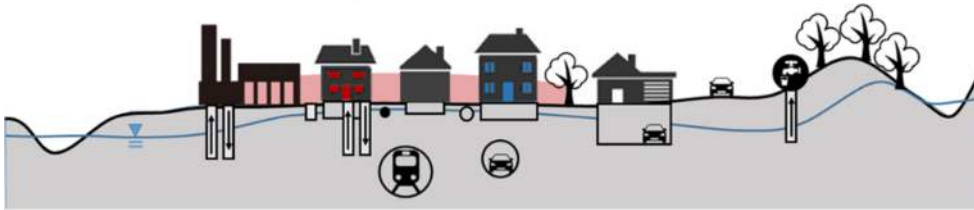




MARGIN Project

Thank you for participating in the MARGIN project survey on groundwater sustainability in urban areas. Your insights are crucial to understanding and addressing the impacts of climate change and urbanisation on groundwater resources.



Before you start, please note that:

MARGIN focuses on issues related to changes in the quantity and quality of groundwater resources, as well as issues related to ecosystem health; its first approach does not consider hydrochemical issues, groundwater pollution and impacts on groundwater from agriculture.

Please answer the questions in detail to help us develop effective solutions.

Thank you for your valuable contribution.

Funding: MARGIN is co-financed by the European Regional Development Fund through the Interreg Alpine Space programme. The project total budget is 2.985.083,95 € with an ERDF Co-financing rate of 75 %. Please visit the project page for more information: [MARGIN Project](#)

Section A: Knowledge of existing groundwater data

Question 1: Participant Information

Do you agree to share your personal data for the purpose of this survey?

- ☐ No, I prefer to remain anonymous
- ☐ Yes

Name (Voluntary)

Institution

City name/country

Personal background/ profession

Contact information

City name/country

Question 2: Which of the following topics is relevant to your city?

Please rank its relevance for your city from 1 (low) to 5 (high). Please note that 0 = not affected / not relevant

High groundwater Levels

- Flooding cellars
-

- **Flooding of terrain by groundwater**

Low groundwater levels

- **Negative influence on utilisations**

*Info: Negative influences on utilisations may include impacts on pumping wells used for drinking water supply, industrial processes, or heat pump operations.

- **Land subsidence**

Thermal groundwater use

- **Heat energy planning**

-
- **Increasing groundwater temperatures through geothermal utilisations**

-
- **Decreasing groundwater temperatures / too low temperatures**

-
- **Interference (negative influence) management**

*Info: conflicts or restrictions of utilisation

Groundwater quality and ecosystem health

- Groundwater temperature
-

- Ecosystem analysis
-

- Groundwater quality
-

Others: Please specify other relevant topics.

Question 3: Who is dealing with groundwater related topics?

Which city departments are involved in groundwater issues or use groundwater data in your city?

- ☐ Climate and/or environmental
- ☐ Construction
- ☐ City Planning
- ☐ Urban drainage
- ☐ Energy planning
- ☐ Other

Other (Specify):

Are there other stakeholders involved in groundwater issues or use groundwater data in your city?

- ☐ Regional water management office
- ☐ Regional authority for environment
- ☐ National authorities
- ☐ Water supply services
- ☐ Other authorities/companies/industry

Other (Specify):

Question 4: Is the groundwater monitored in your city?

Please select:

- ☐ Yes
- ☐ No

Is there a main city department in charge of monitoring ?

- ☐ Yes, there is a main department
- ☐ No
- ☐ There are several departments

Please, specify which is the main city department

Please, specify which are the different city departments

Do other institutions conduct groundwater measurements?

- ☐ Regional/National authorities
- ☐ Water supply services
- ☐ Industry/companies
- ☐ Others:

Others:

Which data is collected?

- ☐ 1) Groundwater level time series
- ☐ 2) Groundwater temperature time series
- ☐ 3) Groundwater temperature vertical profiles
- ☐ 4) Ecosystem data
- ☐ 5) Chemical data, groundwater quality
- ☐ 6) Amount of water used / groundwater discharge / water demand
- ☐ 7) Climate observations / rainfall
- ☐ Others:

Please, specify:

Are these data digitally available?

- ☐ Yes, all
- ☐ Yes, partially
- ☐ None

Please introduce the which ones: (Enter the numbers from the previous list)

Are some of the data online available?

- ☐ Yes, all
- ☐ Yes, partially
- ☐ None

Please introduce the which ones : (Enter the numbers from the previous list)

Question 5: Do groundwater maps exist?

Please select one of the following options:

- ☐ Yes
- ☐ No

» Which maps exists?

Groundwater table contour maps

- ☐ 1) Average level
- ☐ 2) High level
- ☐ 3) Low level
- ☐ Other:

Other:

Hydrogeological maps

- ☐ 4) Groundwater bodies
- ☐ 5) Hydraulic conductivity /permeability coefficient
- ☐ 6) Permeability coefficient
- ☐ 7) Groundwater depth to surface
- ☐ 8) Aquifer thickness
- ☐ 9) Thickness of saturated zone
- ☐ 10) Basis of aquifer
- ☐ 11) Groundwater discharge
- ☐ Other:

Specify:

Groundwater temperature maps

☐ 12) Temperature maps

Are these data digitally available?

- ☐ Yes, all
- ☐ Yes, partially
- ☐ None

Please, specify: (Enter the numbers from the previous list)

Are some of the data online available?

- ☐ Yes, all
- ☐ Yes, partially
- ☐ None

Please, specify: (Enter the numbers from the previous list)

Section B: Existing strategies and measures

Question 6: Strategies and Measures

Based on your priorities in Section A-Q2, what strategies and measures will you use to leverage existing potentials and address current problems and future challenges?

- ☐ Sponge city concept / rain water management
- ☐ Building design criteria (e.g. reduction of impounding through orientation of subsurface building)
- ☐ Maximum groundwater impounding
- ☐ Maximum temperature thresholds or spread
- ☐ Restrictions for operation of systems
- ☐ Numerical modelling (e.g. calculation of groundwater impounding for large constructions)
- ☐ Thermal utilisations of groundwater in district heat planning
- ☐ Climate adaptation concept
- ☐ Potential analysis for thermal utilisation of groundwater
- ☐ Water level criteria for constructions
- ☐ Other:

Specify:

Question 7: Benefits and effectiveness

Please describe the benefits and effectiveness of chosen strategies and measures

Are effectiveness and benefits measured?

☐ Yes

☐ No

How?

Who is responsible for the implementation of above strategies and measures in your city?

Can you identify gaps in existing strategies that significantly affect the effectiveness and benefits of the mitigation measures? Please, describe

Thank you for your valuable input to the MARGIN Survey! Your feedback is critical in our understanding and addressing groundwater sustainability in urban areas, in the context of climate change and urbanisation. We appreciate your time and contribution to this important initiative.

Please feel free to provide any additional comments, suggestions, or feedback in the space below.
