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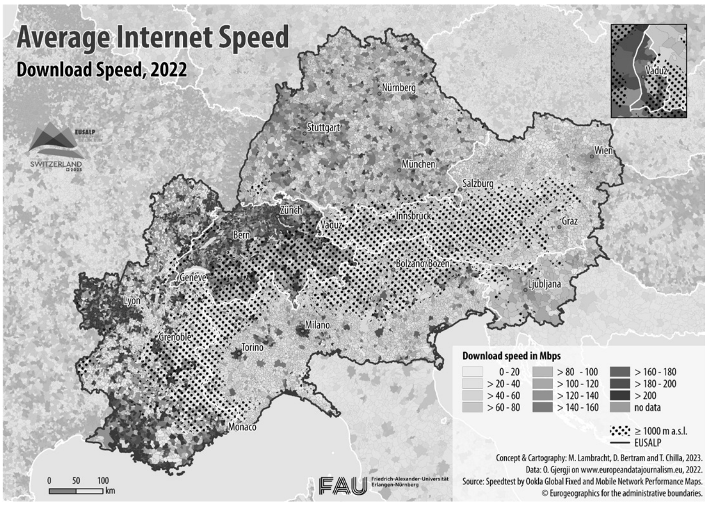
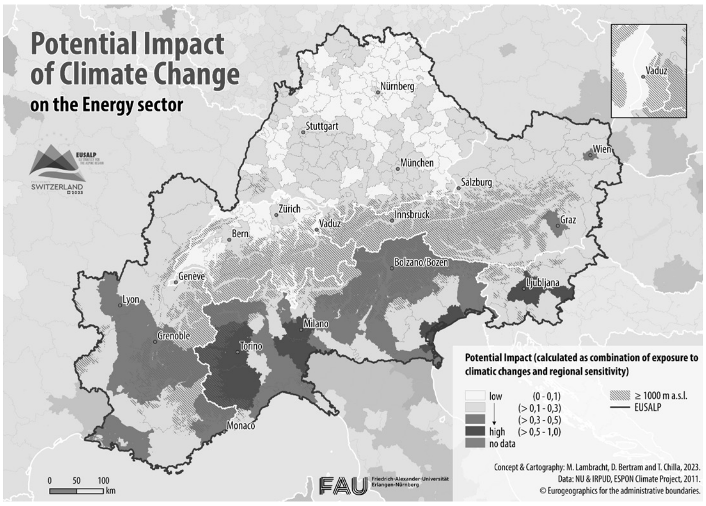
Working Paper No. 5

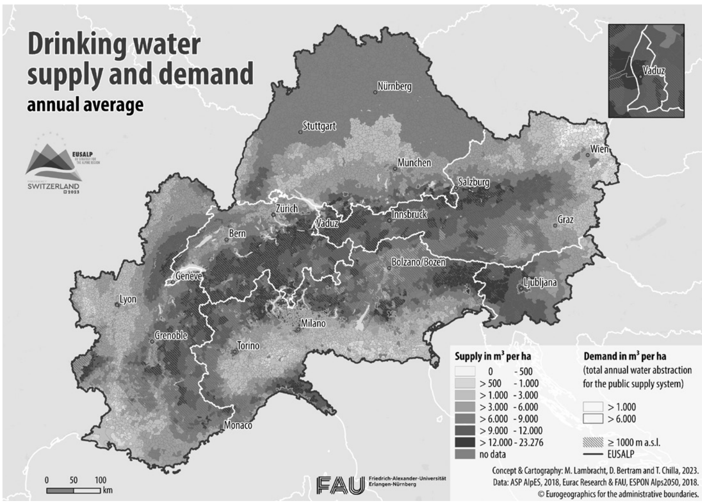
EUSALP
EU STRATEGY FOR THE ALPINE REGION
PRESIDENCY SWITZERLAND 2023

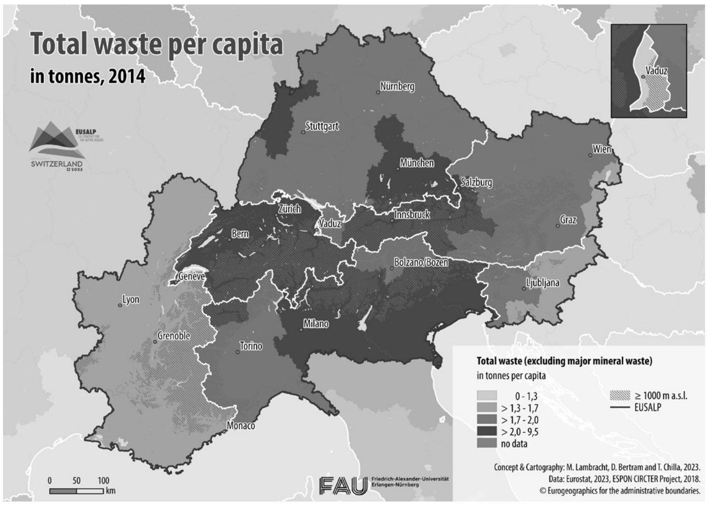
Mapping the Scene: Cartographic sketches linked to the EUSALP cross-cutting priorities

EUSALP Annual Forum organised by the Swiss Presidency









November **2023**

Tobias Chilla, Dominik Bertram & Markus Lambracht
FRIEDRICH-ALEXANDER-UNIVERSITÄT ERLANGEN-NÜRNBERG

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Authors:
Prof. Dr. Tobias Chilla, Dominik Bertram und Markus Lambracht
Friedrich-Alexander-Universität Erlangen-Nürnberg

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1 Introduction

The Swiss Presidency of the EU Alpine Strategy (EUSALP) 2023 has focused on transversal topics and their political relevance[1]. At the end of the presidency, the Annual Forum and the General Assembly took place in Bad Ragaz (19th Oct 2023), where four cross-cutting priorities were discussed:

- Promoting Digitalisation for the Alps
- Accelerating the Energy Transition for a Carbon-Neutral Alpine Region
- Promoting a Joint Water Management Transition
- Boosting Circular Economy

The authors of this working paper were invited to 'map the scene', i.e. to present cartographic illustrations for each of these cross-cutting priorities. The maps are based on data that have not yet been widely used in the Alpine region, but have been selected to provide 'food for thought' and to 'fuel the debate'. On the following pages, the maps presented in Bad Ragaz are documented in a compact form, in response to the strong interest shown by the participants of the conference. The EUSALP cooperation has been active for about a decade now, even if the formal adoption of the strategy was in 2015[2]. During this time, the idea of tackling common challenges across the wider Alpine region has been established, providing a relevant platform and perimeter for 48 regions from 7 countries – as shown in Fig. 1. For many stakeholders, however, the macro-regional cooperation has remained somewhat abstract by now. Maps on a fine spatial scale with a thematic concretisation might be an inspiration for further concretising cooperation activities.

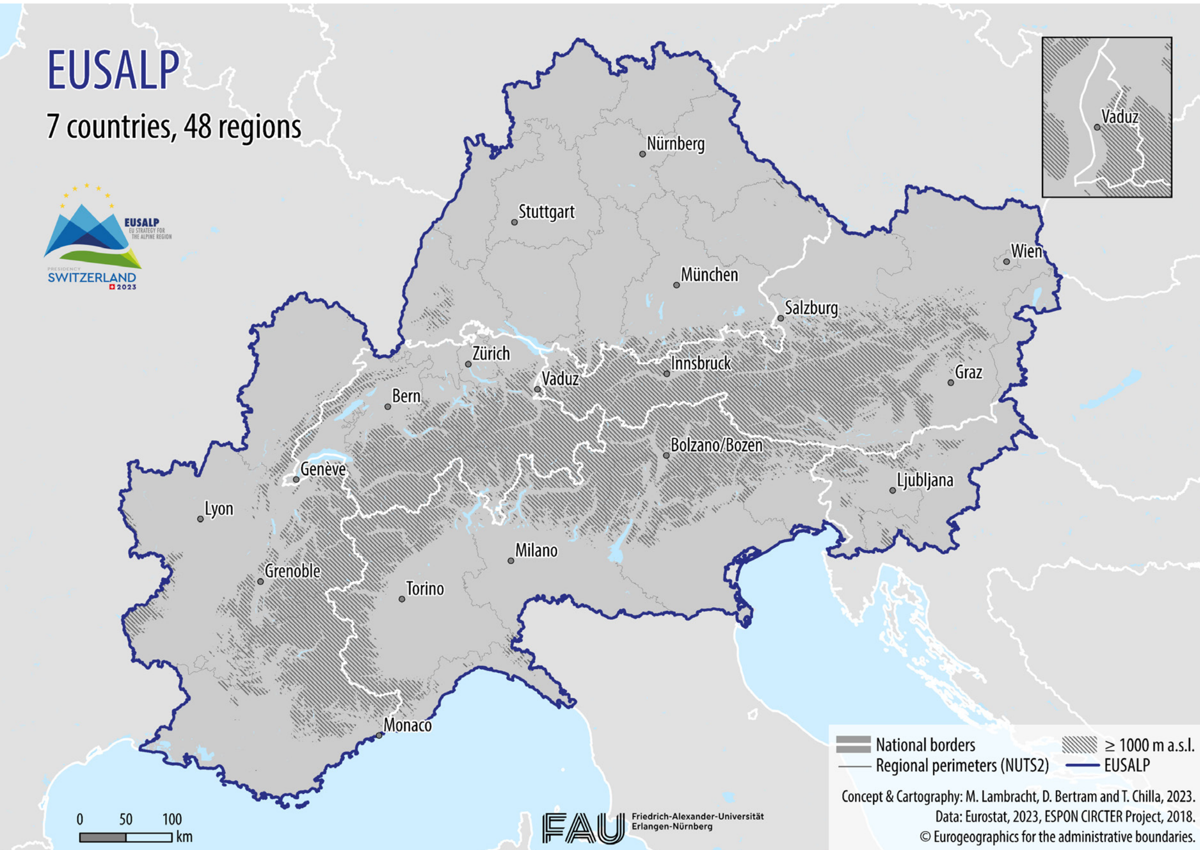

Fig. 1 Geographical overview: Involved countries and regions as well as topography (> 1.000 m.a.s.l.)

1 https://www.alpine-region.eu/swiss-presidency-2023
2 https://www.alpine-region.eu/eusalp-history

2 Promoting Digitalisation for the Alps

Indicator/Methodology:

The average internet speed data for Europe prepared by OBC Transeuropa for EDJNet is based on data provided by Speedtest by Ookla Global Fixed and Mobile Network Performance Maps, based on Ookla's analysis of Speedtest Intelligence data for the first quarter of 2022. Average download speed values are expressed in megabits per second (Mbps) and consist of a gridded spatial data frame. Each tile of the grid contains multiple Internet speed measurements voluntarily submitted by users through the Speedtest platform. To get a sense of the state of internet speed across Europe, the Ookla data is merged with the shapefiles of the European Nomenclature of Territorial Units for Statistics (NUTS3) and Local Administrative Units (LAU). The download speed for each administrative unit is obtained by calculating the average of all observations within the boundaries of the administrative unit, weighted by the number of tests. Average download speed values are expressed in megabits per second (Mbps), not to be confused with megabytes per second (Mbps). The data is from Ornaldo Gjergji on the European Data Journalism Network.[3]

Description:

The first cross-cutting priority postulates the promotion of digitalisation. The objective is to make Alpine territories 'smarter' and more sustainable. Indeed, digitalisation is amongst the key preconditions for a successful regional development. The challenge is to avoid 'digital divides', i.e. extreme differences in the economic, social and spatial perspectives. Fig. 2 and Fig. 3 show the download speed at two spatial scales (municipality and district level). Obviously, the download speed differs considerably across the Alpine region. The values range from less than 20 megabits per second to more than 200 on both scales. If digital infrastructure is seen as a prerequisite for successful socio-economic development, the scope for improvement is clear. Even if this is only one indicator among others, it illustrates the relevance of ensuring spatial balance in digitisation processes. Morphology does not play a dominant role on both scales. Instead, national affiliation appears to be a relevant explanatory factor. However, even if infrastructure investments are predominantly organised at the national scale, a series of pan-Alpine challenges have to be addressed, including issues of vocational training, exploiting potentials of remote working and learning from best practise. Fig. 3 illustrates urban-rural differences. Infrastructure investments are much more likely to pay off in urban areas than in rural contexts. Policy instruments such as procurement rules and financial support can make a major difference in this context. It should be emphasised that the data in both maps are open source data from private actors as statistical institutions do not provide such data. Evidence-based policy requires better availability of digitalisation data that are a) harmonised or at least comparable across countries and b) available at a fine spatial scale.

3 https://datavis.europeandatajournalism.eu/obct/connectivity/

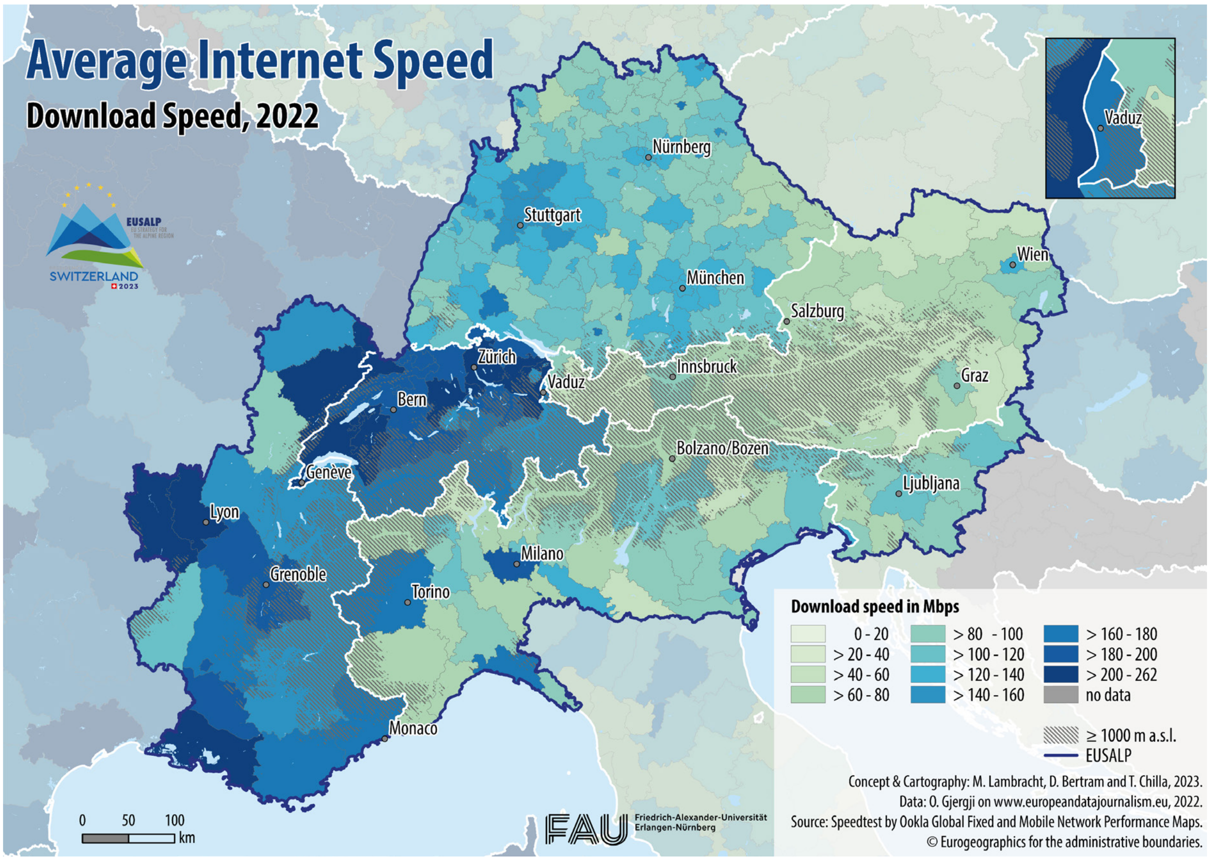

Fig. 2 Average download speed at sub-regional level (NUTS3)

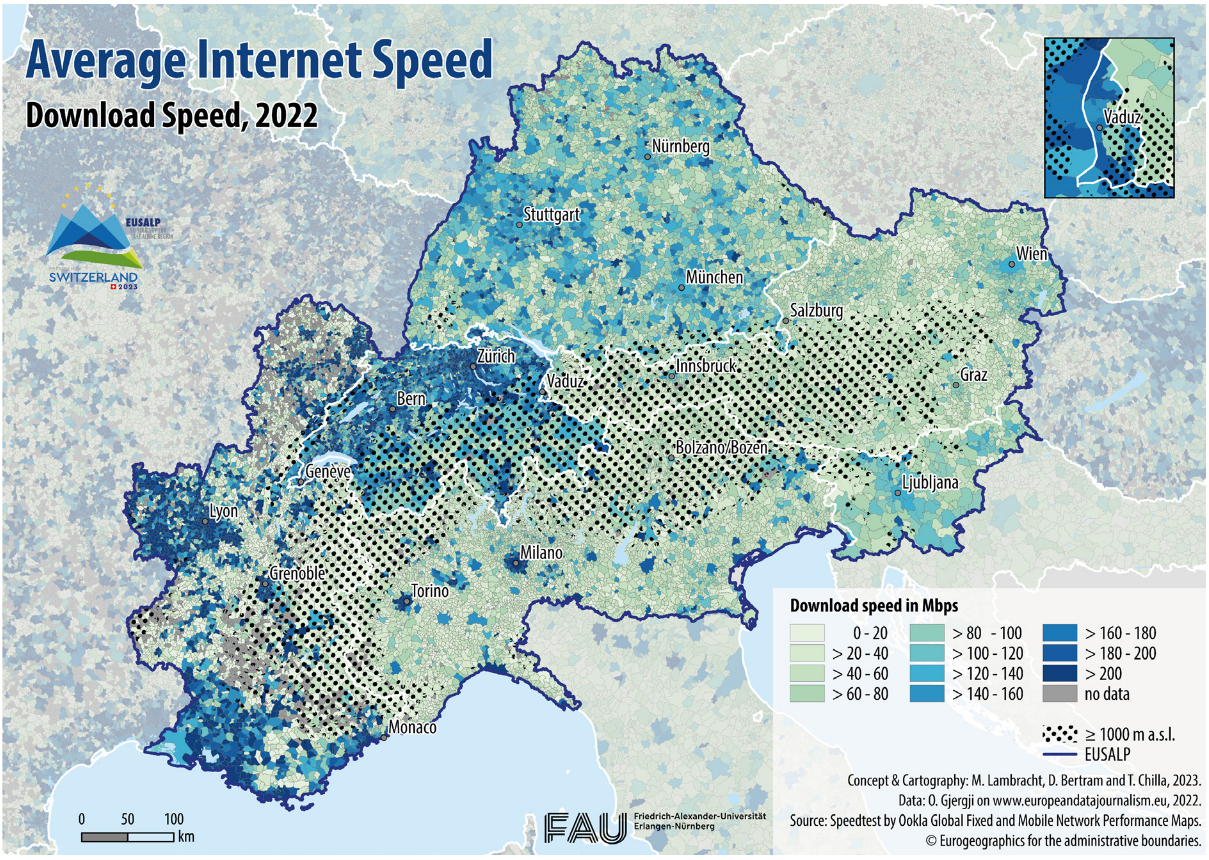

Fig. 3 Average download speed at municipal level (LAU)

3 Accelerating Energy Transition for a Carbon-Neutral Alpine Region

Indicator/Methodology:

The potential impact of climate change on the energy sector (until 2100) is an indicator combining potential impacts of changes in summer precipitation, summer days, frost days, changes in inundation heights of a 100 year river flood event and a sea level rise adjusted 100 year coastal storm surge event on energy supply and demand. The data is from the ESPON CLIMATE project.[4]

Description:

The second cross-cutting priority calls for an accelerated energy transition to a carbon-neutral Alpine region. Fig. 4 illustrates the impact of climate change on the energy sector, linking two very complex thematic issues. The darker the colour on the map, the higher is the projected impact on energy production and supply, particularly due to the expected increase in droughts, heavy rainfalls, and higher temperatures. The map shows a north-south gradient as the southern Alpine regions tend to be more affected by climate change than the northern ones. The calculations of this map are already several years old, but they seem to be confirmed by current events: The dark colours in parts of Slovenia seem to reflect the catastrophic flooding events in the summer of 2023. At the same time, all parts of the EUSALP perimeter are expected to face the impact of climate change on the energy sector. In this sense, it is one of the 'common challenges' for Alpine spatial development.

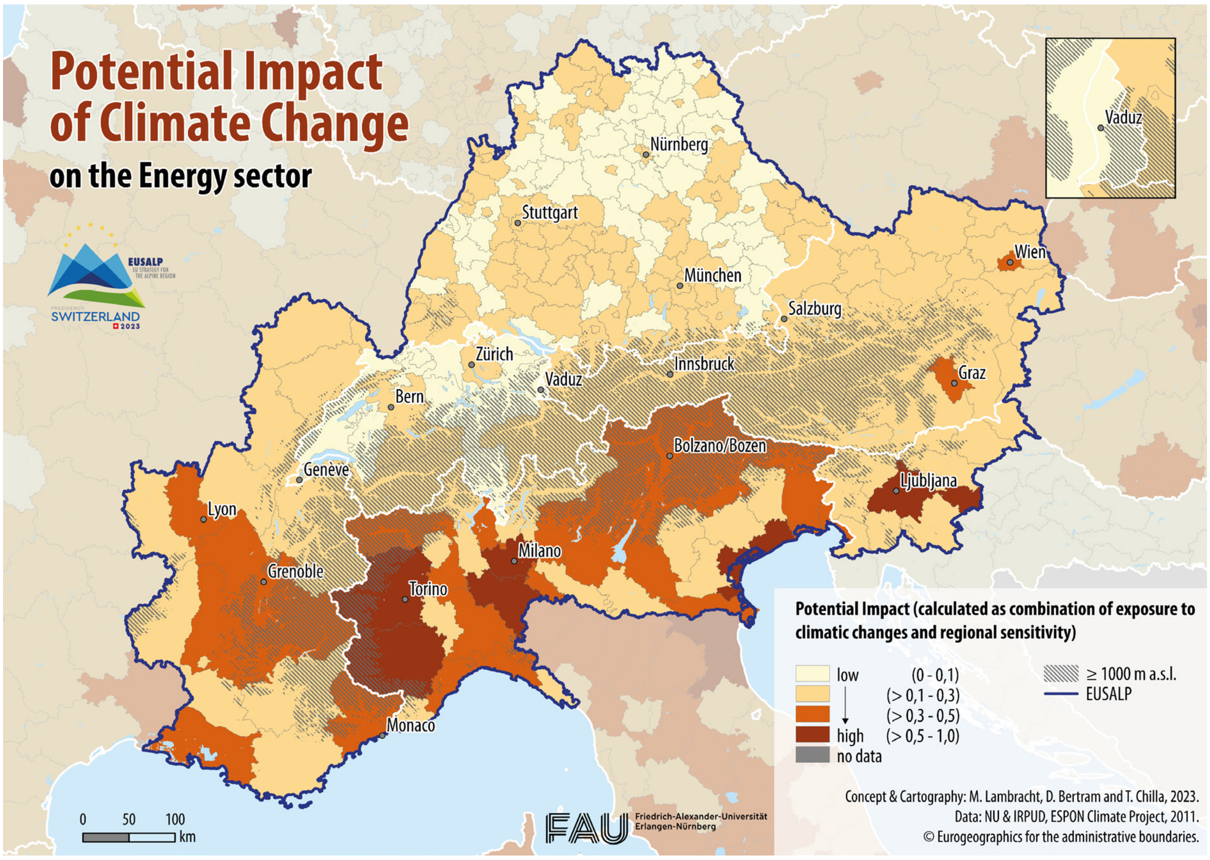

Fig. 4 Potential impact of climate change on the energy sector

4 https://www.espon.eu/climate

4 Promoting a Joint Water Management Transition

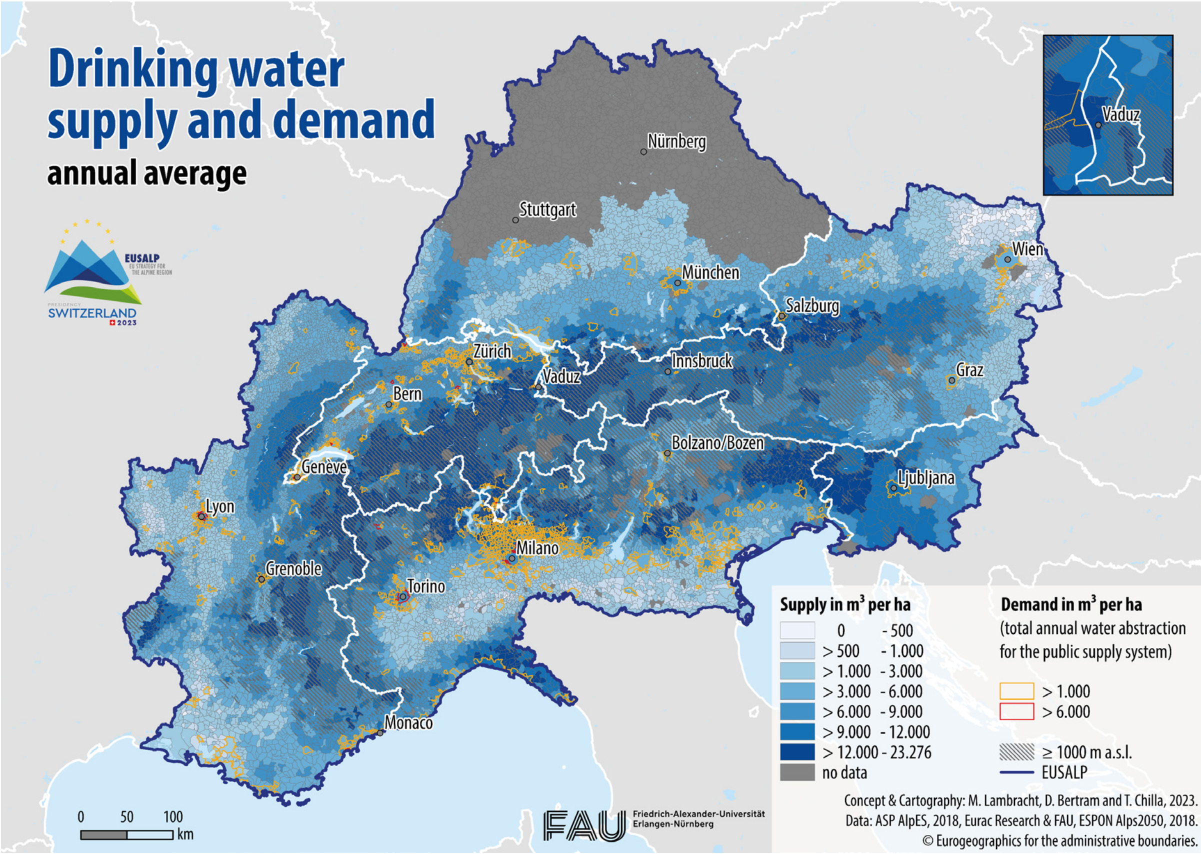

Fig. 5 Drinking water supply and demand

Indicator/Methodology:

The data on drinking water supply and demand are based on the results of the Alpine Space project AlpES: Alpine Ecosystem Services – mapping, maintenance, management[5] which was integrated in the ESPON Alps 2050 project[6]. The map contrasts surface water supply and demand. The supply indicator quantifies the annual average available water runoff with drinking water quality. The model estimates the water runoff from sub-catchment areas based on gridded information on climatic, soil, topographic and land cover characteristics. The demand indicator quantifies the demand for drinking water as the total annual abstraction of water for the public supply system. Water abstraction is understood as water taken directly from its source.

5 https://www.alpine-space.eu/project/alpes/
6 https://www.espon.eu/Alps2050

Description:

The cross-cutting priority of a joint water management transition aims, amongst others, at a 'water smart society', i.e. improved management and sustainable patterns of water use. Fig. 5 shows two related 'water geographies': The blue colours indicate the quantities of water available, which is closely related to morphology (the higher the mountains, the more water tends to be available). The yellow/red colours indicate the quantities of water demand, reflecting the settlement system (the larger the city, the higher the water demand tends to be). The contrast between these two patterns is obvious and leads to difficult questions of governance: Which types of users and territories have which rights to water use? And who has what obligations to provide water? How can compensation regimes and communication routines be established? The map shows that these questions are highly relevant throughout the Alpine arc, especially between mountainous territories and pre-Alpine metropolitan regions. Managing these relationships is certainly a common challenge for the EUSALP area.

5 Boosting Circular Economy

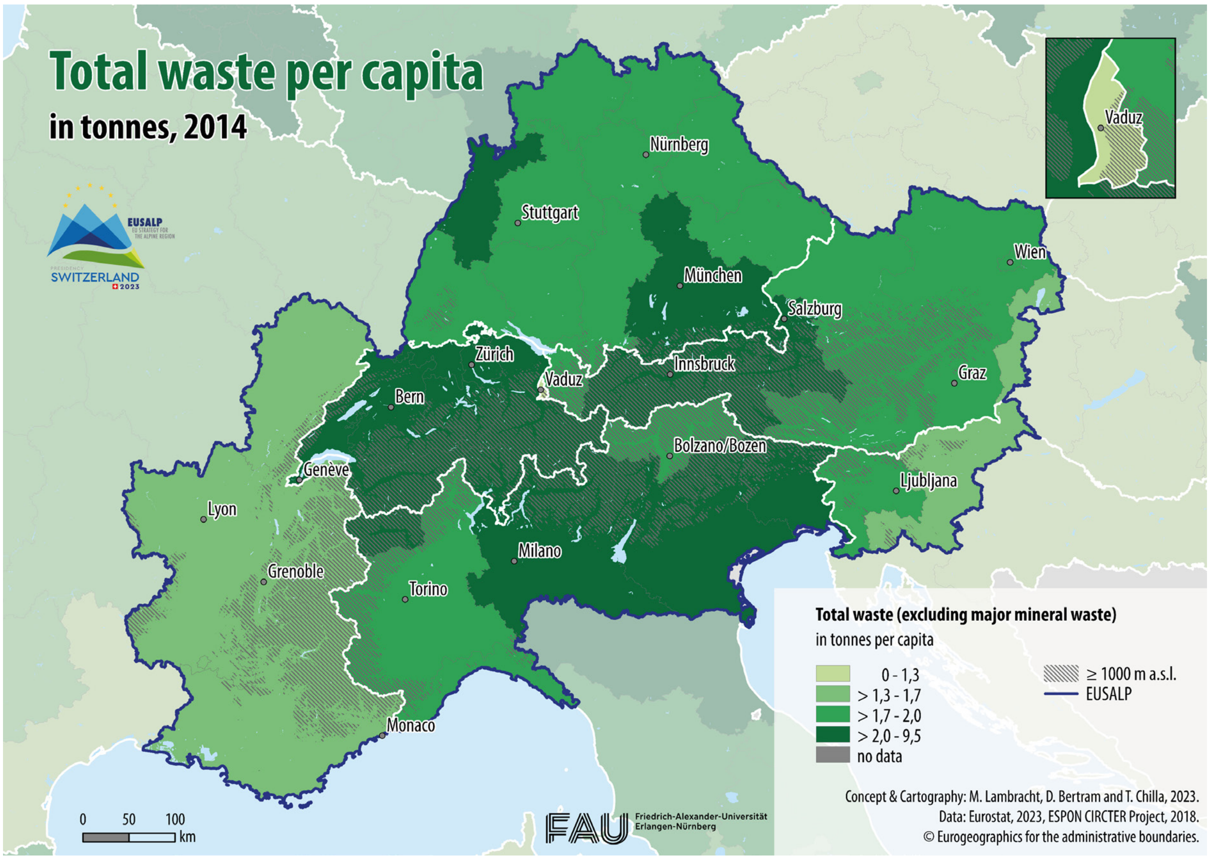

Fig. 6 Total waste per capita

Indicator/Methodology:

Fig 6 shows the total waste generation (excluding major mineral wastes) in 2014 in metric tons. The data source is the ESPON CIRCTER project[7]. Waste excluding major mineral wastes serves as a proxy for trends in total waste production and treatment. It reflects general trends more accurately than total waste statistics and improves comparability between countries. Waste excluding major mineral waste reflects waste originating from all economic sectors and households, thus including those generated from both production and consumption. It does not include mineral waste and soil, 90% of which comes from the mining and construction sector.

Description:

The cross-cutting priority of boosting circular economy aims, among other things, at waste reduction and valorisation, innovative waste management solutions and the extension of product life cycles. It is hardly possible to find relevant data on this field that is available at a fine spatial scale and for the different countries involved. The ESPON CIRCTER project is one of the very few exceptions, that provides approximate data at a fine scale. Fig. 6 visualises the amount of waste per inhabitant. The pattern shows that the quantities of waste are at least not smaller than beyond the Alps. This might be due to the higher number of tourists and of the strong presence of the production sector. It shows the relevance of this issue for the Alpine region in particular, which is another common challenge. Moreover, it highlights the need for a better availability of fine-scale data for the Alpine region.

7 https://www.espon.eu/circular-economy

Friedrich-Alexander-Universität
Erlangen-Nürnberg

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