

ClimProSud

Numerical based urban bio-climate analysis for the Pro Sud region / Luxembourg.



Inspiration

A general consensus within the scientific community is that climate change will not only manifest in increasing air temperatures, but also through an intensification of extreme events. More specifically climate change poses significant challenges for cities, as they are often densely populated areas with high levels of greenhouse gas emissions and vulnerable to the impacts of climate change, such as air pollution, extreme weather events, and heatwaves. Cities are also important contributors to climate change, accounting for around 70% of global greenhouse gas emissions. The purpose of the ClimProSud project is an assessment of the urban bio-climate that will improve our understanding of the impacts of urbanization on the local climate and how this, in turn, affects human health, the natural environment, and urban infrastructure.

Innovation

The ClimProSud project has the ambition to provide urban climate information at impact-relevant spatial and temporal scales for the southern region of Luxembourg. Cities play a critical role in addressing climate change, and their actions especially in the field of urban planning can have significant impacts on global greenhouse gas emissions and on the resilience of urban communities. LIST researchers teamed up with our long-standing cooperation partner Geo-Net (GmbH, Hannover, Germany) to deliver urban planning information at a spatial resolution of 5m for the southern part of Luxembourg. Based on national regional climate projections performed by LIST, the future climate conditions of the region will be in cooperated in this study.

Impact

The urban bio-climate assessment will address a wide range of impacts on urban areas and communities in the southern region of Luxembourg including:

- Improved urban planning and design: Project results will be provided to urban planners, leading to more sustainable and resilient cities. This will include the design of urban green and blue infrastructure spaces, as well as the assessment of cold air production areas and cold air corridors for a better city ventilation.
- Enhanced resilience to climate change: We will identify areas and communities that are most vulnerable to the impacts of climate change, such as flooding, extreme heat, or air pollution, and help develop strategies to improve resilience and reduce risks.
- Health benefits: By identifying areas of high thermal stress levels, our urban bio-climate assessments will improve the knowledge base for public health interventions to protect residents from the negative impacts of urban environmental conditions.
- Economic benefits: Improved urban planning and design can lead to economic benefits, such as increased property values, improved air quality, and reduced energy costs.

Overall, the ClimProSud project will help cities to better understand and address the challenges of climate change, leading to more sustainable, resilient, and healthy urban environments.

Partenaires

GEO-NET Umweltconsulting GmbH (DE)

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