keep the more significant and non-replaceable ones, preserving also a certain balance among the two main investigated dimensions (demography and labour market). All the indicators are static and they are calculated on the last data available (usually year 2012), except for the population growth and the variation of the employment rate, which are dynamic and refer to the last ten years of availability of data. The main results of the study are shown in the figure below. Municipalities with high values of MPI are the most dynamic. Among these areas there are: Alto Adige/Sudtirol, Valle d'Aosta, the valleys floor of Adige, the Garda area (in Italy), High Savoie and High Maurienne Valley (in France), Inn and Salzach Valleys, a further part of Tyrol, swathes of Vorarlberg, municipalities in the area of Vienna, Graz and Klagenfurt (in Austria). The highest index values actually were registered in the municipalities of Saint-Christol (FR, 118,1), Sivergues (FR, 116,6), Mäder (AT, 114,1), Val-de-Chalvagne (FR, 112,5), Hall in Tirol (AT, 112,0), Lavant (AT, 111,6), Ampass (AT, 111,3), Hard (AT, 111,2), Altach (AT, 111,0) and Zirl (110,8).

[1] Not including German, Swiss and Lichtenstein Alps, since no data on the specific topics of education and labour market were available at LAU 2 level for these countries.

Among less dynamic municipalities (with lower values of MPI) there are: Maritime Alps (in France), municipalities along the border between Tyrol and Vorarlberg, in Hohe and Niedere Tauern as well as in the Niederösterreichisch-Steirische Kalkalpen (in Austria), the municipalities on the border between Austria and Slovenia, between Italy and Slovenia and in the western area of Turin. In the last positions of the ranking for decreasing values of MPI index we find Gars (FR, 77,1), La Bâtie-des-Fonds (FR, 75,6), Aucelon (FR, 75,6), Chanousse (FR, 75,5), Oulles (FR, 74,8), Blieux (FR, 73,7), Saint-Léger (FR, 69,15), Montferrand-la-Fare (FR, 67,34), Lesches-en-Diois (FR, 64,3), Vérignon (FR, 63,1).

In the following map the municipal values of the MPI have been represented. In the map stronger colour intensities correspond to higher MPI's values.

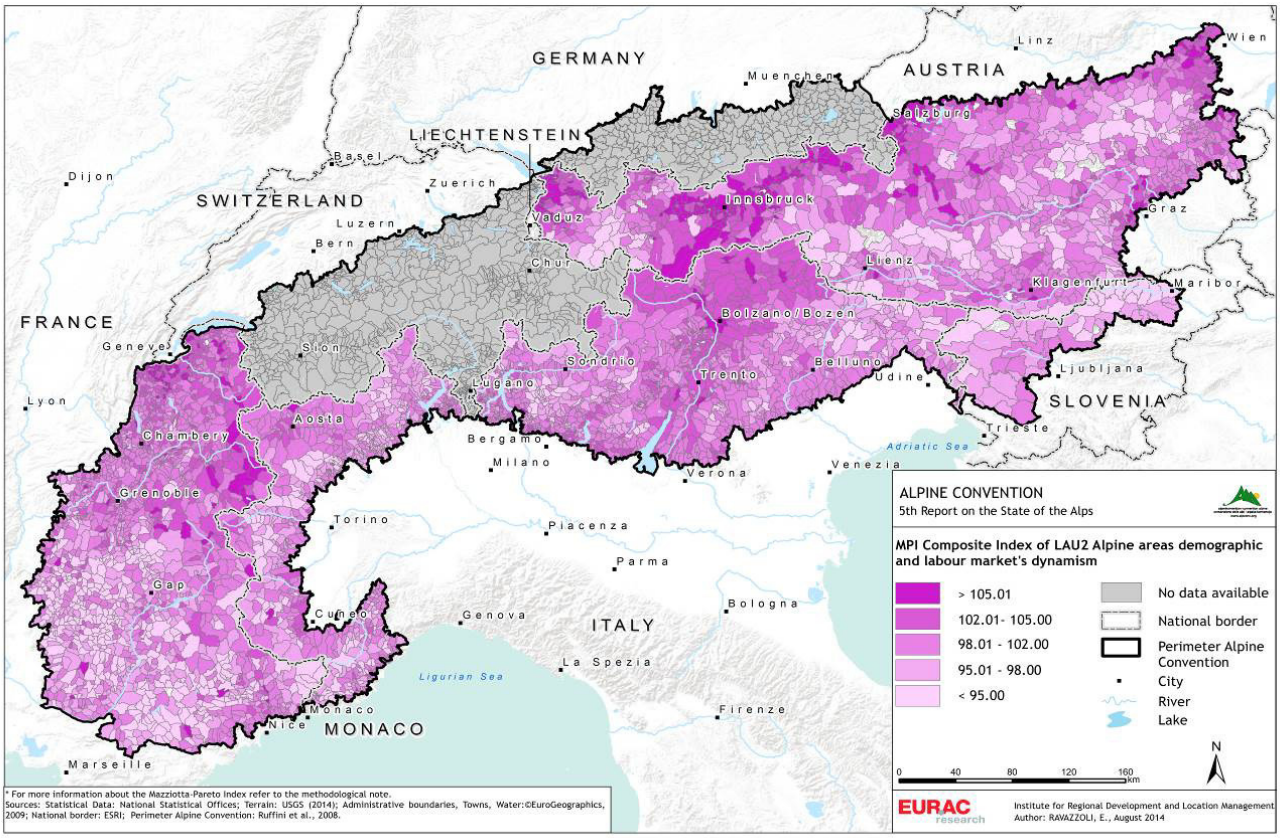


**Figure 1:** MPI Composite Index Values of LAU-2 Alpine areas demographic and labour market's dynamism.

## 1.4 Classification of the Alpine municipalities by their demography and labour market status

Considering the set of the most relevant demographic, economic and social variables, in order to deepen the analysis and better classify the heterogeneous situation of the Alps with respect to the specific configuration of values for each territorial unit, a principal components analysis associated with a cluster analysis has been applied. The analysis is based on nine variables. For the demographic analysis we have considered: population density, population growth (in ten years), natural balance, elderly population (per 100), foreign residents (per 1,000 residents). Socio-economic variables included are: employment rate, variation in employment rate (in ten years), unemployment rate and population with tertiary education.

Finally, a map of patterns and trends in the about 4,700 municipalities considered (not including German, Swiss and Liechtenstein Alps, due to the fact that LAU 2 data for education and labour market were not available) has been drawn.

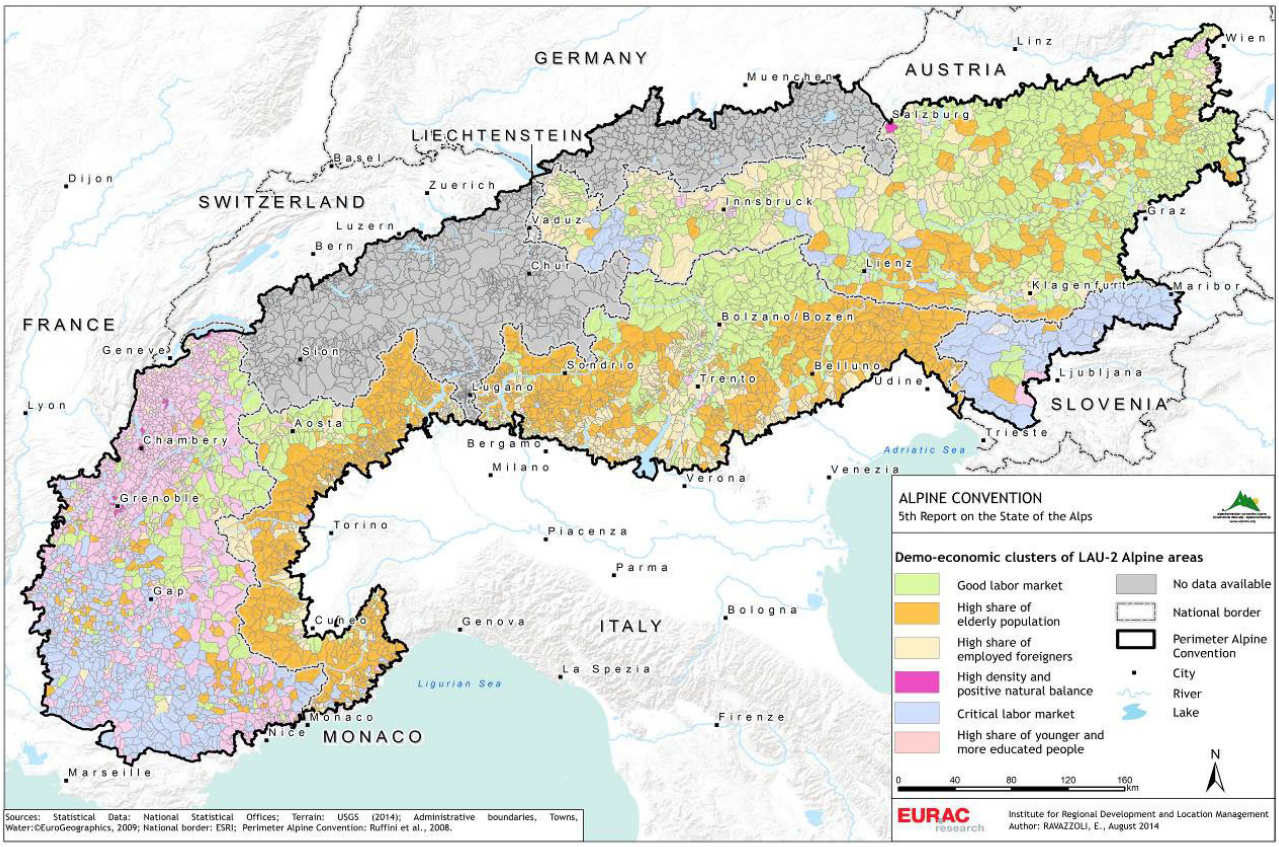


**Figure 2**: Demo-economic clusters of LAU-2 Alpine areas.

The first three axes deriving from the application of the principal components analysis explain more than 70 percent of total variability.

Thus, focusing the attention on groups of municipalities it is possible to draw the geography of the Alpine area. By the results of the cluster analysis, six groups of municipalities were singled out presenting peculiar characteristics when compared to the general mean[2]. In the map, the six groups of LAU-2 units have been represented with different colours.

The first group of municipalities can be defined as the group with a good labour market (1,258 municipalities). It is characterized, with respect to the general average, by a higher level of employment rate and a variation in this indicator (observed in a ten year period) clearly positive; the unemployment rate shows lower values to complete the framework of a positive overall situation. On

[2] In this respect, it must be underlined that the characterization of each group of municipalities that comes out from the application of multivariate analysis methods such as Principal component analysis followed by Cluster analysis, in order to give a synthetic overview of the different municipalities tends to highlight only the main characteristics of municipalities. As a matter of fact, talking about the characterization of each group in terms of the original indicators, the approach only take into consideration the most relevant characteristics shared by the units contained in a group. Furthermore, the cluster description often is based only on the subset of these characteristics that mainly differentiate the specific group from other groups. This doesn't necessarily mean that the single municipality in each group is characterized only by the variables characterizing the group. This is true both for "positive" characteristics (such as, for example, occupation) and for "negative" (such as, for example, depopulation).

a strictly demographic point of view, population density, share of foreigners, of elderly people and of people with a high level of education show lower values respect to the general average. The population growth observed in ten year period is slightly positive respect to a general average more positive. Main areas that belong to this group are: a large part of Alpine Austrian municipalities, Alto Adige/Sudtirol, Valle d'Aosta, touristic area in Savoie (Maurienne Valley), the area of Mont Blanc, Arve Valley (in France) and the hills in the west of Ljubljana.

The second group can be defined as the group with a high share of elderly population (1,117 municipalities). In fact, it is characterized in particular by the highest value registered by this indicator respect to the general average. In addition, lower values of employment rate and of share of people with a high level of education are observed. The population growth in ten year is negative and the natural balance is strongly negative; the high share of elderly population play presumably an important role in defining the demographic situation observed in this group. Main areas that belong to this group are: a large part of Italian Alps (Liguria, Piemonte, Veneto, the South-East and Western part of Trentino, Friuli-Venezia Giulia and the provinces of Como, Lecco, Sondrio and Bergarmo), Niedere Tauern and Niederösterreichisch-Steirische Kalkalpen (in Austria), Idrija in Slovenia.

The third group high share of foreigners (758 municipalities) is characterized in particular by the higher value registered by the share of foreigners and a higher level of density. The share of people with a high level of education is smaller and the value of the employment rate is similar to the general one. Main areas that belong to this group are: large parts of Trentino, different peri-alpine municipalities – most of the municipalities belonging to this category are touristic resorts or peri-alpine municipalities not far from the main towns of the Po plain and characterised by high values of foreign population - and High Susa Valley (in Italy), parts of Vorarlberg, the upper part of secondary valleys in Tyrol, Salzburg and central Carinthia (in Austria).

The fourth group high density and positive natural balance is quite small respect to the other groups (27 municipalities). The level of population density is really high and a balance clearly positive is observed. The proportions of foreigners and of people with tertiary education are quite high. As negative aspect, the unemployment rate shows values higher respect to the general average. Main areas that belong to this group are: Salzburg area (in Austria), Grenoble, Annecy, Aix Les Bains (in France).

The fifth group critical labour market (530 municipalities) is characterized in particular by a high unemployment rate, a low employment rate and a small variation in this last indicator (in ten years). The proportion of elderly people and of population with tertiary education is quite high. The population growth in ten year period is more positive with respect to the general one. Main areas that belong to this group are: a large part of Slovenian Alps, border area of Tyrol and Vorarlberg and parts of Hohe Tauern Valley (in Austria), several municipalities of Maritime Alps (in France). For some of these areas the critical labour market situation could be due to the difficulties in accessibility.

The last group High share of younger and more educated people (1,008 municipalities) is characterized by a high share of people with tertiary education whereas the values of the proportions of elderly and of foreign population are lower respect to the general average. The population growth is strongly positive and the natural balance too. The employment rate is higher and the variation observed for this indicator is positive. Both on a demographic and labour market point of view this group seems to be quite dynamic. Main areas that belong to this group are: some municipalities of

Maritime Alps (in France), the areas near Vienna and Innsbruck, municipalities in the south of Ljubljana, the north-eastern French Alps.

The cluster analysis confirms that, at the micro territorial level, in the area persist huge differences in conditions and dynamics both with reference to the situation of the population and the demography, and with reference to the labour market. These differences in some cases go across the national boundaries. In others, however, they are rather clearly defined and delimited by national or even regional boundaries, highlighting the importance of any policy in guiding certain phenomena.

# 2. Demographic overview

The demographic changes which occurred and still are occurring in the whole Alpine Countries are also reflected in the territory of Alpine municipalities, but unevenly and with different signs depending on the different territories. All in all, the resident population as a whole has increased with a mostly increased incidence of the foreign population (often in combination with negative natural changes). In some areas, however, these processes were not enough to slow down the aging of the population and the declining of the population of working age. In other areas, instead a high birth rate and the inflows of foreigners may be the basis of the relatively young population that resides therein. All these aspects have resulted in a complex mosaic, where certainly the main axes of communication and the attractiveness of the tourist sites have constituted a factor in the attraction and acceleration of the phenomena.

## 2.1 Resident population and population density

As of 2013, the Alps were inhabited by 14,512,528 people on a 190,854.6 km² territory, with an average population density of 76.04 inhabitants per km² (Table below). This makes the Alps one of the less populated areas in central Europe (although Countries such as Greece and Ireland have similar population densities) but also one of the most dense mountain areas worldwide (Alpine Convention, 2007). The countries that most contribute in terms of percentage to the overall alpine population are Italy (30.1%) and Austria (22.9%). France contributes to the alpine population up to 18.5%, followed by Switzerland (13.3%), Germany (10.2%) and Slovenia (4.6%). Monaco and Liechtenstein, being also in terms of surface by far the smaller alpine countries, contribute with percentages below 1%.

| | *Alpine inhabitants* | *Surface (km²) of the Alpine area* | *Alpine pop. density* | *National population density* |
|---|---|---|---|---|
| Austria | 3,320,719 | 54,759 | 60.6 | 102.3 |
| France | 2,683,801 | 40,801 | 65.8 | 103.4 |
| Germany | 1,476,519 | 11,160 | 132.3 | 225,5.4 |
| Italy | 4,364,538 | 51,995 | 83.9 | 201.8 |
| Liechtenstein | 36,838 | 160 | 229.6 | 230.2 |
| Monaco | 36,950 | 2 | 16,010 | 18,475 |
| Slovenia | 663,739 | 6,766.6 | 98.1 | 101.6 |
| Switzerland | 1,929,424 | 25,211 | 76.5 | 201 |
| **Alpine region** | **14,512,528** | **190,854.6** | **76.04** | - |

**Table 1:** Population, surface, and population density in the Alpine region, January 1st 2013. Data at January 1st, 2013, excepted for France (census data, year 2010) and the Principality of Monaco (year 2000).

The population is spread on territories that have different size; therefore, in order to better assess the human pressure on a territory, the population density (namely the ratio between the population living in a territory and the surface in terms of km² of the territory) can be used. While, on the one hand, a high level of population density can be associated to an higher pressure on the environment and therefore a possibility of degradation of the environment itself, on the other hand, in the alpine area,

where orographic constrains limit the presence of permanent population in a wide part of the territory, a certain level of population density may be connected to the persistence of the population in the territory and therefore can represent a guarantee of the continuity of its safeguard as well as the safeguard of its cultural heritage.

The analysis of population density in the Alpine territory by LAU-2 level reveals that higher population concentrations in relation to the municipal surface can be mainly found in the peri-Alpine areas (e.g. in the flat areas of the Italian foothills, in the French Côte d'Azur and Haute-Savoie, along the Swiss Voralpen, in Oberbayern, in the surroundings of Vienna and in the Slovenian valleys host of the major transport corridors) and in the wider valley bottoms such as the ones of the rivers Adige, Rhone (Valais), Alpenrhein, Adda (lower Valtellina), Inn, Drava and upper Sava. A particular case is represented by the Principality of Monaco, characterised by the highest population density in the world. In any case, from a demographic point of view, Monaco always represents a situation sui generis if compared with the rest of the Alps.

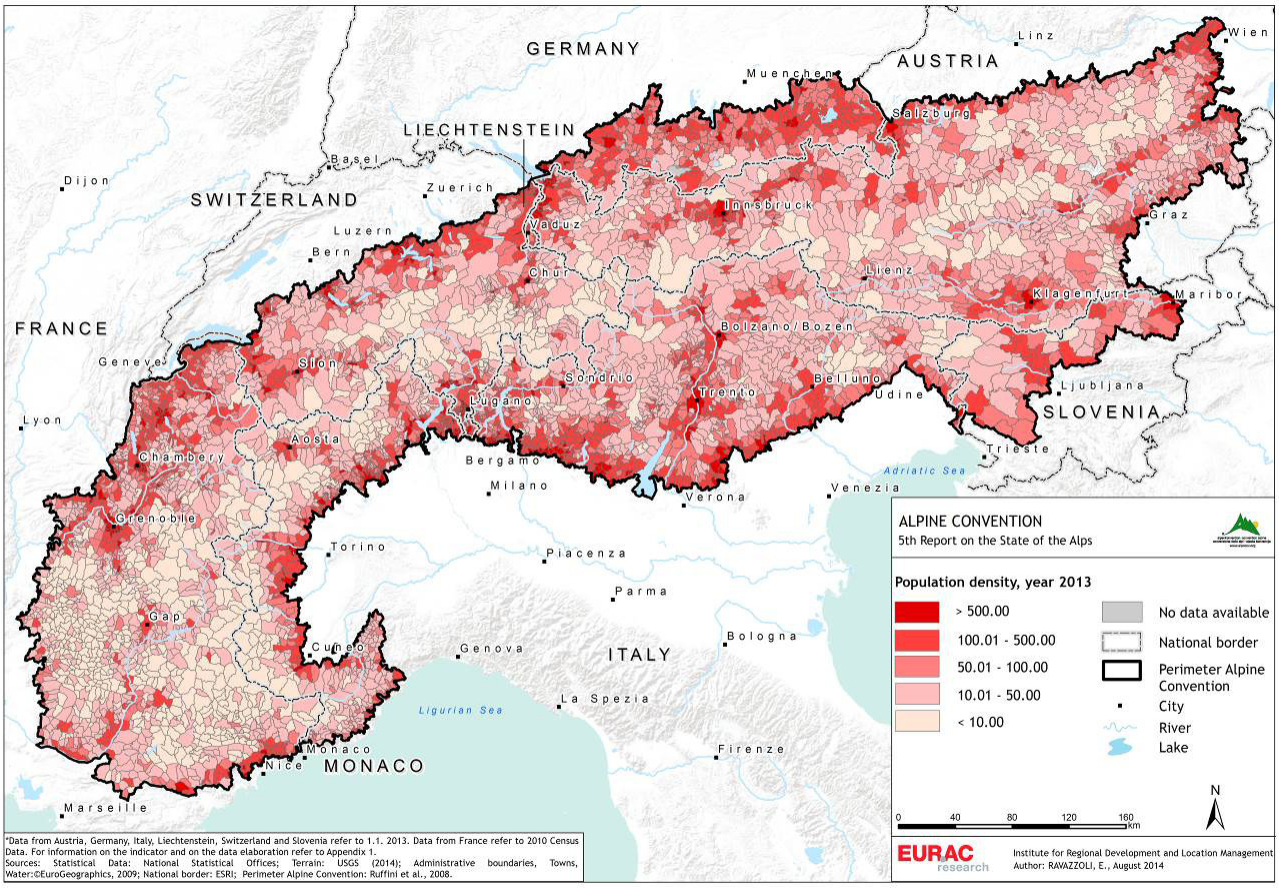


**Figure 3**: Population density (residents per km$^2$).

In contrast to the ones located in the large intra-Alpine valleys and the peri-alpine areas, the majority of the municipalities with low population density are located in territories characterized by a low level of accessibility. These territories are, in particular, the ones close to the central mountain ridge and located farthest from the metropolitan areas of the plains, especially in the Maritime, Provence, Cottian, Dauphiné, Lepontine, Western Raethian, Tauern, Carnic and Julian sectors of the Alps.

The data highlight that topography plays an important role in the distribution of human settlements. Independently from the municipal average density, population concentration appears to be higher in valley bottom areas as they allow easier settlement and offer more spaces for infrastructure, housing

and productive activities. In fact, even in generally scarcely populated areas, the valley bottom areas are characterised by high population density levels. In these areas, the population density reaches values comparable to non – alpine regions, taking in account the area of permanent settlement of the population[3]. This concentration of the population density valley bottoms is a recent tendency related to the last century: in the 1900s, when the Alpine economy was strongly based on un-mechanized agriculture, higher rates of population used to concentrate preferably on the south-oriented mountain slopes, being more sunny, warmer, and nearer to freshwater springs and to mountain pastures, as well as less exposed to flood hazards (Bätzing, 2005).

## 2.2 Population structure (gender, age, citizenship)

In order to analyse the structure of the Alpine population, four main indicators have been selected and calculated on a municipal basis: the percentage of women, number of foreign residents, the population aging index, the percentage of elderly population and the percentage of working-age population. A summarization of these indicators at alpine level, with a comparison of the data at national level is displayed in next table.

| | | *Women (per 100 residents)* | *Foreign resident population (per 1000 residents)* | *Elderly population (per 100 residents)* | *Ageing index* | *Working-age total resident population (per 100 residents)* |
|---|---|---|---|---|---|---|
| Austria | Alps | 51.2 | 96.7 | 18.7 | 129.3 | 66.8 |
| | National | 51.2 | 118.0 | 18.1 | 125.3 | 67.5 |
| France | Alps | 50.9 | 62.3 | 16.9 | 92.2 | 64.7 |
| | National | 51.6 | 62.4 | 17.6 | 96.4 | 63.9 |
| Germany | Alps | 51.1 | 72.5 | 21.4 | 155.1 | 64.7 |
| | National | 50.8 | 93.8 | 20.7 | 158.4 | 66.2 |
| Italy | Alps | 51.1 | 78.7 | 21.8 | 154.2 | 64.1 |
| | National | 51.6 | 73.5 | 21.2 | 151.4 | 64.8 |
| Liechtenstein | Alps | 50.5 | 335 | 14.9 | 96 | 69.6 |
| Monaco | National | 55.78 | 54 | 24.4 | - | 57.9 |
| Slovenia | Alps | 50.4 | 41.3 | 17.6 | 120.3 | 67.9 |
| | National | 50.5 | 44.4 | 17.1 | 118.1 | 68.4 |
| Switzerland | Alps | 50.5 | 203.6 | 17.1 | 128.3 | 67.2 |
| | National | 50.6 | 232 | 17.4 | 116.5 | 67.7 |
| **Alps** | | **51.0** | **94.7** | **19.5** | **129.8** | **65.5** |

**Table 2:** Main indicators of population structure, for the Alpine area and the whole national territory of the eight Alpine countries – January 1st 2013. Data at January 1st, 2013, except for France (census data, year 2010). Source: Eurostat database, for Monaco: Monaco Statistics.

[3] Area of permanent settlement: "is the area which is inhabited or used continuously throughout the whole year; in other words, where the majority of human activities is concentrated. This area includes intensively used agricultural areas, settlements and transport infrastructures, but does not include forests, pastures, bare rocks, wasteland and water surfaces. Due to the requirements of the respective spatial planning, the relevant administrative and political definition of the area of permanent settlements differs in the individual countries." (Alpine Convention, 2007).

### 2.2.1 The distribution by gender

The distribution by gender, calculated through the percentage of women on the total population, is in general linked not only with the population reproductive ability, but also with its structure by age and with the characteristics of the labour market. At Alpine level, the distribution of the population by gender does not differ significantly from the national averages and is on the whole fairly balanced: in the Italian Alps, women represent 51.1% of the total population (51.6% on the whole national territory), in the Slovenian Alps they represent 50.4% (in comparison with the national average of 50.5%). In Liechtenstein women correspond to 50.5% of the population, while in France the Alpine values are quite similar to the national average, with 50.9% of women on the total population in the Alpine territory and 51,6% at national level. The same applies for the Swiss and German Alps, where values in line with the national averages can be observed. Some more detailed insights can be gained by the analysis of the municipal situation which shows a homogeneous higher concentration of women in municipalities in the Eastern Alps, whereas the situation in the Western part is absolutely heterogeneous.

The ratio of women on the total population can be explained through the link to other indicators, such as, for example, the crude birth rate and the percentage of elderly population. In general, high values of the birth rate increase the percentage of male population (statistically, 106 males are born for every 100 females), whereas a particularly aged population is linked to an increase of the female ratio (women life expectancy is up to 5 years longer than male life expectancy). These indicators appear connected in particular in the Eastern Alps and only in few cases in the Central-Western Alps. For example, in the North-Eastern Austrian Alps, in Carnia and in the Dolomites high rates of women in combination with an older population exist, while in Alto Adige/Südtirol and in the central part of Tyrol low rates of women combined with moderately high birth rates can be observed. Finally, in the Western Alps, specifically in the Ossola Valley and in the surroundings of Biella and in the Langhe, there are high rates of women combined with an aged population. No particular evidence emerges from the Western Alps, where the reduced size of several municipalities contributes to an increase of the general variability of the resulting indicators.

### 2.2.2 The distribution by age

Without being an exclusively Alpine trend, the resident population ageing is a phenomenon which also affects Alpine municipalities accordingly, although not in a homogeneous way. This is represented in next Figure, which shows the percentage of population above 65 years on the total.

At alpine level, the highest elderly population rate is observed in Italian Alps, above all in Eastern area, with an incidence of the elderly population of 21.8%, compared, for example, with the 14.9% of Liechtenstein and 16.9% of French Alps. The comparison of the Alpine averages with the national ones results in a fragmented picture: while in Austria, Germany, Italy and Slovenia, the alpine population tends to be slightly older than the national, in France and Switzerland the opposite situation occurs.

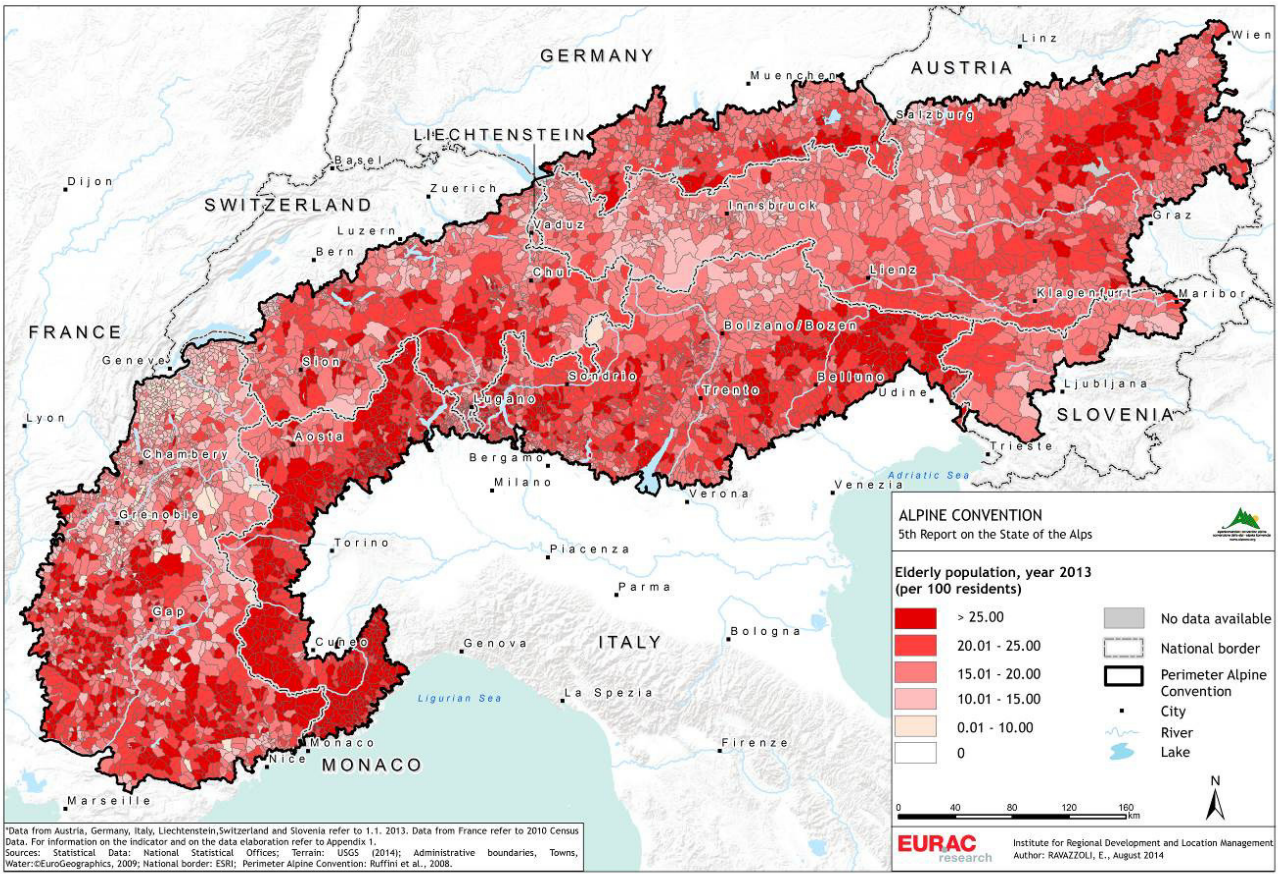


**Figure 4:** Elderly population (per 100 residents).

Another indicator, strictly connected to the percentage of elderly population, but actually different and able to add other important information to the phenomenon of the ageing of population is the total resident population aging index, namely the ratio between the inhabitants that are older than 65 and those younger than 15. This indicator is able to give therefore an idea of the "substitution rate" in the population composition by age. Likewise, at alpine level, the highest aging population index value is registered in German Alps (155.1%) compared to the lowest in French Alps (92.2). Except for France and Germany, it can be observed that the values of each country for the Alpine area are higher than the national averages (e. g. Swiss Alpine index is 128.3 while the national average is 116.5).

The percentage of population in working age, namely the population aged 15 to 64 is another important indicator, strictly related to labour market. The working age total resident population rate for Alpine area is 65.5%, with minimum in Italy (64.1%) and the maximum in Liechtenstein (69.6%). For almost all countries national averages are higher than Alpine national rates.

### 2.2.3 Foreign resident population

Migration is an important factor for the development of a territory, especially for areas, such as the alpine ones, subject to de-population or aging population. In these cases, the autochthonous population may not be sufficient to fulfil the needs of the labour demand or to face lower birth rates or the aging population. This is the reason for the foreign population resident in a territory being an important indicator to understand changes in the demography and its driving forces and also for

analysing the labour market[4]. In the whole Alpine area there is an overall average of 87.4 foreign residents out of 1,000 residents, but the situation is very heterogeneous according to the country taken in consideration: the lowest rate is in the Slovenian Alpine area with 41.3 foreign residents each 1,000 (followed by the French Alpine area with 62.3 foreign residents each 1,000), while the highest one is observed in Liechtenstein (335.0) and Switzerland (203.6). Comparing national averages with the Alpine areas, it can be observed that in Austria and Germany the national value is much higher than the Alpine value while in Italy it is the opposite, and the Alpine areas have a higher concentration of foreign population than the non-alpine ones. For Italy the national average is probably lower due to the fact that the foreign resident population is sparsely concentrated in the Southern non-alpine part of the country.

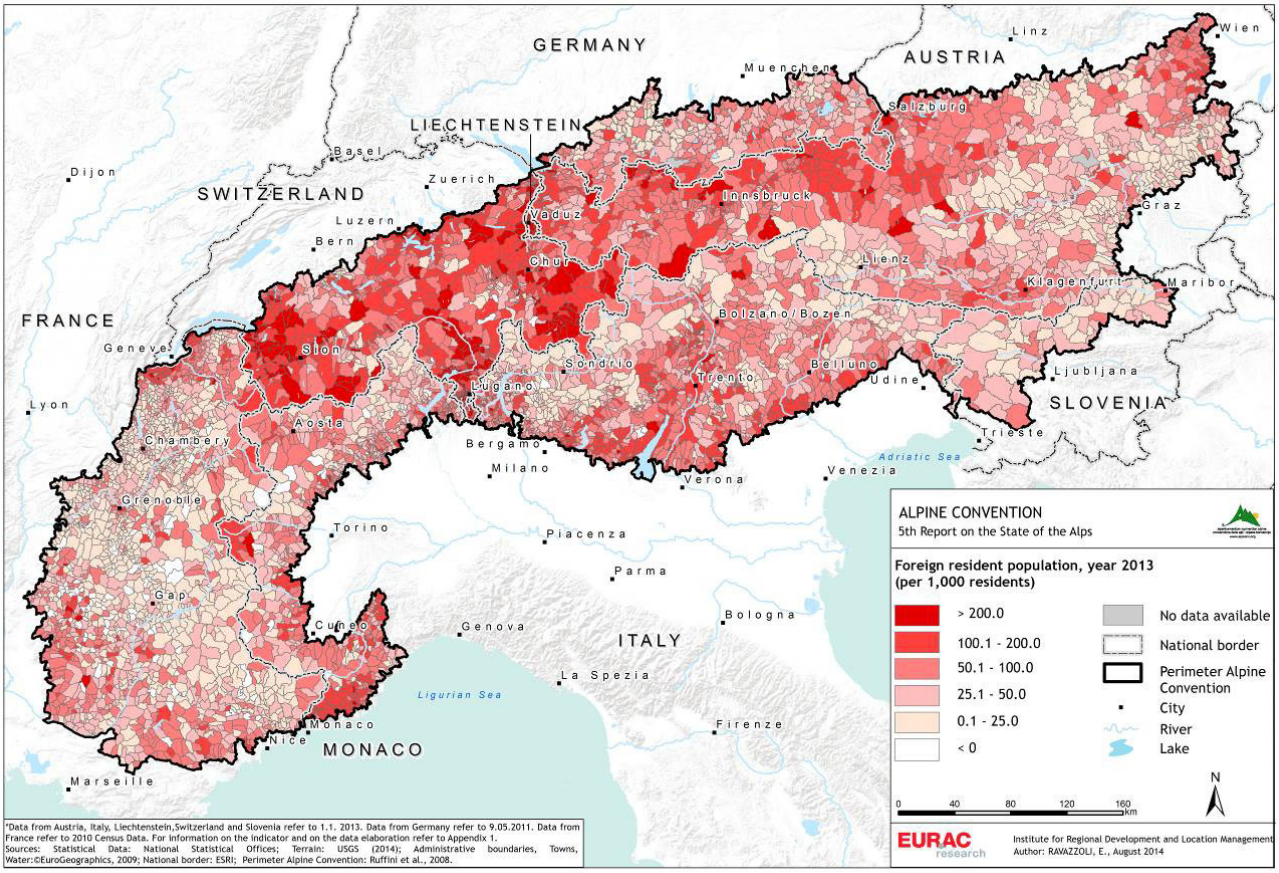


**Figure 5:** Foreign resident population (per 1,000 residents).

## 2.3 Population growth

Demographic evolution is influenced by trends in fertility, mortality and migrations. These changes can affect, but also can be affected by, economic and social changes in society. That's why it is crucial to consider the demographic changes in a wider context including also economic and social indicators. The relationship between the demographic development and the economic and social changes in the Alps is complex, since, on the one hand, social and economic changes are affected by the demographic development and, on the other hand, the demographic development is able to affect the economic and social dimension. This is the reason for considering the demographic changes in a

[4] The percentage of foreign population on the total is a static indicator which does not account for migratory flows, but rather depict their impacts.

wider context, including also economic and social indicators and taking into account the changes in the population structure that are occurring and have occurred at Alpine level.

At an overall level, demographic trends are not equally spread across the Alpine region and it is therefore not possible to highlight a single Alpine demographic population loss, stagnation or repopulation trend. Moreover, areas affected by population growth and population decrease are often located closely to each other, suggesting that specific conditions linked to the different administrative units considered may also play a relevant role in influencing demographic dynamics.

In general, at Alpine level, when analysing how population growth and decrease have been concentrated in the decade 2001 – 2011[5], the data show the highest population growth trends can be found in the Austrian Bundesländer of Tyrol and Salzburg, in the French departments of Haute-Savoie, Savoie (mainly around the cities of Chambéry and Grenoble) and Var, in the Swiss cantons of Valais, Ticino and Central Switzerland (Nidwalden, Obwalden, Zug, Lucerne, Schwyz).

In these prospering regions of the Alps, the urbanisation of the urban valley centres is evident. Due to the influence of the growing tourism sector, which offers a steady source of income for the local inhabitants, population gains can be noticed also in remote municipalities that are not easily accessible, particularly in the tourism centres in the Austrian, French, Swiss and Italian Alps.

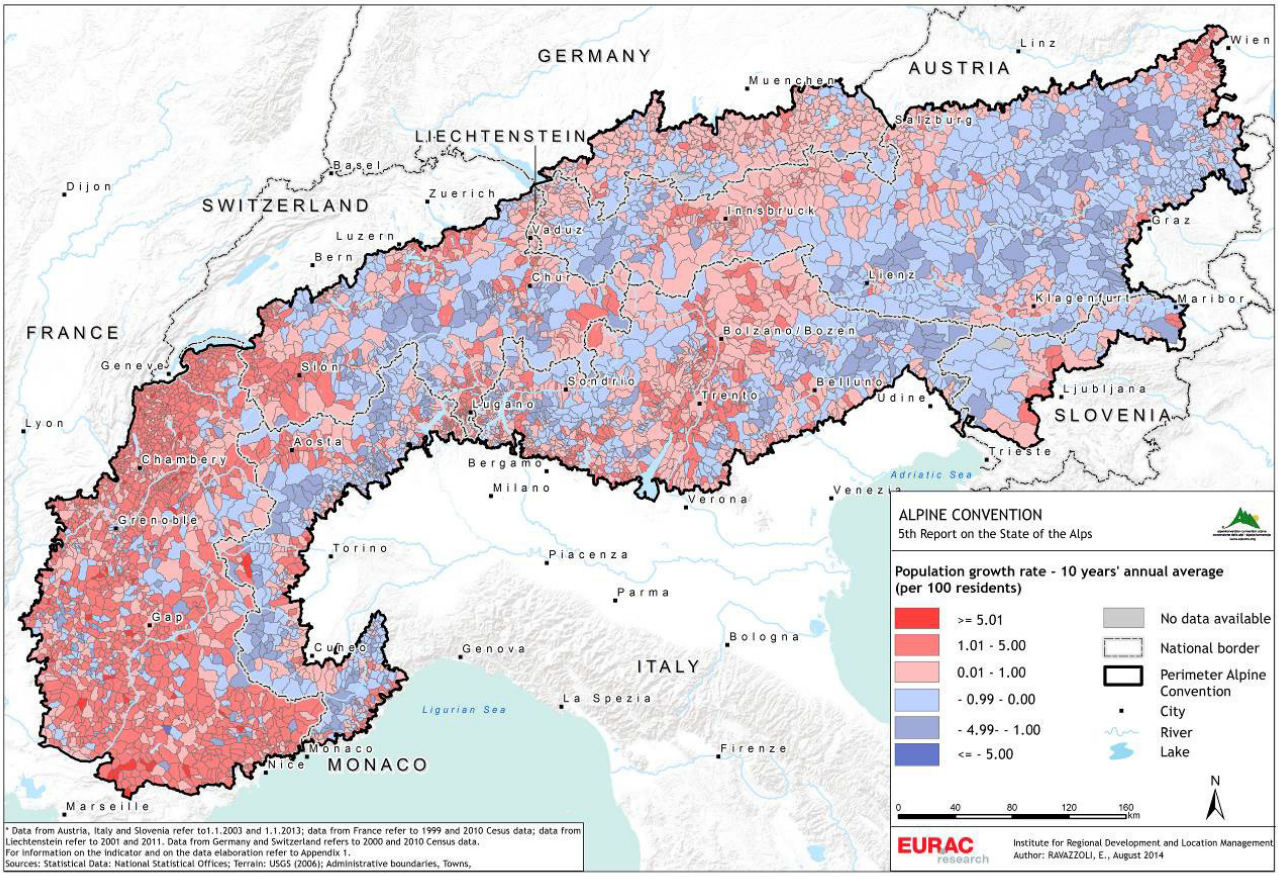


**Figure 6:** Population growth rate (per 100 residents).

[5] The main indicator analysed in this report for this scope is the population growth rate.

On the other hand, phenomena of population loss or stagnation can be observed in the central-eastern Austrian Alps (particularly in eastern Steiermark, in the southern parts of Niederösterreich and in the peripheral areas of Kärnten), in the Swiss Uri Canton and in several areas of the Italian Alps (Western side from Liguria to Val d'Ossola area, inner Lombardia, provinces of Pordenone and Udine). Furthermore, minor population losses are observed in the upper areas of the Slovenian Alpine region. All in all, the Alps as a whole show the emergence of agglomeration processes, where population tends to coagulate in the proximity of the urban areas and along the main transportation access routes to these urban areas. Nevertheless, different levels of incidence of this agglomeration phenomenon can be observed, both within-country and across countries. In France, Switzerland and Germany, this process seem generally slower, with a lower population decrease in remote areas in comparison with Italy and Austria. In the two latter countries, the situation varies greatly according to the territory considered and is not homogeneous, with a more severe population loss in more remote areas and a stable or increasing population along the main transportation axes and urban areas. Agglomeration processes seem here to have gone at a steadier pace in the last 10 years in comparison with France, Germany and Switzerland.

Different hypotheses can be advanced for the explanation of these changes; nevertheless, common denominators can be identified. Taking the Italian situation as an example, it is possible to see that the areas where specific policies have developed, for example in maintaining mountain agriculture, have had a lower loss of population. Fiscal autonomy is another important component of the picture. Another driving factor could be tourism, since it can be noticed that areas that have strong tourism structures are also the ones that show lower population losses.

## 2.4 Population balance

In order to specify the natural dynamics that are at the basis of population growth or decrease, it is worth analysing three main different components separately: the natural change, the crude birth rate and the crude death rate (table below).

| | | *Natural change* | *Natural change (per 1000)* | *Crude birth rate* | *Crude death rate* |
|---|---|---|---|---|---|
| Austria | Alps | -1,721 | -0.5 | 5.6 | 5.8 |
| | National | - | -0.1 | 9.4 | 9.4 |
| France | Alps | 11,091 | 4.1 | 12.1 | 8.0 |
| | National | - | 3.8 | 12.6 | 8.7 |
| Germany | Alps | -4,195 | -2.8 | 8.2 | 10.2 |
| | National | - | -2.4 | 8.4 | 10.8 |
| Italy | Alps | -7,418 | -1.7 | 8.8 | 10.5 |
| | National | - | -1.3 | 9.0 | 10.3 |
| Liechtenstein | Alps | 133 | 3.6 | 9.7 | 6.1 |
| Monaco | | - | - | 12.7 | 8.1 |
| Slovenia | Alps | 870 | 1.3 | 10.6 | 9.3 |
| | National | - | 1.3 | 10.7 | 9.4 |

*The table follows from the previous page*

| | | | | | |
|---|---|---|---|---|---|
| Switzerland | Alps | 1,777 | 0.9 | 9.4 | 8.4 |
| | National | - | 2.2 | 10.3 | 8.0 |
| **Alpine region** | | **537** | **0.0** | **8.8** | **8.6** |

**Table 3:** Main indicators of population demographic balance, for the Alpine area and the whole national territory of the eight Alpine countries – Year 2012. Data of Year 2012, excepted for France (year 2010). Data of the Principality of Monaco have been estimated.

The natural change (the number of live births minus the number of deaths) is associated with the inputs and outputs from the population stock due to natural causes (births and deaths). This factor is therefore influenced by the population structure, in particular by the percentage of elderly people on the total of the population. This influence can be observed in the Alpine area, where lower values of natural change in areas characterised by a high total elderly population index can be observed. Areas characterized by decreasing values are mainly located throughout Italian Alps, with remarkably low values on the Western and Eastern sides. A more fragmented framework is visible in other parts of France, Switzerland and Germany. Rather stable values can be observed in South-Western Austria. On the other hand, higher values can be found in a corridor from Liechtenstein to Central Austria, including Italian South-Tyrol and Austrian Tyrol, where the total elderly population ageing index is lower. Similar trends are also visible in French department of Haute-Savoie and the city of Grenoble and its surroundings. In Slovenia the situation is complex, with higher rates of natural change near the city of Ljubljana and in the bottom valleys and lower rates in the most remote areas. In this relation it has to be highlighted that the higher rates shown in some Slovenian municipalities are partly due to the fact that the municipalities only partly belonging to the Alpine Convention perimeter have been considered in their entirety.

To better understand the values and signs of the natural change it is also necessary to analyse both its inner components: births and deaths. For the description of these components, the most used indicators are the crude birth rate and the crude death rate.

At overall Alpine level, a high variability of the crude birth rate is observable, with the highest rate in the French Alps (12.1 per 1000) and the lowest values observable in the Austrian Alps (5.6 per 1000). All in all, the overall situation at Alpine level appears fragmented and heterogeneous according to the single municipalities considered and no clear pattern emerges. Local specific factors seem therefore to have a higher influence on the birth rate than general dynamics occurring at Alpine level.

For the Alpine territory in general, the crude death rate is strictly connected with phenomena such as an ageing population, with higher values of this indicator observable where the population is older. Therefore, despite the complex picture, which presents a high variability, a higher crude death rate is observable in the Alpine areas that present a high incidence of the older shares of the population (for example, the more rural Alpine areas in Italy and Austria). On the contrary, the presence of foreign population with its young age structure could be one of the factors that reduce the value of the indicator for territories where it is mainly present.

Natural population changes are not only linked to the population age, but also to other factors, such as familiar and reproductive behaviours play, an influential role. Among others, the presence of facilities and services that can encourage women to have children and families can be considered

important for natural change. Another factor which plays an important role is the fertility rate, namely the average number of children per woman. Another information which can provide interesting insights into health conditions and quality of life in different areas and can therefore be considered a proxy for determining positive conditions for births, is the life expectancy at birth.

| | *Austria* | *France* | *Germany* | *Italy* | *Liechten-stein* | *Slovenia* | *Switzer-land* |
|---|---|---|---|---|---|---|---|
| *Total fertility rate* | 1.44 | 2.00 | 1.38 | 1.43 | 1.51 | 1.58 | 1.52 |
| *Life expectancy at birth* | 81.1 | 82.1 | 81.0 | 82.4 | 82.5 | 80.3 | 82.8 |

**Table 4:** TFT and life expectancy at birth, 2013.

Another important factor that influences the total population change is the migratory component; the predominance of the "migratory component" is due both to the strengthening of the migratory flows and to the reduction of the fertility rates (the mortality can be considered quite stationary).

Migration seems to influence the Alpine territory in different ways. More specifically, regarding change in population due to migration, highest values can be seen in most of German Alpine municipalities, a great proportion of French territory, especially in Haute-Savoie, Var and Alpes de Haute Provence departments (even if sometimes fragmented), areas surrounding the cities of Salzburg and Wien. In Italy, the framework seems to be very more complex and fragmented: in any case, zones with higher values are generally located in peri-Alpine areas and in Central Alps (mainly Trentino – Alto Adige). Lowest values, at Alpine level, are visible in almost Swiss territory (with only a few exceptions). Central Austria and Slovenia show more stable values.

# 3. Employment and labour market main characteristics

## 3.1 Employment and unemployment dynamics

Demography and the labour market are two areas that are closely interrelated and closely linked to the development of an area. There is a mutual influence between the two phenomena and it is not simple to determine to what extent one can be identified as the driving force of the other. For example, on the one hand, the impact of the age structure of the population on a higher or lower labour supply is evident. On the other hand, a high demand for labour forces can promote the changes in the age structure of the population in which the active classes are well represented. For example, a dynamic labour market can influence the demographic dynamics by playing the role of attraction pole for national and international migrants. These interactions exist also in the Alpine territory. Moreover, in the Alps, significantly different local peculiarities make the effects of the above mentioned interrelations become even stronger, drawing a very complex and differentiated picture at the micro territorial level.

The economic structure of the Alpine territory is influenced by the specific orography, where more accessible areas can generally count on a more vital economy and attract more investments. Generally, the lack of facilities and depopulation tend to be found in less accessible areas. On the contrary, the most accessible areas – usually located along a national road network in a valley – and their bordering regions often enjoy both demographic and economic growth. Though improving accessibility does not assure economic success of a mountain region – a much more complex concomitance of factors and conditions is interpreted as being able to trigger local development (Alpine Convention, 2007).

As how for demographic development, the economic development in the Alpine area is extremely heterogeneous and polarized. The symbiosis of tourism and services, industry, electric power generation, agriculture, transport and mobility, is the basis of sound economic development. Nowadays there are several modern poly-structured economic centres in which the majority of the Alpine population is concentrated. Not only the orographic structure shapes the labour market; also "soft" factors (such as quality of life, leisure, culture and environment, services) tend to become more important than the traditional "hard" factors (payment, infrastructure) when considering the site conditions for setting up new enterprises with a high-quality labour force (ibid.).

In order to analyse the status of the labour market at Alpine level, this report includes three main indicators: the employment rate, the unemployment rate and the inactivity rate. An overview of these indicators for the Alpine area and the comparison with the national means is shown in next table. The data regarding the labour market in Germany and Switzerland are available only at NUTS 2 level[6].

[6] For Germany, ten districts (*Landkreise*) and three urban districts (*Kreisfreie Städte*) have been considered. For Switzerland, fifteen Cantons are considered: nevertheless, only ten of these Cantons Cantons (Uri, Schwyz, Obwalden, Nidwalden, Glarus, Appenzell Ausserrhoden, Appenzell Innerrrhoden, Graubünden, Tessin and Wallis) are located entirely within the Alpine Convention perimeter, five of them (Vaud, St. Gallen, Freiburg, Luzern and Bern) are only partially located within it.

| | | *Employment rate (per 100)* | *Unemployment rate (per 100)* | *Inactivity rate (per 100)* |
|---|---|---|---|---|
| Austria | Alps | 67.0 | - | 22.3 |
| | National | 69.6 | 5.9 | 25.9 |
| France and Monaco | Alps | 67.2 | 9.4 | 25.9 |
| | National | 69.5 | 10.3 | 28.8 |
| Italy | Alps | 66.2 | 5.9 | 29.6 |
| | National | 59.8 | 12.2 | 36.5 |
| Liechtenstein | | 61.8 | 2.5 | 19.6 |
| Slovenia | Alps | 58.9 | 11.2 | 33.6 |
| | National | 67.2 | 10.1 | 29.5 |

**Table 5:** Main indicators of labour market, for the Alpine area and the whole national territory of France and Monaco, Italy, Slovenia – Year 2011 (a). Data of Italy refer to 9 October 2011, data of Slovenia to Year 2011, data for France to Year 2010 . Data for the Principality of Monaco are estimated.

The employment rate is the proportion of employed residents among those of working age (15 to 64 years). This indicator is particularly important in relation to demographic changes, since a high employment often guarantees social stability and, due to the fact that employment is the main source of revenue for the majority of people, economic wellbeing of the families (Tappeiner et al., 2007). In general, differences between the single states can be observed, with no homogeneous trend at Alpine level: for example, while in France and Slovenia the average employment rate is lower in the Alpine area than at the national level, in Italy Alpine areas have a higher employment rate in comparison with the national level. Within the countries, differences are also observable, with areas such as South Tyrol in Italy and Haute-Savoie and Savoie in France showing higher employment rates than other Alpine areas belonging to the same country.

Strictly linked to the employment rate, the unemployment rate (the number of unemployed people as a percentage of the labour force (the total number of people employed plus unemployed). Next map shows how, also for this indicator, the overall Alpine situation is not homogenous. In fact, the unemployment rate goes from the lowest rate of 2.5% for Liechtenstein to the highest rate (11.2%) of the Slovenian Alpine area. Except for Slovenia, the average unemployment rate is lower in the Alpine area than at the national level. Within the countries, differences are also observable, with areas such as South Tyrol in Italy or parts of the Eastern Savoie in France that show lower unemployment rates than other Alpine areas belonging to the same country.

Regarding the analysis for Germany and Switzerland, whereas the German Alpine districts have unemployment rates in line with the Bavarian average (2.9) and considerably and homogeneously lower than the other Alpine countries and the German national average (4.7), the situation for the Swiss cantons is more complex. Cantons located in the perimeter of the Alpine Convention generally have lower unemployment rates than the average Swiss national rate (4.2), and, among these, Uri and Obwalden show for the year 2012 among the lowest unemployment rates Switzerland-wide (both 1.3). Nevertheless, the cantons of Ticino and Valais, both entirely located in the Alpine Convention perimeter, have values that are above the national average unemployment rate (respectively, 8.0 and 5.1).

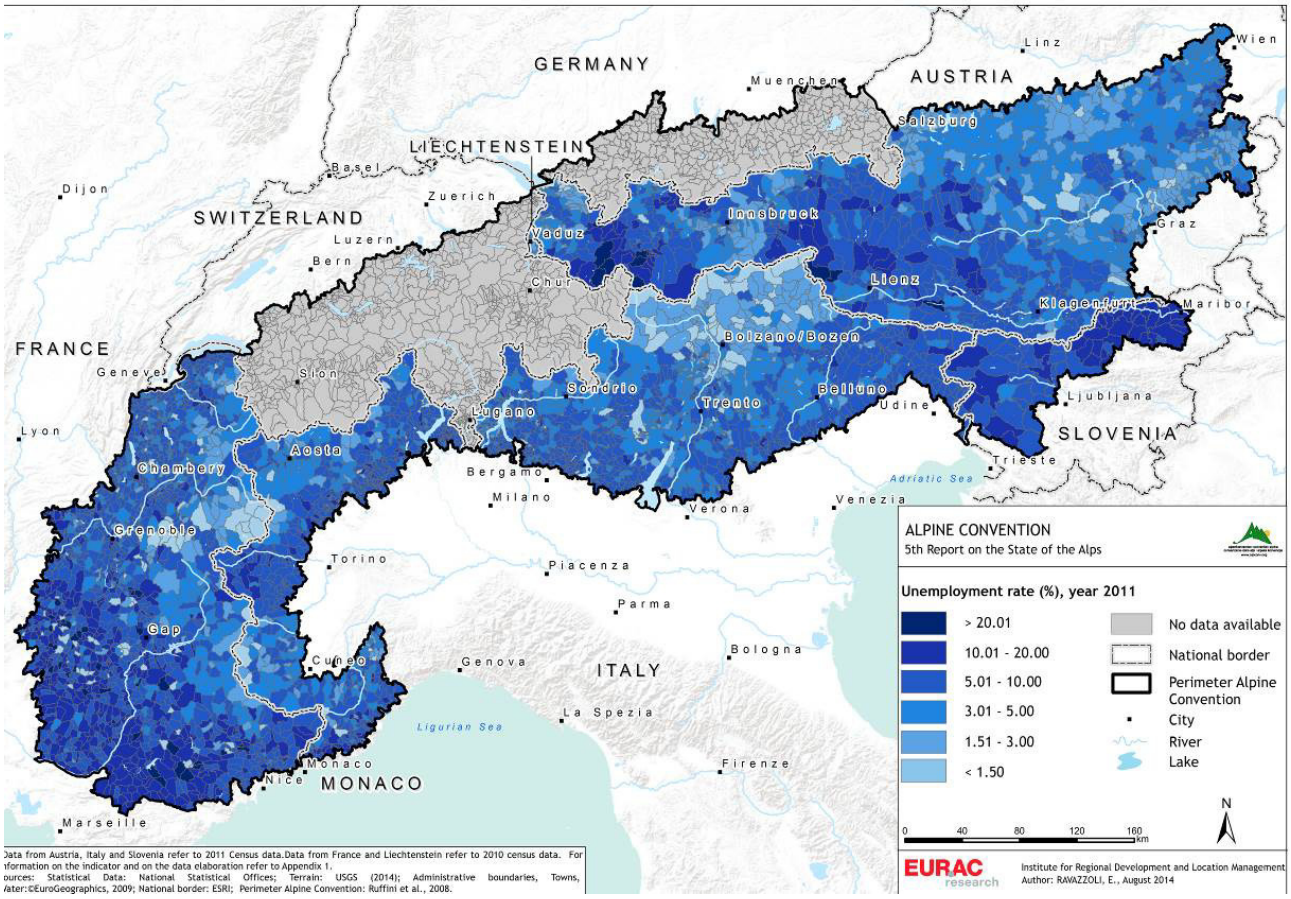


**Figure 7**: Unemployment rate (per 100).

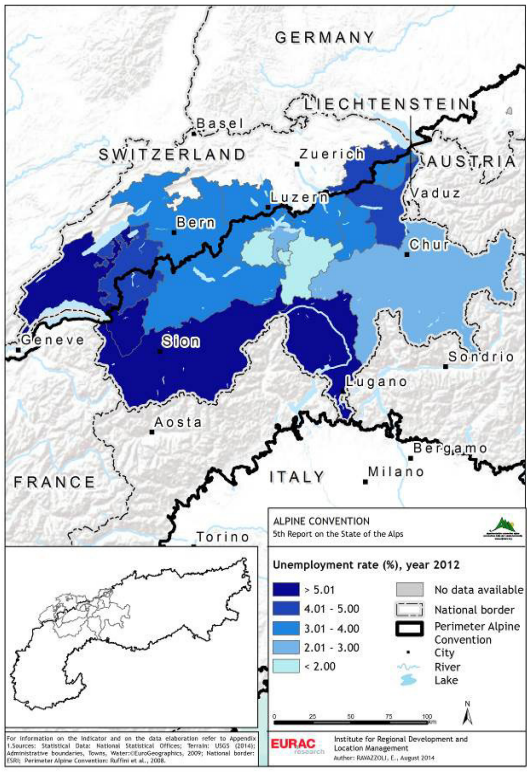


**Figure 8:** Unemployment rate in Switzerland (per 100).

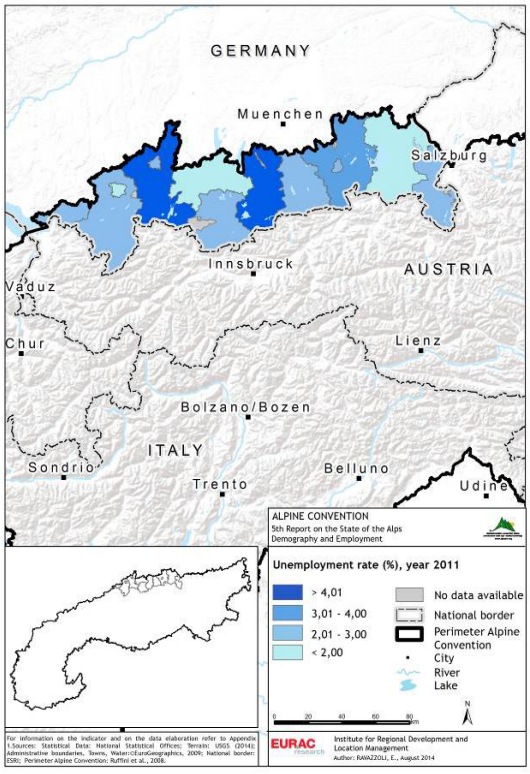


**Figure 9:** Unemployment rate in Germany (per 100).

"Non-participants in the labour force" are defined as those individuals who are classified as neither being employed nor seeking work. Considering three countries of the Alpine area (France, Italy and

Slovenia) the inactivity rate is higher in Slovenia (33.6% vs. 26% respectively in French Alps and 29.6% in Italian ones), higher also than the Slovenian national average value (29.5%).

## 3.2 Employment by sectors

The Alpine economy, traditionally based on agriculture and livestock farming, has known an industrial development rather late in comparison to other areas in Europe. Until the late 1970s, industry was the dominant sector in the Alps, with the highest share of employees whereas today, the available figures show the predominance of services on the total amount of jobs in the Alps (as for Europe as a whole).

Land-cover is to a large extent represented by fields (agriculture) and forests, and the primary sector is still considered of particular importance, also from political and socio-economical points of view (due to its connection with the preservation of the cultural landscape, and the safeguarding of the hydro-geologic equilibrium) (Alpine Convention, 2007). However, the structure of agriculture has largely changed over the last decades. Often agriculture is combined with other forms of economic activities and seems dependent on the features and performance of the wider regional economy. Nowadays, the rate of jobs in the primary sector is rather low. Nevertheless, seasonal and part-time jobs are common and employment in agriculture is still important where substantial labour force is needed (e.g. in orchards) or in sectors where more activities are jointly generated or additional farm activities exist (e.g. agro-tourism). The ratio of jobs in the primary sector on the total of jobs is higher outside the urban areas (and, within the same region, outside the major cities). Locally, often a high share of primary sector jobs goes hand in hand with a low level of secondary sector jobs (ibid.).

In the Alps, the share of employed people in the industrial sector is decreasing while, in the service sector, it has been rising since the 1980s. However, in the early 2000s industry accounted for about 36% of the jobs, with some regional variations. In some regions, especially in the western Italian Alps, industry has rates of employees higher than the national average (e.g. in the manufacturing sectors respectively 27.7% vs. 20.2%). Currently, the majority of jobs in the Alps are found in services (market & non-market), as it is also the case in the other European regions. The development of the tertiary sector in the Alps is comparable with the trend that can be found in the rest of Europe. However, the importance of the tertiary sector varies from one region to another: in the French Alpine municipalities the share of jobs in services exceeds 75%, in Italian Alpine area this rate is roughly 65%.

The location of third sector's activities along the Alpine range depends on different factors: for business service, the presence of economic activities represents a key factor, while, for services to individuals, the presence and number of inhabitants is relevant. For public administration services (which are present in all municipalities but more developed in major urban centers), the key factors are the level of performed administrative functions and duties, while the presence of cultural or natural amenities in the Alps is vital for tourist services.

The extremely localized nature of tourist development in the Alps is made apparent by simple figures such as the ones estimated by Bätzing for the 1990s (Alpine Convention, 2012):

- approximately 46% of all accommodation establishments were concentrated in only 5% of Alpine municipalities;
- only 10% of all municipalities (accounting for about 8% of the total population of the Alps) had a tourism-based economy;

- the incidence of tourism was minimal (less than 0.1 accommodation establishments per inhabitant) in about 40% of all Alpine municipalities and it was modest (between 0.1 and 0.5 accommodation establishments per inhabitant) in another 40% of them.

Tourism is today an economic sector of primary importance, playing a major role especially for the inhabitants of the high valleys; it has been estimated, for instance, that in the year 2000, tourism accounted for 35.4% of the GDP of oberwallis, the highest part of Canton Valais, compared to just 23.1% for Mittelwallis and 18.0% for Unterwallis (Berwert et al., 2002). Winter tourism generates each year a revenue of about € 50 billion and an estimated 10 to 12% of all jobs in the Alps (EEA, 2005, Alpine Convention, 2014). It can also be observed that the main tourist destinations are by and large characterized by positive migratory and commuting fluxes as well as by the highest employment rates and the highest indexes of job density in the respectively surrounding areas. (Alpine Convention, 2014).

## 3.3 Education

Education plays a vital role in both the economic and social context and the development of the education sector can give important information on the development of demographic dynamics (Eurostat, 2010). The presence of schools and universities in a territory and the commuting distances to education facilities can influence the persistence of young population and their families, at least during the studies' period. Moreover, education level, the labour market and demographic trends are dynamically intertwined. The younger and better qualified population is usually more mobile than the older one; therefore, the absence of an adequate job offer for qualified young people is likely to favour their location towards peri-Alpine areas, where higher rates of highly qualified job can be found. This phenomenon, common both to mountain areas and other geographically marginal areas, is also defined as "brain drain", namely the emigration of skilled labour force to more favourable areas that offer better opportunities (Corrado et al., 2013). This phenomenon may relate to different segments of society, but it seems particularly evident when it affects young people in the process of access to higher education.

The Alpine area's general situation is very heterogeneous considering the rate of university graduates in relation to the total number of residents over 15 years for the municipalities of the eight Alpine countries. This is because education policy may be strictly influenced by the education systems present in the various Alpine countries, having as a result a spatial distribution of education levels which is more related to the country level, rather than to "Alpine special characteritics". Moreover, national education systems vary in length, social status or other characteristics, producing outcomes that are not fully comparable.

# 4. Population and services

Welfare conditions and perspectives are rapidly changing at European and alpine level. These changes are both a cause and a consequence of the broader demographic changes and new population dynamics, which are generating great challenges for the programming and forecasting of adequate welfare and services responses to the upcoming needs. The increase of the share of older population, generally visible at alpine level, will be combined with the expectation that, in the future, an increasing number of older people will be living alone, so that informal care from other household members will not be available. Moreover, the increased participation of women to the labour force will also play an important role in the reduction of the supply of informal care. As a consequence, improving professional social care and support for independent living is rapidly becoming a priority. The future health status of the population will depend to a large extent on current health behaviour (European Commission, 2006).

The age of the resident population plays a key role in determining the levels of welfare and acceptable social conditions. It gives a picture of the relation between the two non-working sections of the population: those definitely no longer working and the young people who will be working in the future. As a consequence, it shows clearly what kind of demographic trend a municipality is likely to experience and what kind of infrastructure (e.g. schools and facilities for the care of the elderly) will be needed there in the future. All in all, although it is a phenomenon spread in all European Countries, in the Alps, the ageing of the population is particularly evident, especially in the Core Alpine area; this calls for an in-depth investigation of the way in which services for the population will have to be provided in the future.

## 4.1 Health care facilities

Health is an important priority for European society, who expects to be protected against illness and disease. Nevertheless, the health status of a population is difficult to measure, since it is hard to find a common definition among individuals, population, cultures, or even across time (Eurostat, 2010). Moreover, health indicators are strictly related to the concept of "quality of life".In general, mountain areas suffer a great inequality concerning the offer of social and medical care. The mountain milieu, regarding the access to health care, is certainly marked by its specific geography. Therefore, it would be hazardous not to distinguish between the health problems of the population living in touristic and industrial valleys, which can count on several communication facilities and is relatively favoured for what concerns the health care offer, and those of mountain population characterized by spread settlements, isolated villages and a lower accessibility. The social and economic contexts of Alpine areas do not allow people to benefit from the same health care system as the people living in cities or urban areas with the same social conditions.

Health systems - the combined arrangements of institutions and actions whose primary purpose is to promote, restore, or maintain health (World Health Organization, 2000) - are increasingly being recognized as key to fighting disease and improving the health status of populations. The number of beds in the health care services needed in a country depends on many factors, including the patterns of disease and the availability of alternative care settings.

In order to analyze the availability of health services, it is possible to consider the number of hospital beds for ordinary admissions (hospital beds used for admissions for at least one night) per 1,000 people. This is an indicator that reflects both induced demand and supply-side factors and the extent of physical, financial, and other barriers to health care (World Bank, 2013). This indicator of the availability of health care services, which compares the hospital capacity relative to the general population, is often used to carry out international and intra-national comparisons. In order to compare these indicators among municipalities in the Alps, it is advisable to use the definition of dataset as the System of Account classification[7] (World Health Organization, 2011) where the hospital beds are defined as both public and private, as regularly maintained, staffed and immediately available for the care of admitted patients, for ordinary admissions[8]. One of the main trends emerging today, both at European scale and referred to the Alpine area, is the decrease of hospital beds available for citizens. A considerable share of the observed reduction in hospital beds is likely to have been caused by the drop in the length of hospital stay (e.g. Italy has the highest rates for shortest stays and "day hospital" cases). Another reason is the arising of financial constraints during the 1990s, which have led to a rationalization of healthcare services everywhere (Alpine Convention, 2012). The increased demand for healthcare for elderly people, many of whom are suffering from chronic disability and diseases, has in most cases been met by transferring beds for acute or psychiatric care to long-term care, while total numbers are still declining (Eurostat, 2006). This phenomenon is particularly evident on the Italian part of the Alpine arc.

Since distance is the most important criterion for patients when choosing a hospital (Tappeiner et al., 2008), the spatial and temporal distance to the nearest hospital is an important indicator of medical provisions and of the recuperation situation of the patients. The distribution of ambulance stations, whether central or decentralized, the availability of an air ambulance or the technical equipment of the ambulance stations are further factors. However, the short access distances or travel times remain the most important factor. In an area that is relatively poor in health practitioners, mountain populations experience some new difficulties to access specialized and technical health care. For emergencies, general practitioners and pharmacists could be the only available recourse with considerably enlarge responsibilities, compared to their urban colleagues (Smirou, 1984).

## 4.2 Infancy day-care

Fertility indicators play an important role, in order to study familiar and reproductive behaviours. In the analysis it is important to devote special attention to the presence of facilities that can encourage women to have children and families to grow.

The share of children attending social and educational services for early childhood is used to measure the implementation of policies of reconciliation of family and work commitments. The indicator is defined as the percentage of resident children in the age 0-2 years (until the age of 3 years) attending the socio-educational services (only services that are managed or funded by the municipalities are

[7] Since 2006 OECD, EUROSTAT and WHO collaborated intensively to revise the System of Health Accounts methodology with the expertise and inputs of health accountants across the globe. This process culminated in the publication of new manual in October 2011: SHA 2011.

[8] HP.1 Inclusion: Beds in all hospitals, including general hospitals, mental health and substance abuse hospitals, and other specialty hospitals; occupied and unoccupied beds. Exclusion: provisional and temporary beds; beds in nursing and residential care facilities.

considered). The socio-educational services for early childhood include both nurseries and supplementary services for young children (including services managed in home). The indicator is available separately for the two types of services and in joint form.

## 4.3 Mobility

Transport and mobility have always been crucial issues in the socio-economic development of the Alpine area. They have fostered national and international trade and set the basis for the tourism activities. Nevertheless, the mass motorization and the increased access to transport by different social groups – i.e. the so-called democratisation of transport (Hernández Luìs, 2008) – have raised the issue of sustainability, mainly in environmental terms (e.g. energy consumption and emission reduction). Since then, mobility has been no longer interpreted as a mere economic development accelerator, but also as a high-impacting activity, which needs to be managed and regulated. According to the First Report on the State of the Alps (Alpine Convention, 2007), the terms mobility and transport are not exactly synonymous. In fact, transport is a means of moving persons and goods across space, while mobility is a more complex and socially embedded phenomenon. Mobility necessarily involves transport, but includes also "the accessibility of personal options and opportunities to serve human needs in a social sense" (potential mobility) and "the position of humans in a symbolic space" (realized mobility) (Götz, 2003).

Accessibility is a valid indicator that allows evaluating the reachability of a location using public or private transport modes. It enables people living in more remote places, such as villages of mountain areas, to connect nationally and internationally, and have access to a broad set of resources and services. Increasing the accessibility of areas by using different public transport modes and their combinations clearly represents a key opportunity especially in mountain areas, where the massive use of private vehicles, which provide the maximum degree of flexibility - is no longer sustainable. Indeed, favoring public transport and discouraging the use of private vehicles is crucial for the creation of more sustainable and efficient transport systems, which directly contribute to the sustainable development of communities. One of the criteria normally adopted to evaluate accessibility is surely the presence (and the frequencies) of public transport modes, which physically provide a mean for people to move from one point to another. An additional criterion to measure the accessibility is the evaluation of the travel times required to move from one point to another. It includes several elements, such as the travel time spent waiting for the vehicle, the travel time spent for the journey and the time required to reach on foot the final destination.

The presence of the public transport service and the travel times necessary to reach destinations characterize the accessibility of the transport system, but accessibility is often not enough to ensure modal shift from private to public means of transportation. A more accurate analysis of the strengths and weaknesses of the system also by adopting passengers' perspectives seems to be crucial to a) set up a user-centered design of the service and b) to increase the attractiveness of the whole system. Therefore, besides quantitative analyses of the performance of public transport, customer satisfaction analyses are a tool to define priorities and measures to meet the needs of the users and create a link between transport operators, public institutions and users.

The case of South Tyrol region provides an interesting example of an integrated and extensive transportation system that not only guarantees a good level of accessibility, but is also capable of satisfying passengers' needs.

# 5. Conclusions

The general aim of the RSA V was to describe the main socio-demographic phenomena across the Alpine area, overcoming the national boundaries. The subsequent adopted strategy has envisaged data collection at municipal level, in order to produce comparable data and create an harmonized overview of the alpine situation in terms of indicators' definitions, time series of references, geographical homogeneity and sources considered.

Another step has been the comparison of the Alpine region with the respective national average data: this allowed highlighting some peculiarities and focusing on them, in order to analyse the mountain-related problems and the solutions on field as presented in the good practices examples. The analysis of the Alpine socio-demographic situation revealed, first of all, that the Alpine region is currently experiencing a markedly heterogeneous demographic growth.

Differences in demographic growth are related to accessibility, topography and altitude, socio-economic factors, position and role of the Alpine region in each Country. Areas with growing population stay side-by-side with demographic decrease areas, and similarly contrasting trends can be also be found, at lower scales, in the same regions or even provinces. In very general terms, it can be stated that population is growing in the central and in the northern part of the Alps and decreasing in the eastern Alps and in some sectors of the southern side of the crescent. All over the 20th century a pronounced difference existed between the German Alps and the Italian and French Alps; today, smaller but more complex differences can be pinpointed.

A final step of analysis allows considering simultaneously different variables (both demographic and employment) in order to synthesize them in one or even a reduced set of main dimensions. Then different clusters of Alpine areas can be built according to their inner characteristics observed with respect to the dimensions previously individuated (areas of well-being vs. critical areas).

As of 2013, Alps were inhabited by 14,512,528 people on a 190,855 km² territory, with a population density of 76 inhabitants per $km^2$, which makes the Alps one of the less populated areas in central Europe but also one of the most dense mountain areas worldwide. Population density is generally higher in the peri-alpine areas and in the main valleys, compared to core Alpine area.

The establishment of urban centres within the Alps and the ongoing process of peri-urbanisation have led to a change in living standards. The Alps are no longer a mainly-rural area with a rural population but now they can be considered the preferred residence for people who want to combine the advantages of urban infrastructure with the attractiveness of unspoilt countryside.

In the last decade the average population growth rate remains positive thanks in particular to immigration, which has been gaining considerable strength. Migratory fluxes involve overall the peri-urban and the peri-alpine areas; nevertheless, depopulation of isolated areas is observed showing a heterogeneous demographical pattern.

In the whole Alpine area the foreign resident population is 87.4 per 1,000 residents but the situation is very heterogeneous: the minimum is in the Slovenian Alpine area with 41.3 (followed by French Alpine area, 62.3) and the maximum is observed in Liechtenstein (335.0) and Switzerland (203.3), caused probably by the attractiveness for senior and wealthy citizens on account of its privileged setting (tax scheme, climate, leisure facilities).

Next to the international population movement which has become a marked social and demographic feature of the whole of Europe, the Alps also receive fluxes of older people who desire to live in a pleasant environment. Moving in the opposite direction, young people leave in considerable numbers the highlands (and sometimes the Alpine perimeter) to search education and jobs that are more specific and qualified.

Linked to this situation, another key issue of Alpine demography is the ageing of the population, which imposes a reconsideration of the modes of provision of public services and of some specific but crucial aspects of the welfare system, not least because the localities that are most affected by ageing are the smallest and least connected with the main road network. In particular, ageing heightens the need to improve certain services (e.g. social services, hospitals, distribution of meals) and to create ad hoc structures. Both the decrease and the ageing of population cause the closure of services like primary schools: this entails changes in the patterns of cultural transmission and intergenerational relations, thereby affecting the whole community.

All in all, it can be concluded that in the Alpine area economic development, like demographic evolution, is extremely heterogeneous and polarized. The symbiosis of tourism and services, industry, electric power generation, agriculture, transport and mobility, is the basis of economic development.

The evidence collected and systematized by the expert group highlights that behind the naked figures which measure the declining or growing number of inhabitants or even the structural ageing of the Alpine population hide compositional changes. An all-important issue is represented by the compositional changes many upland communities are experiencing in their ranks owing to the "immigration" of new inhabitants, generally younger than the majority of the local population, mostly coming from the lower reaches of the Alps or indeed from the cities in the plains, and quite often also from afar. Needless to say, these compositional changes must be especially pronounced in those areas where population is growing in spite of a negative or at best stationary natural balance of births and deaths. But even in those municipalities where the number of inhabitants is falling there are such flows of immigration.

The characteristics of different Alpine areas have been illustrated also with the support of accurate maps. The connection with the territory is crucial to understand the current demographic situation and the most recent tendencies. Furthermore, the support of well-known general studies and the empirical evidence yielded by extant surveys have all helped to give the Report what we reckon to be a satisfactory degree of authoritativeness.

On the other hand, it has to be mentioned that it was not possible for all the Contracting Parties to participate in drafting the report with the same degree of efficiency and completeness. The difficulties found by some Parties to provide direct information on some relevant issues has resulted in a certain lack of homogeneity in the data set. For the time being, this has hampered an adequate balancing of the contributions from different regions in the Report, as well as a detailed comparison of the figures.

It is also very important to notice that the recent national censuses (2011) have offered the opportunity to dispose for the whole Alpine area of a larger and more up-to-date amount of data at a more detailed territorial level, which will permit to outline a more precise framework, most of all for labour market, to assess the extent and direction of the changes that have occurred in the past decade.

To provide an easy-to understand overview of this complex and colorful picture it can be useful to apply methods and tools such as synthetic indexes, which are able to summarize in a single average value the multiplicity of characteristic values of each different micro territorial area. To measure the demographic and labour market's dynamism in the Alps the Mazziotta-Pareto Index has been applied to a set of eight demographic and labour market's indicators, calculated on each one of the Alpine municipalities included in the analysis.

Furthermore, a final step of analysis allows considering simultaneously different variables (both demographic and employment) in order to synthesize them in one or even a reduced set of main dimensions. Then different clusters of Alpine areas can be built according to their inner characteristics observed with respect to the dimensions previously individuated (areas of well-being vs. critical areas).

The cluster analysis confirms that, at the micro territorial level, in the area persist huge differences in conditions and dynamics both with reference to the situation of the population and the demography, and with reference to the labour market. These differences in some cases go across the national boundaries. In others, however, they are rather clearly defined and delimited by national or even regional boundaries, highlighting the importance of any policy in guiding certain phenomena.

Some "Thematic Analyses" (specific chapters dealing with a particular phenomenon cared by single Countries, Observers, external subjects) and a good practices collection has been included in the final extended version of the Report. These further studies dealing with demographic changes and their impacts on labour market and service provision have been collected in order to prepare examples and suggestions for policy-makers.

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