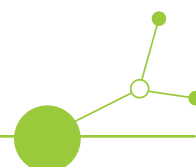


ZEB4ZEN

Zero energy buildings for zero
Energy neighbourhoods



Version 1

01 2026





CITIZEN'S INVOLVEMENT

Report on Deliverable 4.1.1.1

A. Introduction

This report presents the results of a detailed citizen survey carried out in the four pilot cities. The questionnaire consisted of a shared set of core questions administered across all pilot cities. These common questions explored key areas such as climate change perception, energy efficiency in buildings, environmental awareness, sustainable mobility, energy poverty, and citizens' willingness to participate in local initiatives and can be found in Annex A.1. The goal of this structure was to enable cross-city comparisons and a broader understanding of the different social and environmental settings. To complement this shared framework, each city integrated a city-specific section tailored to its local context and challenges. The city specific questions are listed in Annex A.2-A.5.

In this report, key findings from each pilot city are presented individually and then compared to highlight shared trends, unique concerns, and potential pathways for action.



B. Specific Findings

1. Quedlinburg

In Quedlinburg the questionnaire was made available in both digital and analog formats and was completed by a total of 15 participants. The respondents represent a wide range of age groups, with the strongest representation among those aged 31-45 (33%) and those over 60 (33%). Participants aged 46-60 accounted for a smaller but notable share (20%), while younger age groups under 18 and between 18-30 were represented by a small proportion. In terms of gender, slightly more than half of the respondents identified as female (53%), while 40% identified as male. One person preferred not to disclose their gender (7%). A majority of the participants reported having completed university or higher education (60%), followed by vocational or technical education (33%), while one person indicated secondary education as their highest level.

Most respondents were currently employed (60%), while a significant share were retired (27%). One student participated and one respondent selected 'other employment status'. None of the participants reported being unemployed. All respondents stated that they live within the city walls or historic center and most have been living in the city for more than ten years (73%), indicating a predominantly long-term resident population, while smaller shares reported living there for less than one year (20%) or between one and five years (7%).

Concern about climate change was generally high. Most participants described themselves as very (40%) or extremely concerned (33.3%), while the remainder reported moderate concern (27%). Similarly, a large majority felt that climate change is affecting their city either strongly (53%) or moderately (40%), with only a small share perceiving a slight effect (7%). As depicted in Figure 1, urban heat was identified as a particularly relevant environmental problem (73%), followed by droughts (67%). Air pollution and loss of biodiversity were each mentioned by just over half of the respondents (53%), while flooding was considered relevant by one third (33%). Noise (13%) and waste management (20%) were less frequently identified.

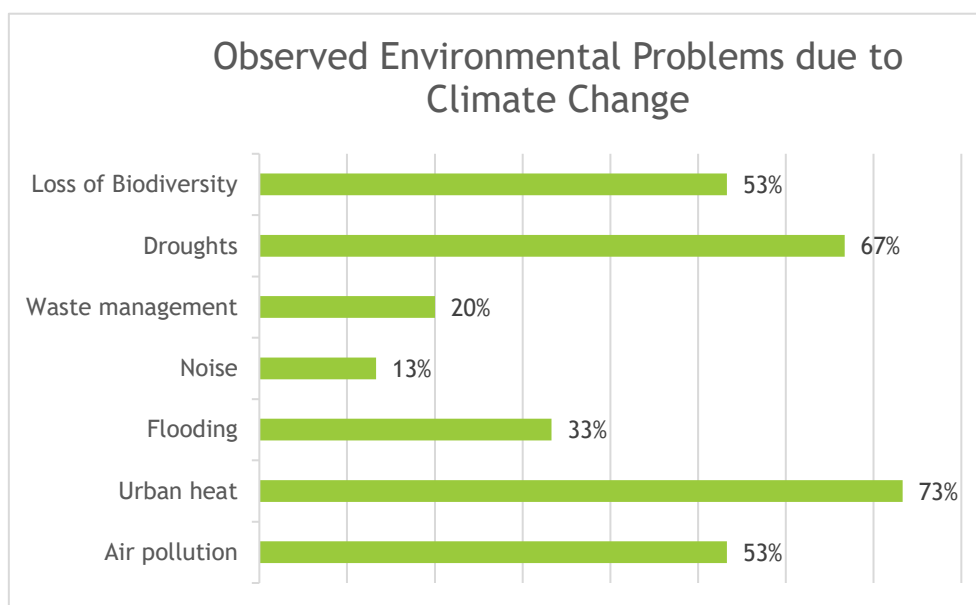


Figure 1, Answers to the question: "Which of the following environmental problems do you consider relevant for your city? (Multiple Selection)" in Quedlinburg



When asked about energy-efficient renovation, opinions were mixed. Some respondents had already considered renovating their building to improve energy efficiency (39%), while nearly half were unsure (46%), and a smaller group had not considered it (15%). Figure 2 summarizes the most frequently cited barriers to energy efficient renovation. Most often answered were living in a rented building (60%), conservation restrictions (33%), high costs (27%), and unresolved or complex property-related issues (27%). A lack of information (13%) and low prioritization (7%) were mentioned less often. Awareness of support programs or financial incentives was limited, with similar shares indicating that they were aware (36%) or unsure (36%), and just under one third stating they were not aware (29%). If financial support were available, a quarter of respondents said they would consider renovating (25%), while most remained unsure (58%). The ability to cover renovation costs varied, but uncertainty was dominant (46%). Most participants did not consider their household to be energy poor (67%), though a notable minority did (20%), and some were unsure (13%). Awareness of support programs for energy-poor households was similarly low, with two thirds stating they were not aware (67%).

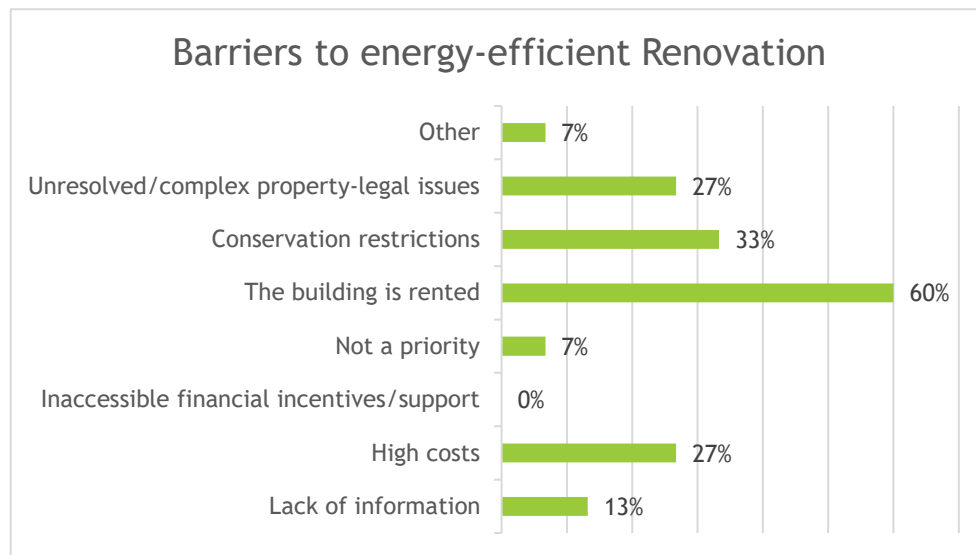


Figure 2, Answers to the question: “What is preventing you from implementing an energy-efficient renovation of your building? (Multiple Selection)” in Quedlinburg

The general environmental quality of the city was most often rated as acceptable (53%) or good (33%), while a smaller share considered it poor (13%). Over the past five years, most respondents observed longer drought periods (87%) and hotter summers or urban heat effects (73%), followed by more frequent heavy rainfall or flooding (53%).

Walking was the most common mode of transport within the city (100%), followed by cycling (60%) and personal car use (47%).

Participation and engagement in events and activities related to the environment showed moderate levels. Half of the respondents had previously participated in local environmental initiatives (50%), and half expressed willingness to do so in the future (50%), while others were undecided (36%). Finally, awareness of existing climate or environmental activities in the city was mostly described as moderate (36%) or low (43% combined).



2. Palmanova

In Palmanova, a total of 99 residents participated in the survey between 29th of October and 26th of November 2025. The questionnaire was distributed exclusively in digital form via Google Forms and promoted through the municipality's website and social media channels. Despite the digital-only format, respondents from older age groups were well represented (41%). Approximately two thirds of participants reported living within the city walls or historic center, while one third reside outside this area.

The age distribution shows a strong representation of older residents. Respondents aged over 60 account for the largest share (41%), followed by those aged 46-60 (25%) and 31-45 (22%). Younger age groups are less represented, with 11% aged 18-30 and 1% under 18. The Gender distribution is relatively balanced. More than half of the respondents report vocational or technical education (52%), while 37.8% hold a university or higher education degree. Secondary and primary education are reported by 9% in total. In terms of employment status, the majority are employed (57.1%) or retired (37.4%), with smaller shares of students and unemployed respondents (6% in total). Most respondents report long-term residence in the city. More than three quarters (75.5%) have lived in Palmanova for over ten years, while shorter residence durations are reported less frequently.

Levels of concern about climate change vary, with the majority expressing moderate to high concern. A total of 64% report being very or extremely concerned. While 22% indicate moderate concern, smaller shares report being slightly or not concerned at all (13% in total). When asked whether climate change affects their city, most respondents report moderate or strong effects (77% combined). Respondents identify several environmental problems as relevant for Palmanova, as shown in Figure 3. Waste management is most frequently selected (65%), followed by air pollution (56%), urban heat (46%), and biodiversity loss (40%). Flooding, drought, and noise are mentioned less frequently but still by notable shares of respondents.

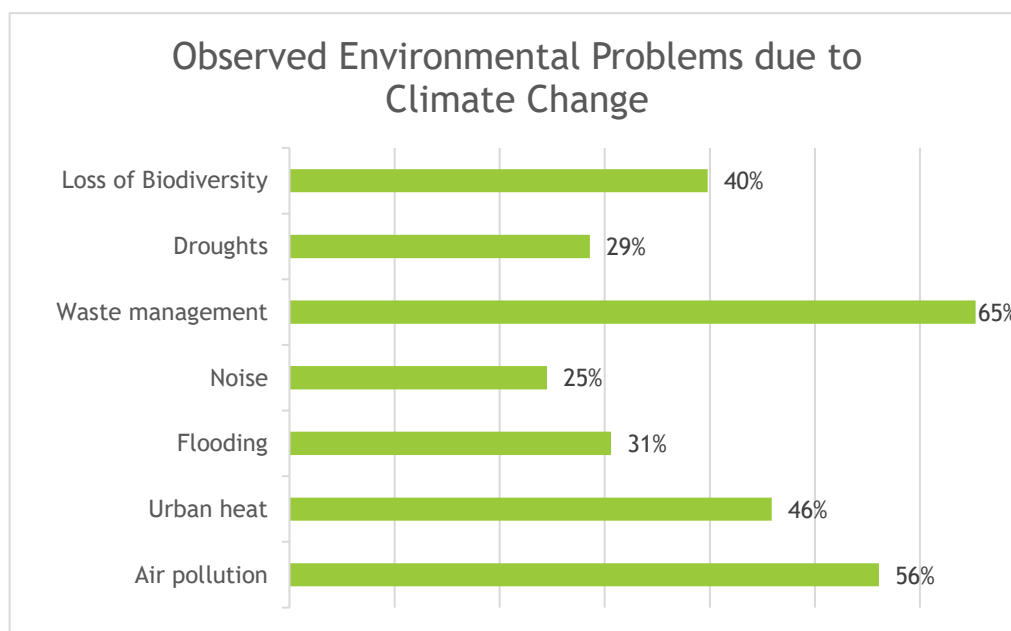


Figure 3, Answers to the question: "Which of the following environmental problems do you consider relevant for your city? (Multiple Selection)" in Palmanova

A majority of respondents (71%) report having considered renovating their home or building to improve energy efficiency, while 21% have not considered such measures and 8% are unsure. Figure 4 shows that high costs are the most frequently selected obstacle to renovation (66%), followed by conservation restrictions (44%). Inaccessible financial incentives (24%) and lack of information (13%) are also reported, while fewer



respondents select rental status, legal issues, or renovation not being a priority. Awareness of financial incentives for energy renovation or renewable energy installation is relatively high, with 74% reporting that they know of such incentives. However, one fifth (20%) report not being aware of such programs. When asked about renovation under the condition of financial support, 67% respond positively and 27% chose to answer with 'maybe'.

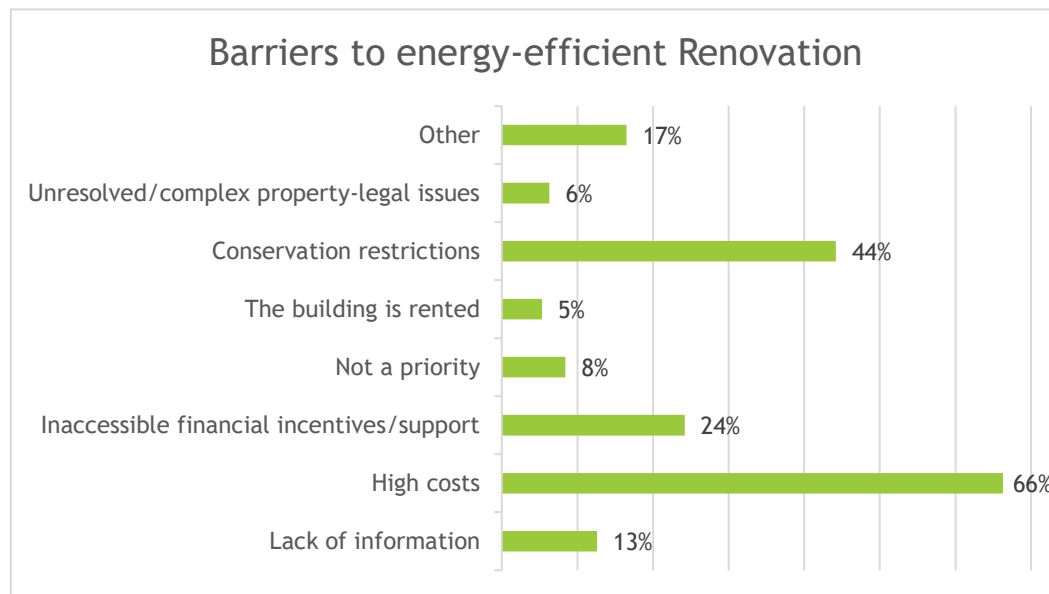


Figure 4, Answers to the question: “What is preventing you from implementing an energy-efficient renovation of your building? (Multiple Selection)” in Palmanova

Reported ability to contribute financially varies. The most common response is the ability to cover around 50% of costs (33%), followed by lower contribution levels or uncertainty. Energy poverty is reported by 11% of respondents, while 85% do not consider their household energy poor. Awareness of support programs for energy-poor citizens is limited, with 62% reporting no awareness.

Perceptions of overall environmental quality are predominantly moderate to positive. Most respondents rate environmental quality as acceptable (42%) or good (37%), while fewer report poor or very poor conditions. Regarding observed changes over the past five years, hotter summers are most frequently reported (80%), followed by more frequent heavy rainfall or flooding (60%). Longer drought periods and changes in air quality or biodiversity are reported less frequently. The survey answers indicate that walking is the most common mode of transport within the city (87%). Bicycle use is reported by 26% of respondents, while 39% report using a personal car. Public transportation is not selected by respondents.

About one fourth of respondents report participation in environmental events or initiatives. Willingness to participate in future community-based environmental actions is higher, with most respondents selecting 'yes' or 'maybe'. Self-assessed levels of information about local climate or environmental activities are predominantly low to moderate. Open-ended responses concerning sustainability improvements frequently mention waste management, green spaces, renewable energy, mobility, and traffic reduction. Similar themes appear in responses related to challenges for climate resilience, including energy efficiency, renewable energy, administrative processes, urban greenery, and traffic management.

In Palmanova 89% of respondents report interest in solutions that enable the use of rooftop photovoltaic systems within the city walls. Additionally, 72% indicate that the city's historical character is very important when considering energy-efficient or climate-adaptation measures.



3. Karlovac

In Karlovac, the questionnaire was conducted exclusively in digital form using Microsoft Forms and was promoted by the Municipality of Karlovac through the official website and social media channels. A total of 53 citizens participated and despite the digital-only format, participation by older age groups was substantial, with 56.6% of respondents aged 46 or older.

The demographic profile of respondents shows a predominance of middle-aged and older adults. The largest age group was 46-60 years (51%), followed by those aged 31-45 (36%). Younger adults aged 18-30 accounted for a smaller share (8%), such as respondents over 60 (6%). Women were more strongly represented (70%), compared to men (28%), with a small percentage preferring not to identify as either (2%). Educational completion was very high, with a large majority holding a university or higher education degree (83%). Only small proportions reported secondary (9%) or vocational/technical education (8%). Nearly all respondents were employed (98%), with only a marginal share retired (2%). Long-term residency was a defining characteristic: most participants had lived in the city for more than ten years (92%). Only 13% of respondents lived within the city walls, while the vast majority lived outside the historic center (87%).

Regarding environmental awareness, concern about climate change was present but more moderate than intense. Most respondents described themselves as moderately (40%) or very concerned (32%), while smaller shares reported slight concern (19%) or no concern at all (6%). Only a few indicated extreme concern (4%). A similar pattern appeared in perceptions of local climate impacts: over half believed climate change affects the city moderately (51%), while about one quarter perceived strong effects (26%). Smaller proportions perceived only slight effects (15%) or none at all (4%), and some were uncertain (4%). As shown in Figure 5 flooding emerged as the most frequently cited local environmental issue (28%), followed by waste management (20%) and air pollution (15%). Urban heat (12%), drought (10%), biodiversity loss (8%), and noise (6%) were mentioned less often.

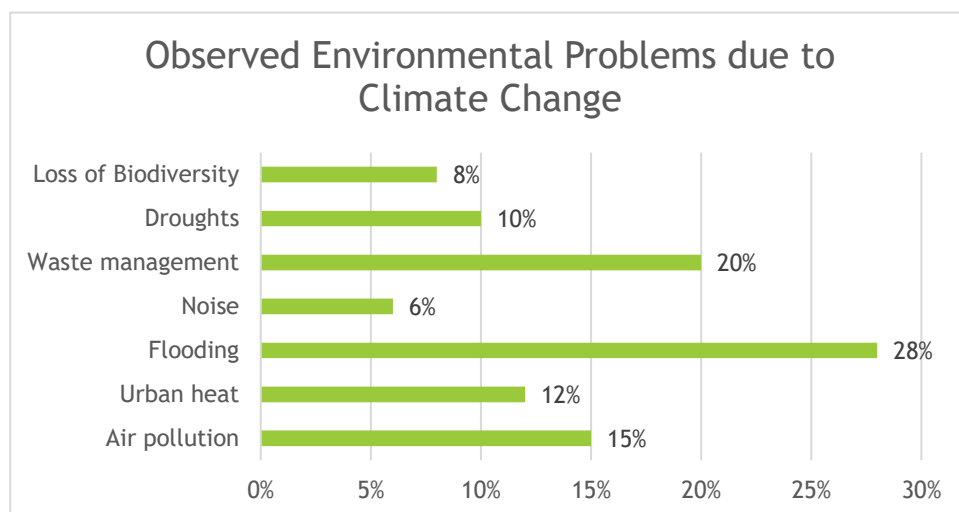


Figure 5, Answers to the question: "Which of the following environmental problems do you consider relevant for your city? (Multiple Selection)" in Karlovac

Awareness and engagement with energy efficiency measures were notably high. A very large majority had already considered renovating their home or building to improve energy efficiency (92%). **Error! Reference source not found.** indicates that high costs were the most commonly identified obstacle (44%), followed by limited access to financial incentives (26%) and lack of information (12%). Conservation restrictions (7%) and property-legal issues (6%) played a minor role. Awareness of financial incentives for energy renovation or renewable energy was relatively strong (70%), though one quarter remained unsure (25%). If financial



support were available, most respondents stated they would be willing to renovate (85%), while only 2% would not. In terms of financial capacity, respondents most commonly estimated they could cover 25% (34%) or 50% (30%) of renovation costs, while uncertainty remained for a notable group (17%). Most respondents did not consider themselves energy poor (81%), though a minority did (11%), and awareness of support programs for energy-poor households was limited with 21% of the respondents being aware of such incentives.

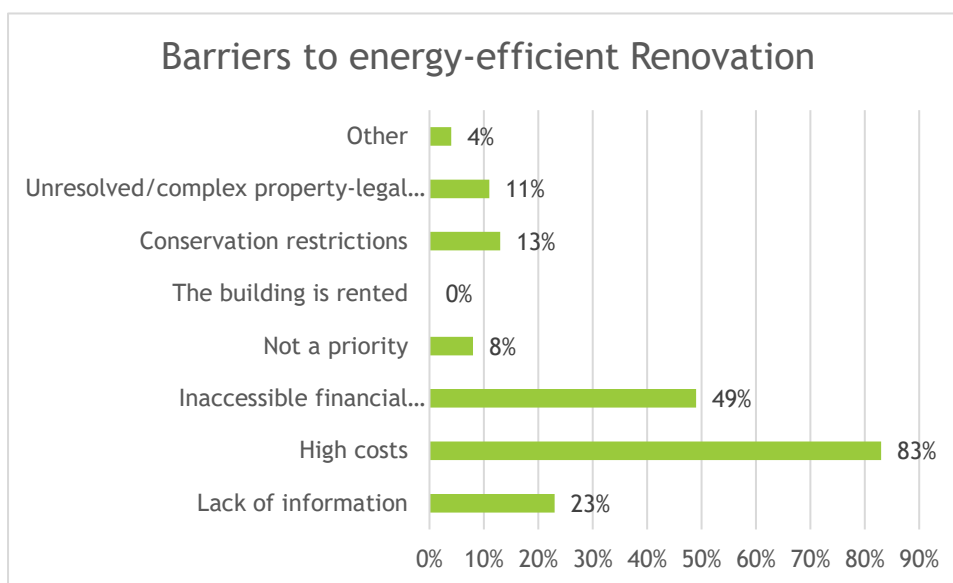


Figure 6, Answers to the question: “What is preventing you from implementing an energy-efficient renovation of your building? (Multiple Selection)” in Karlovac

Perceived environmental quality in the city was generally positive. Most respondents rated it as acceptable (45%) or good (40%), with a smaller group describing it as excellent (11%). Very poor or poor ratings were rare (4% combined). Observed changes over the past five years were dominated by more frequent heavy rainfall or flooding (68%) and hotter summers (62%), followed by longer drought periods (47%) and poorer air quality (34%). Mobility patterns reflected a strong reliance on walking (75%) and private cars (74%), while cycling was less common (30%) and public transport use was very small (2%).

Participation in environmental initiatives was moderate, with 40% having previously participated and 60% not. Willingness to engage in future actions was high, with many respondents either willing (38%) or undecided but open (42%). Most felt moderately informed about environmental activities (58%), while smaller shares felt slightly informed (25%) or very/extremely informed (12%).

Preference for future initiatives focused strongly on water management measures (68%), bicycle lanes and pedestrian zones (66%), energy renovation of buildings (66%), and renewable energy installation (64%). Open responses emphasized floods, heat waves, water quality, insufficient awareness, financial constraints, and uncoordinated urban planning as major challenges.



4. Zamość

The respondent group in Zamość is predominantly middle-aged and older. The largest share belongs to the 46-60 age group (42%), followed by residents over 60 (32%) and those aged 31-45 (26%). No respondents are under 30. Gender distribution is balanced, with a slight female majority (53% female; 47% male). Educational background is comparatively high: 58% have completed university or higher education and 37% vocational or technical education, while only 5% report secondary education. All respondents are currently employed (100%). Regarding residence patterns, 53% have lived in Zamość for more than ten years, while 47% have moved there within the last decade. Housing location is almost evenly divided, with 47% living inside the historic center and 53% outside it.

Concern about climate change is generally moderate to high. A combined 69% report being moderately (32%) or very concerned (37%), while 21% are slightly concerned and 11% not concerned at all. None describe themselves as extremely concerned. Perceptions of local impacts are mixed but significant: 37% believe climate change is moderately affecting the city and another 37% strongly affecting it, while 26% remain uncertain. As shown in Figure 7, urban heat emerges as the most relevant environmental issue (79%). Waste management (58%), air pollution (47%), and noise (42%) are also frequently mentioned. Flooding is perceived as relevant by only 5%, and droughts by 16%.

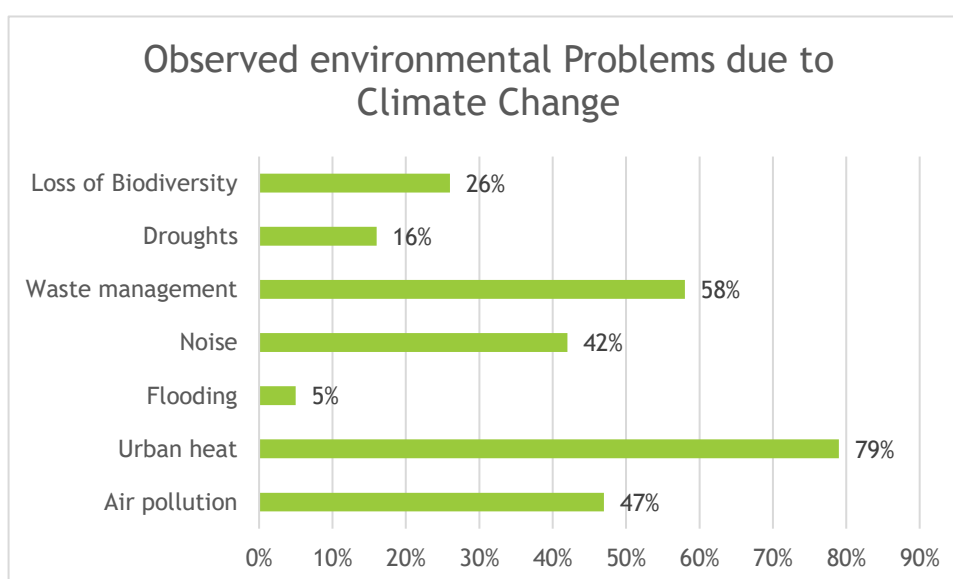


Figure 7, Answers to the question: "Which of the following environmental problems do you consider relevant for your city? (Multiple Selection)" in Zamość

Interest in energy-efficient renovation is high: 89% have considered improving their building's energy performance. However, implementation is strongly constrained by economic barriers, as depicted in Figure 8, high costs are cited universally (100%), and 74% report inaccessible financial incentives. Lack of information affects 37% of respondents. Although 53% are aware of existing support programs, 32% remain unsure. If financial support were available, 79% would proceed with renovation and 16% would consider it. Financial self-capacity is limited: 58% can cover 25-50% of costs, 10% or less is possible for 10%, and 32% are



unsure. Energy poverty is not widely perceived (84% do not consider themselves energy poor), yet awareness of targeted support schemes for energy-poor households is very low (5% familiar; 84% not familiar).

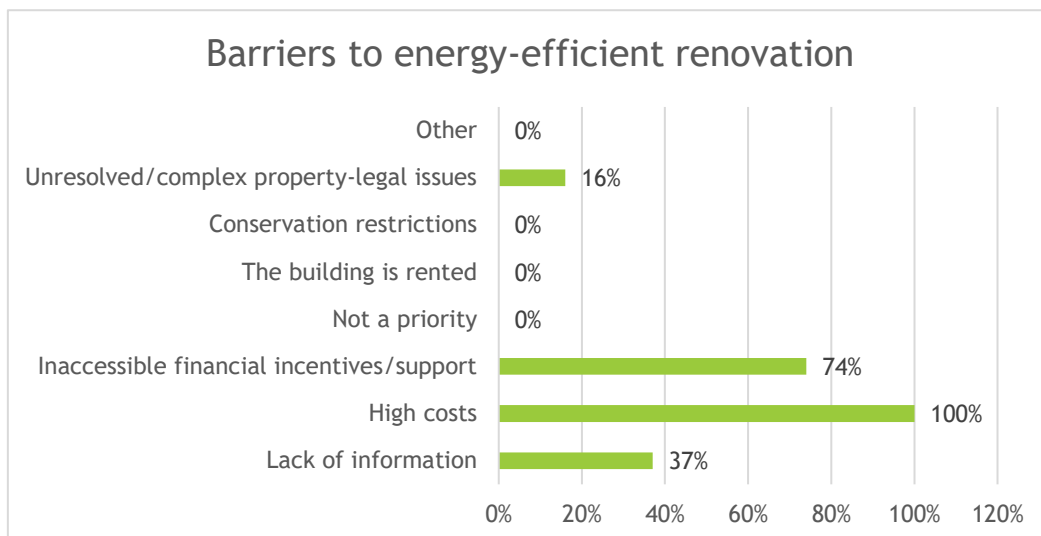


Figure 8, Answers to the question: “What is preventing you from implementing an energy-efficient renovation of your building? (Multiple Selection)” in Zamość

Environmental quality is rated positively: 74% describe it as good and 26% as acceptable, with no negative ratings. Recent climate-related changes are widely observed. Hotter summers and more frequent heavy rainfall are each reported by 79%, while 42% note longer drought periods. Only 5% perceive no visible changes. Mobility patterns are dominated by walking (95%), followed by personal car use (32%) and cycling (26%). Public transport plays a minor role (5%).

Past participation in environmental initiatives is moderate (37%), but willingness to engage is higher (47% yes; 32% maybe). Most respondents feel moderately informed about environmental activities (68%). Future priorities center on expanding green areas (63%), energy renovation (58%), and bicycle lanes and pedestrian zones (53%). Open responses emphasize planting more trees, limiting car traffic in the Old Town—provided changes are clearly communicated—and securing more funding. Perceived challenges to climate resilience focus primarily on financial constraints, lack of greenery, urban heat islands, limited public awareness, and insufficient resources or expertise.



C. Comparison of Results

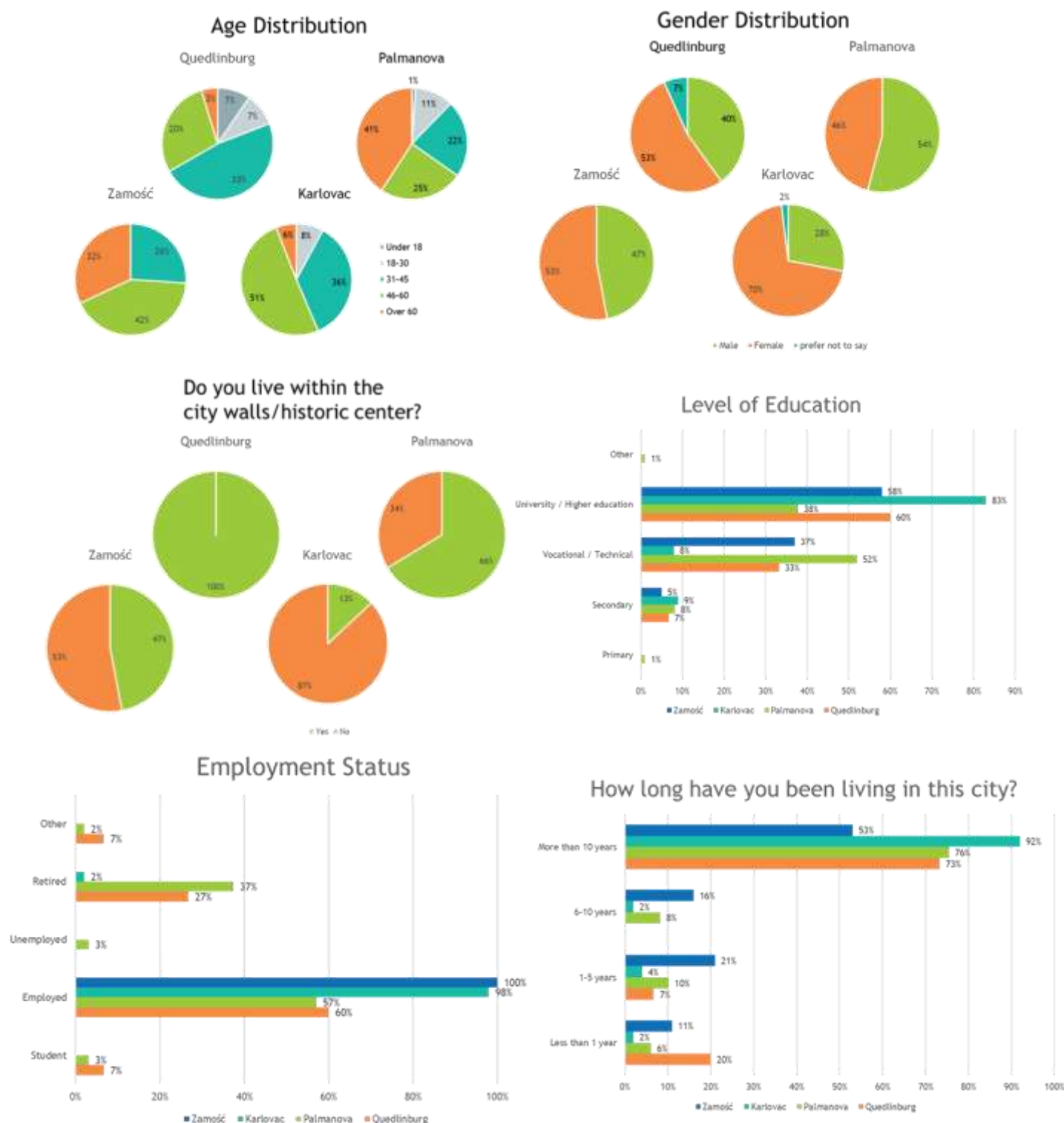


Figure 9, Summary of Results for Section One of the Questionnaire



As summarized in Figure 9, all four cities are characterized by a comparatively stable resident base, as in each case the largest share of respondents has lived in the city for more than ten years, most notably in Karlovac (92%). In Zamość, a majority (53%) also report residence exceeding a decade, although shorter residence periods (1-5 years: 21%; less than one year: 11%) are more prominent there than in Karlovac. Employment patterns are broadly similar, with high levels of employment across all four cities. Karlovac stands out with an exceptionally high share of employed respondents (98%), while Palmanova shows a comparatively large retired population (37%). Zamość differs in that all respondents are employed (100%), with no students, unemployed, or retired participants represented. In terms of age structure, significant differences emerge. Palmanova has a strong aging profile, with 41% of respondents over 60, whereas Karlovac is dominated by the 46-60 age group (51%). Quedlinburg concentrates more strongly in the 31-45 group, while Zamość displays a mature but relatively balanced structure, led by the 46-60 group (42%), followed by those over 60 (32%) and 31-45 (26%), with no respondents under 30. Gender distribution also varies: Quedlinburg and Karlovac are female-dominated, especially Karlovac (70% female), while Palmanova is more male-skewed. Zamość presents near parity, with a slight female majority (53%).

Educational attainment further differentiates the cases: Karlovac reports the highest proportion of university-educated respondents (83%), Palmanova has a notably high share of vocational or technical education (52%), and Zamość combines a strong university educated group (58%) with a substantial vocational/technical share (37%). Regarding residential location, Quedlinburg's respondents all live within the historic core, Karlovac's predominantly outside (87%), Palmanova occupies a middle position, and Zamość is almost evenly divided between residents inside (47%) and outside (53%) the historic center.

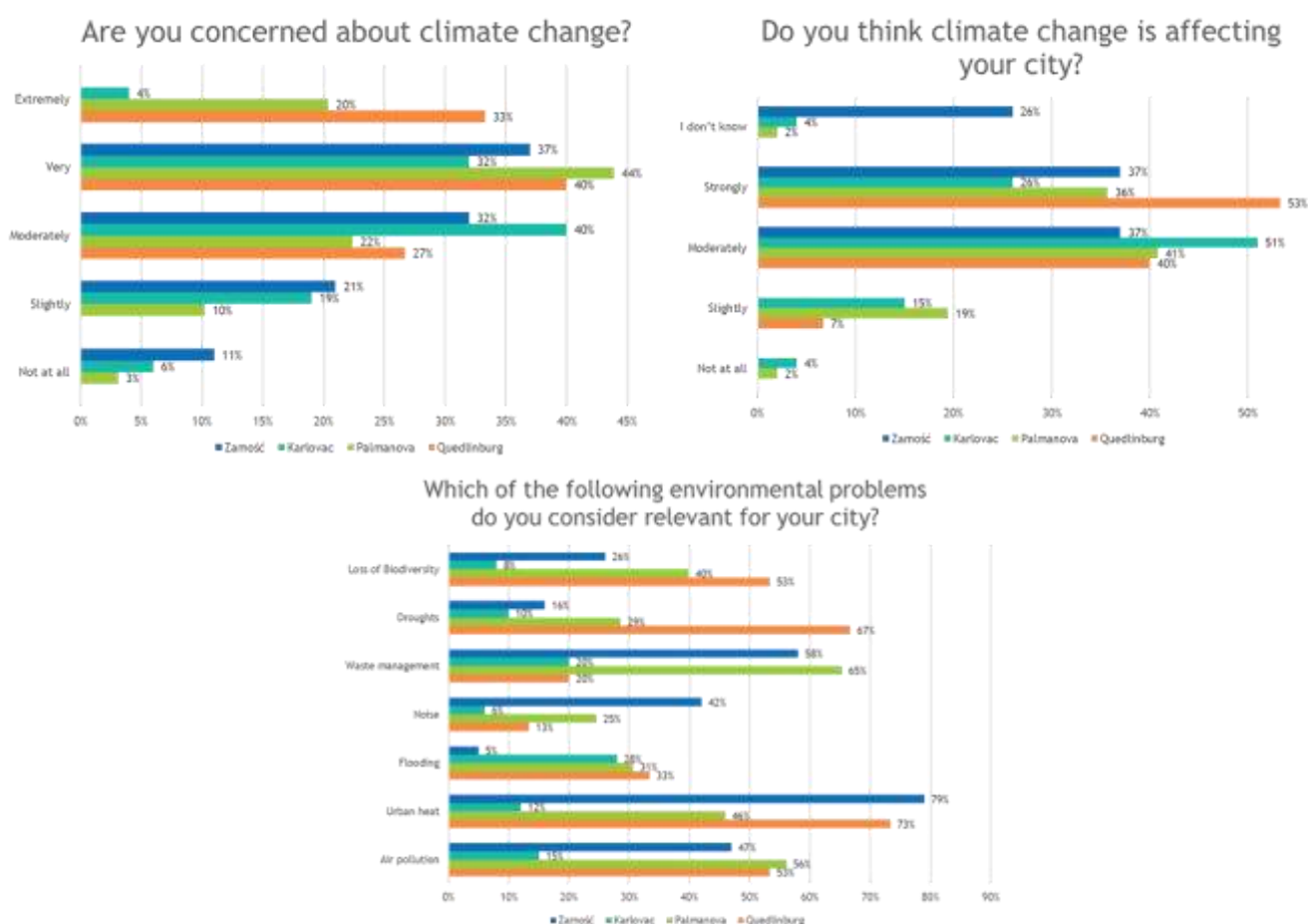


Figure 10, Summary of Results for Section Two of the Questionnaire

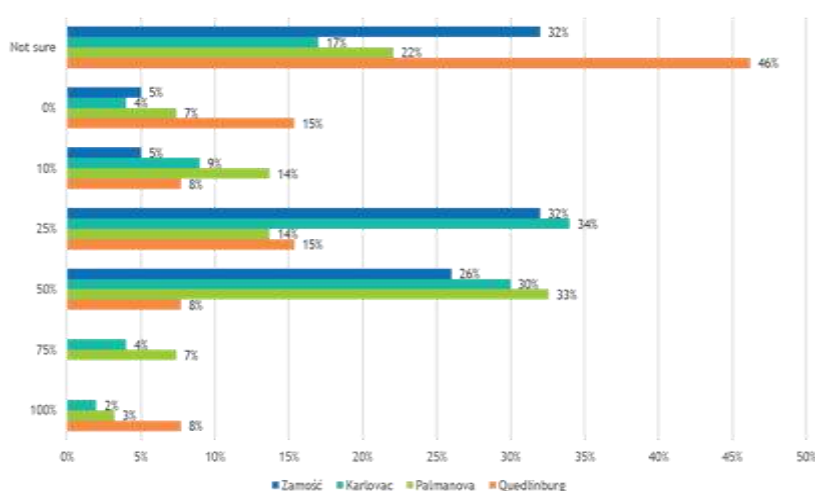


Figure 10 depicts a shared recognition of climate change as a relevant issue, but with clear differences in intensity of concern and perceived local impacts. In all four cities, the majority of respondents report being at least moderately concerned about climate change. Quedlinburg stands out for its strongest concern, with nearly three-quarters describing themselves as very or extremely concerned and none reporting low concern. Palmanova shows a similar but slightly more moderate pattern, with concern concentrated in the “very” category and fewer respondents answering that they are extremely concerned. Karlovac, by contrast, presents a big share reporting only moderate or slight concern and very few expressing extreme concern. Zamość aligns more closely with this moderate pattern: while most respondents report moderate (32%) or very high concern (37%), none select “extremely,” and a noticeable minority express slight (21%) or no concern (11%).

What is preventing you from implementing an energy-efficient renovation of your building?



What percentage of the renovation costs/implementation costs for renewable energies could you cover yourself?



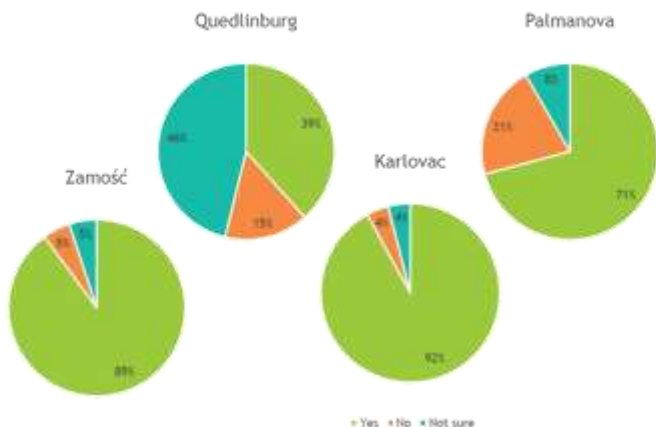
Perceptions of whether climate change is affecting the city show a similar structure. Respondents in all four cities largely agree that climate change is having at least a moderate impact. Quedlinburg again shows the strongest conviction, with a majority selecting “strongly.” Palmanova occupies a middle position, while Karlovac respondents most frequently select “moderately.” In Zamość, responses are divided between “moderately” (37%) and “strongly” (37%), although a relatively high share (26%) indicate uncertainty.

Regarding specific environmental problems, Quedlinburg respondents emphasize urban heat, droughts, air pollution, and biodiversity loss. Palmanova shares concerns about air pollution and flooding, while showing particularly strong concern for waste management. Karlovac reports much lower levels of concern across most environmental categories, with flooding standing out as the only issue perceived as relatively significant. In Zamość, urban heat and waste management are most frequently identified, followed by air pollution and noise.

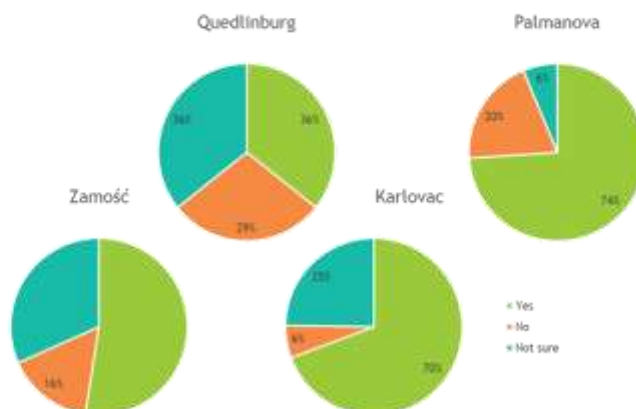
Figure 11, Summary of the Results for Section Three of the Questionnaire



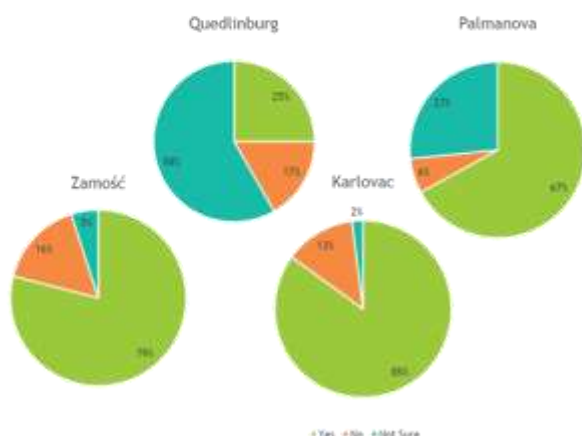
Have you ever considered renovating your home/building to improve energy efficiency?



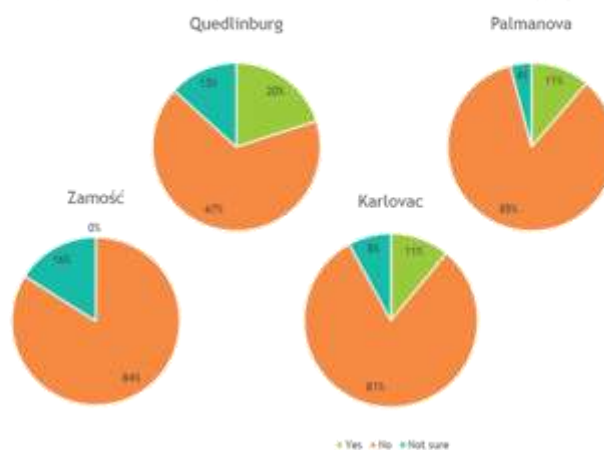
Are you aware of any support programs or financial incentives for energy-efficient building renovation or switching to renewable energy?



If financial support were available, would you consider renovating your home/building to improve energy efficiency?



Do you consider your household to be energy poor?



Are you familiar with support programs for energy-poor citizens in your city and/or country?

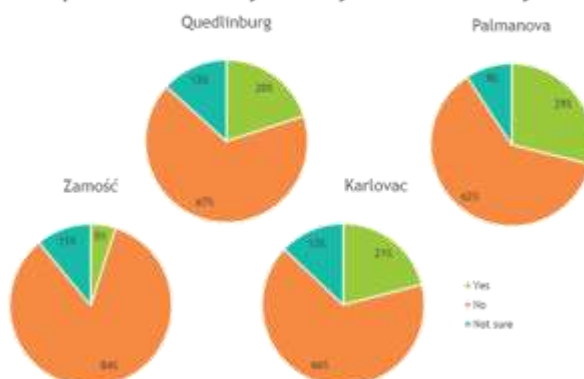


Figure 12, Continued summary of the Results for Section Three of the Questionnaire

Across Quedlinburg, Palmanova, Karlovac, and Zamość, responses reveal both a broadly shared interest in energy-efficient renovation and pronounced differences in commitment, constraints, and financial capacity as depicted in Figure 11 and Figure 12. Consideration of renovation is highest in Karlovac (92%) and Zamość (89%), followed by Palmanova (71%), whereas Quedlinburg shows a markedly lower share of affirmative responses (39%) and a high level of uncertainty (46%).



Barriers vary substantially. High costs are a central obstacle everywhere but differ in intensity: 27% in Quedlinburg, 66% in Palmanova, 83% in Karlovac, and 100% in Zamość. Inaccessible financial incentives are particularly strong in Karlovac (49%) and Zamość (74%) and Quedlinburg stands out for structural constraints, especially rented buildings (60%) and conservation restrictions (33%), with similar heritage-related concerns also visible in Palmanova (44%). Property-legal complexities are reported across all cities, ranging from 6% (Palmanova) to 27% (Quedlinburg). Lack of information is comparatively moderate in Quedlinburg and Palmanova (13% each), higher in Karlovac (23%), and the highest in Zamość (37%).

Awareness of support schemes mirrors these differences. Palmanova (74%) and Karlovac (70%) show high levels of awareness, while Zamość occupies an intermediate position (53%). Quedlinburg again records divided responses (36% yes; 36% not sure). This pattern is reflected in hypothetical willingness to renovate if financial support were available: strong affirmative responses in Karlovac (85%), Zamość (79%), and Palmanova (67%) contrast with a more hesitant profile in Quedlinburg (25% yes; 58% not sure). Financial self-capacity further differentiates the cases. The ability to cover 50% or more of costs is reported by 37% in Palmanova and 36% in Karlovac, compared to 16% in Quedlinburg and 26% in Zamość. A substantial share in Quedlinburg (46%) and Zamość (32%) remain uncertain about their financial capacity.

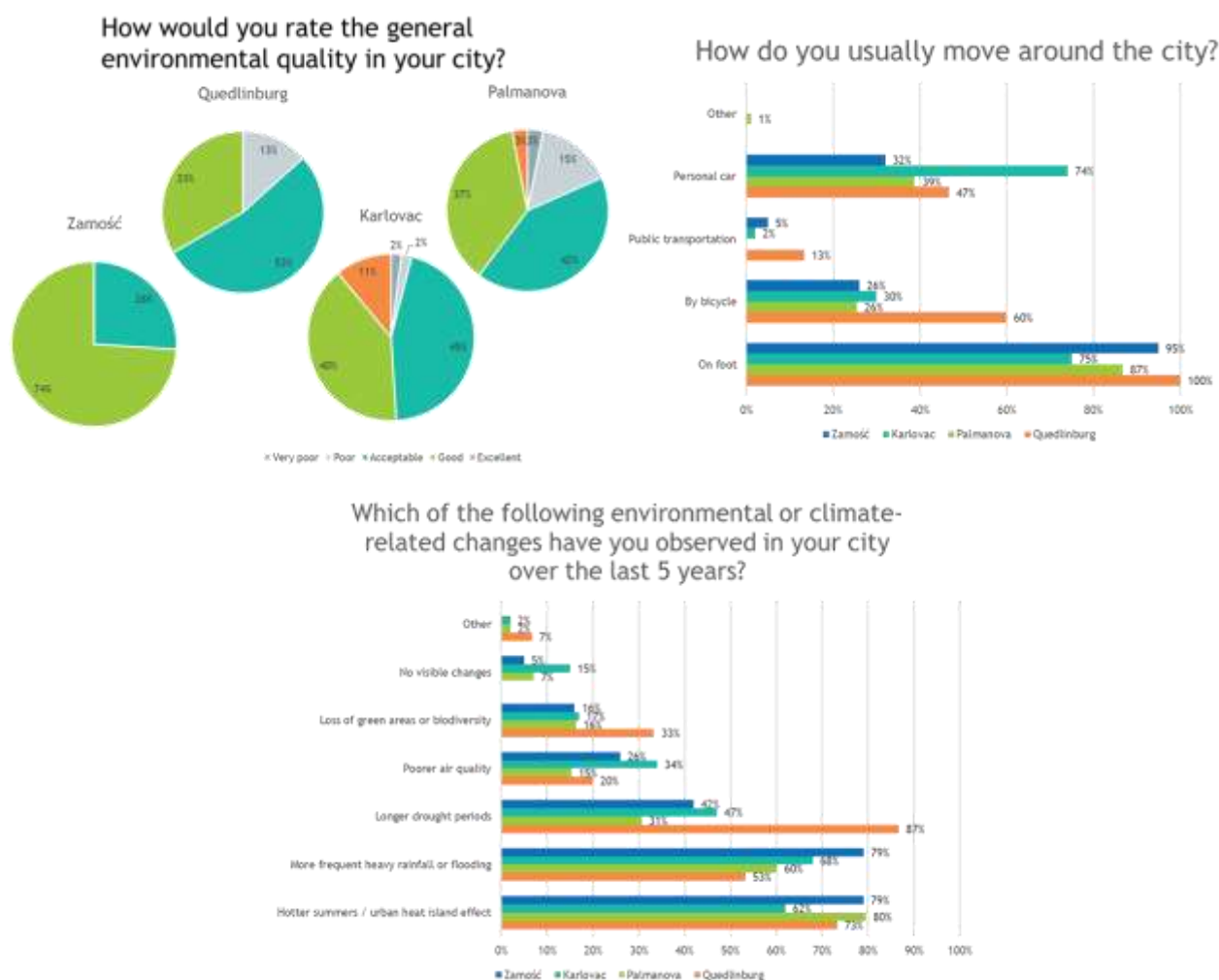
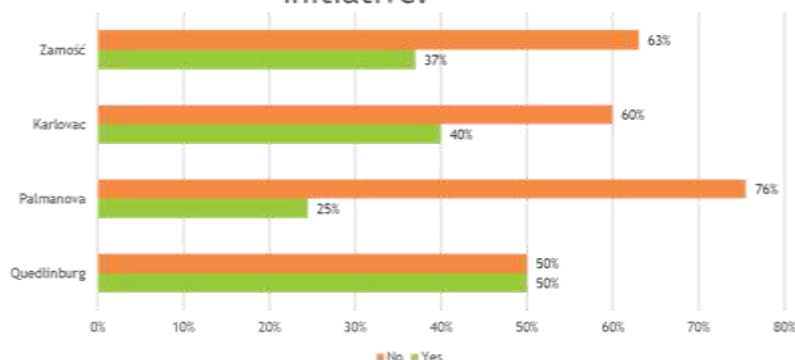


Figure 13, Summary of the Results for Section Four of the Questionnaire

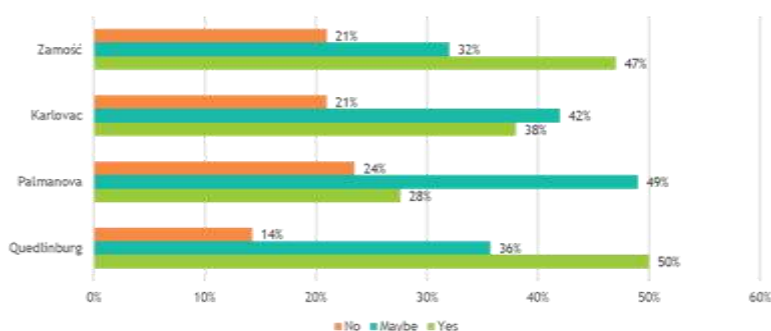


Despite these financial constraints, perceived energy poverty remains limited overall. While 20% in Quedlinburg and 11% in both Palmanova and Karlovac consider themselves energy poor, no respondents in Zamość do so (0%). Majorities in all cities - ranging from 67% in Quedlinburg to 85% in Palmanova - reject the classification. Nonetheless, familiarity with dedicated support programs for energy-poor households is consistently low, particularly in Zamość (5% aware; 84% unaware), but also limited in Quedlinburg (20%), Karlovac (21%), and Palmanova (29%).

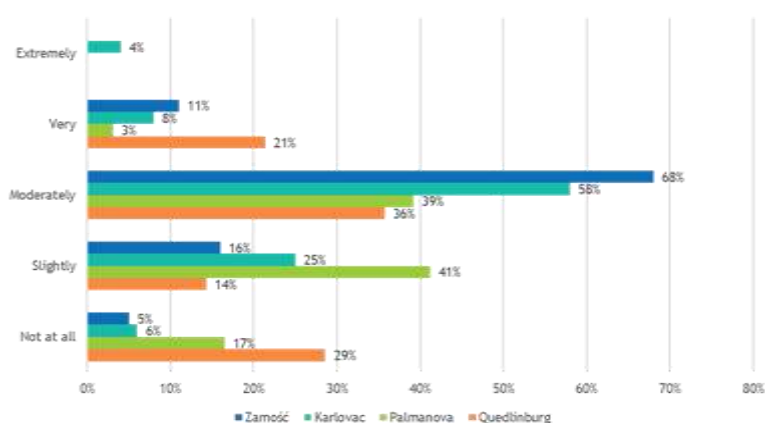
Have you ever participated in a local environmental event, campaign, or initiative?



Would you be willing to participate in community-based environmental actions (e.g., workshops, clean-up events, urban gardening)?



How informed do you feel about climate or environmental activities in your city?



Perceptions of overall environmental quality are predominantly positive, yet differ in intensity. Figure 13 shows that in Quedlinburg, assessments concentrate in the “acceptable” (53%) and “good” (33%) categories, with no ratings of “excellent.” Palmanova shows a similar distribution, though slightly more polarized (42% acceptable; 37% good; 3% excellent; 3% very poor). Karlovac records comparatively favorable evaluations, with 40% rating conditions as good and 11% as excellent, and only 2% as poor or very poor. Zamość stands out for its strongly positive profile: 74% rate environmental quality as good and none as poor or very poor, although 26% consider it acceptable rather than good or excellent.

Observed climate-related changes over the past five years reveal both shared and location-specific patterns. Hotter summers are widely reported in all cities (73% in Quedlinburg; 80% in Palmanova; 62% in Karlovac; 79% in Zamość). More frequent heavy rainfall or flooding is also commonly noted, particularly in Karlovac (68%) and Zamość (79%), followed by Palmanova (60%) and Quedlinburg (53%). Longer drought periods are especially salient in Quedlinburg (87%), while less prominent in Palmanova (31%), Karlovac (47%), and Zamość (42%). Perceived deterioration in air quality ranges

Figure 14, Summary of the Results for Section Four of the Questionnaire



from 15% in Palmanova to 34% in Karlovac, with intermediate shares in Zamość (26%) and Quedlinburg (20%). Loss of green areas or biodiversity is most frequently cited in Quedlinburg (33%) and less so elsewhere (16-17%). Reports of “no visible changes” remain limited overall but are highest in Karlovac (15%).

Regarding mobility patterns walking dominates in all four cities, reaching 100% in Quedlinburg, 95% in Zamość, 87% in Palmanova, and 75% in Karlovac. Bicycle use is particularly strong in Quedlinburg (60%) and more moderate in Karlovac (30%), Palmanova (26%), and Zamość (26%). Reliance on private cars is highest in Karlovac (74%), compared to 47% in Quedlinburg, 39% in Palmanova, and 32% in Zamość. Public transportation plays only a minor role across cases, ranging from 0% in Palmanova to 13% in Quedlinburg.

As shown in Figure 14 participation in local environmental initiatives varies considerably. Quedlinburg records the highest share of prior engagement (50%), followed by Karlovac (40%) and Zamość (37%), whereas Palmanova shows substantially lower participation (25%). In all four cities, however, a significant proportion report no prior involvement, ranging from 50% in Quedlinburg to 76% in Palmanova. Willingness to engage in future community-based environmental actions is generally higher than past participation rates. Half of respondents in Quedlinburg (50%) and nearly half in Zamość (47%) express clear readiness to participate, compared to 38% in Karlovac and 28% in Palmanova. A large “maybe” group is represented in Palmanova (49%) and Karlovac (42%), as well as in Quedlinburg (36%) and Zamość (32%), indicating latent engagement potential.

In Quedlinburg, responses regarding self-perceived levels of information about local climate and environmental activities are relatively dispersed, with 29% feeling not informed at all and 36% moderately informed. Palmanova is characterized by a concentration in the “slightly” (41%) and “moderately” (39%) categories. Karlovac and Zamość display higher levels of perceived knowledge, with majorities describing themselves as moderately informed (58% and 68%, respectively). Very or extremely high levels of perceived information remain limited overall, reaching 21% in Quedlinburg, 8% (plus 4% extremely) in Karlovac, 11% in Zamość, and only 3% in Palmanova.

Finally, Figure 15 shows that preferred policy measures include green infrastructure and energy-related interventions. The expansion of green areas receives majority backing in all four cities, ranging from 42% in Karlovac to 63% in Zamość (50% in Quedlinburg; 53% in Palmanova). Installation of renewable energy sources is particularly supported in Quedlinburg (71%) and equally high in Palmanova and Karlovac (64% each), while lower in Zamość (47%). Bicycle lanes and pedestrian zones show especially strong approval in Quedlinburg (86%) and Karlovac (66%), with more moderate support in Zamość (53%) and Palmanova (40%). Energy renovation of buildings garners consistent backing across cases (57% in Quedlinburg; 54% in Palmanova; 66% in Karlovac; 58% in Zamość). Water management measures are highly prioritized in Quedlinburg (79%) and Karlovac (68%), but less so in Palmanova (37%) and Zamość (26%). Urban gardening initiatives and awareness-raising campaigns receive comparatively lower, though still notable, levels of support, particularly in Quedlinburg (50% and 57%, respectively).

Open-ended responses on desired improvements reinforce these quantitative trends. In all cities, respondents frequently mention increasing urban greenery, planting more trees, and enhancing public spaces. Traffic reduction (especially in historic cores) appears repeatedly in Quedlinburg, Karlovac, and Zamość, often linked to calls for better pedestrian and cycling infrastructure. Renewable energy expansion, including photovoltaic installations and energy renovation of buildings, is another recurring theme, particularly in Palmanova and Karlovac. Waste management improvements and cleaner public spaces are emphasized in Palmanova and Karlovac, while water management and flood protection are strong concerns in Karlovac and, to a lesser extent, Zamość.

Regarding perceived challenges to climate resilience, financial constraints and limited resources are dominant themes across cities. In Karlovac and Zamość, respondents frequently refer to funding shortages, infrastructure deficits, and the need for improved flood management. In Quedlinburg and Palmanova,



regulatory constraints (specifically heritage-related) and the accessibility of energy-efficiency measures are highlighted. A lack of public awareness and engagement is also cited in all four cities, alongside concerns about urban heat, loss of greenery, and the need for better coordination between administration and citizens.

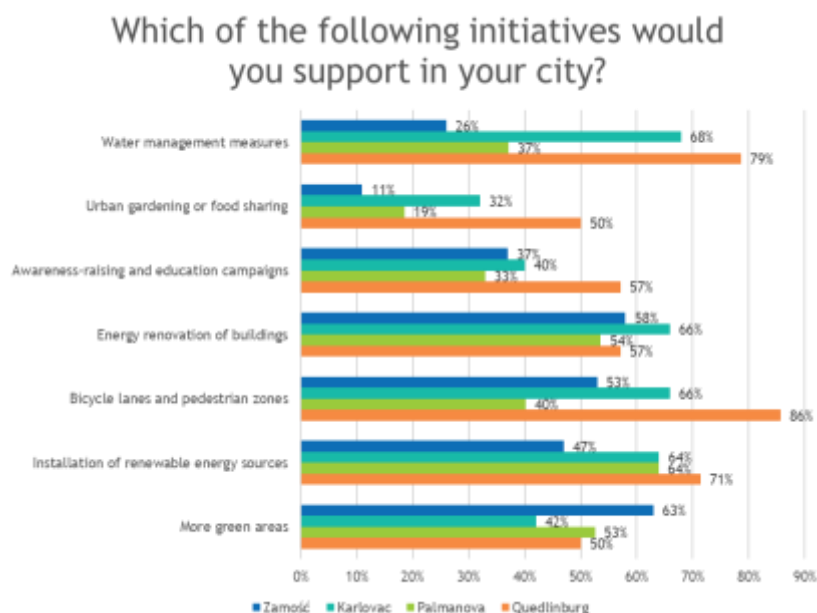


Figure 15, Summary of the Results for Section Five of the Questionnaire



D. Annex

A.1 General Questionnaire

Section 1: Demographic Information

1. Which age group do you belong to?

- Under 18
- 18-30
- 31-45
- 46-60
- Over 60

2. Which Gender do you have?

- Male
- Female
- prefer not to say

3. What is your highest completed level of education?

- Primary
- Secondary
- Vocational / Technical
- University / Higher education
- Other

4. What is your current employment status?

- Student
- Employed
- Unemployed
- Retired
- Other

5. Do you live within the city walls/historic center?

- Yes
- No

6. How long have you been living in this city?

- Less than 1 year
- 1-5 years
- 6-10 years



- More than 10 years

Section 2: Environmental Awareness and Climate Perception

7. How concerned are you about climate change?

- Not at all
- Slightly
- Moderately
- Very
- Extremely

8. Do you think climate change is affecting your city?

- Not at all
- Slightly
- Moderately
- Strongly
- I don't know

9. Which of the following environmental problems do you consider relevant for your city? (Multiple selections possible)

- Air pollution
- Urban heat
- Flooding
- Noise
- Waste management
- Droughts
- Loss of Biodiversity

Section 3: Energy Efficiency and Building Renovation Awareness

10. Have you ever considered renovating your home/building to improve energy efficiency (e.g., insulation, windows, heating systems, solar collectors/PV panels, heat pumps)?

- Yes
- No
- Not sure

11. What is preventing you from implementing an energy-efficient renovation of your building? (Multiple selections possible)

- Lack of information
- High costs
- Inaccessible financial incentives/support



- Not a priority
- The building is rented
- Conservation restrictions
- Unresolved/complex property-legal issues
- Other

12. Are you aware of any support programs or financial incentives for energy-efficient building renovation or switching to renewable energy (e.g., PV systems, heat pumps)?

- Yes
- No
- Not sure

13. If financial support were available, would you consider renovating your home/building to improve energy efficiency?

- Yes
- Maybe
- No

14. What percentage of the renovation costs/implementation costs for renewable energies could you cover yourself?

- 100%
- 75%
- 50%
- 25%
- 10%
- 0%
- Not sure

15. Do you consider your household to be energy poor (definition provided)?

- Yes
- No
- Not sure

16. Are you familiar with support programs for energy-poor citizens in your city and/or country?

- Yes
- No
- Not sure

Section 4: Local Experience and Perceived Quality of Life

17. How would you rate the general environmental quality in your city (air, green spaces, cleanliness)?

- Very poor



- Poor
- Acceptable
- Good
- Excellent

18. Which of the following environmental or climate-related changes have you observed in your city over the last 5 years? (Multiple selections possible)

- Hotter summers / urban heat island effect
- More frequent heavy rainfall or flooding
- Longer drought periods
- Poorer air quality
- Loss of green areas or biodiversity
- No visible changes
- Other

19. How do you usually get around within the city? (Multiple selections possible)

- On foot
- By bicycle
- Public transportation
- Personal car
- Other

Section 5: Participation and Community Engagement

20. Have you ever participated in a local environmental event, campaign, or initiative?

- Yes
- No

21. Would you be willing to participate in community-based environmental actions (e.g., workshops, clean-up events, urban gardening)?

- Yes
- No
- Maybe

22. How informed do you feel about climate or environmental activities in your city?

- Not at all
- Slightly
- Moderately
- Very
- Extremely



Section 6: Vision and Preferences for the Future

23. What would you like to improve or change in your city to make it more sustainable? (Open responses)

24. Which of the following initiatives would you support in your city? (Select all that apply)

- More green areas
- Installation of renewable energy sources
- Bicycle lanes and pedestrian zones
- Energy renovation of buildings
- Awareness-raising and education campaigns
- Urban gardening or food sharing
- Water management measures

25. In your opinion, what are the main challenges for increasing climate resilience in your city? (Open responses)

A.2 Specific Questions - Quedlinburg

26. Are you aware of any mobility or sustainable transport projects in the historical area of Quedlinburg?

- Yes
- No

27. Would you be interested in participating in educational programs or activities related to sustainable living in historic urban areas?

- Yes
- Maybe
- No

A.3 Specific Questions - Palmanova

26. In Palmanova, it's not always possible to install rooftop photovoltaic systems. Would you be interested in solutions that allow the use of renewable energy sources within the city walls?

- Yes
- No

27. How important is the city's historical character when considering energy-efficient or climate-adaptation solutions?

- Not at all
- A little
- Very important
- Not sure



B.1 Answers - Quedlinburg

Section 1: Demographic Information

1. Which age group do you belong to?

- Under 18: 6.7%
- 18-30: 6.7%
- 31-45: 33.3%
- 46-60: 20%
- Over 60: 33.3%

2. Which Gender do you have?

- Male: 40%
- Female: 53.3%
- prefer not to say: 6.7%

3. What is your highest completed level of education?

- Primary: 0%
- Secondary: 6.7%
- Vocational / Technical: 33.3%
- University / Higher education: 60%
- Other: 0%

4. What is your current employment status?

- Student: 6.7%
- Employed: 60%
- Unemployed: 0%
- Retired: 26.7%
- Other: 6.7%

5. Do you live within the city walls/historic center?

- Yes: 100%
- No: 0%

6. How long have you been living in this city?

- Less than 1 year: 20%
- 1-5 years: 6.7%
- 6-10 years: 0%
- More than 10 years: 73.3%

Section 2: Environmental Awareness and Climate Perception



7. How concerned are you about climate change?

- Not at all: 0%
- Slightly: 0%
- Moderately: 26.7%
- Very: 40%
- Extremely: 33.3%

8. Do you think climate change is affecting your city?

- Not at all: 0%
- Slightly: 6.7%
- Moderately: 40%
- Strongly: 53.3%
- I don't know: 0%

9. Which of the following environmental problems do you consider relevant for your city? (Multiple selections possible)

- Air pollution: 53.3%
- Urban heat: 73.3%
- Flooding: 33.3%
- Noise: 13.3%
- Waste management: 20%
- Droughts: 66.7%
- Loss of Biodiversity: 53.3%

Section 3: Energy Efficiency and Building Renovation Awareness

10. Have you ever considered renovating your home/building to improve energy efficiency (e.g., insulation, windows, heating systems, solar collectors/PV panels, heat pumps)?

- Yes: 38.5%
- No: 15.4%
- Not sure: 46.2%

11. What is preventing you from implementing an energy-efficient renovation of your building? (Multiple selections possible)

- Lack of information: 13.2%
- High costs: 26.7%
- Inaccessible financial incentives/support: 0%
- Not a priority: 6.7%
- The building is rented: 60%
- Conservation restrictions: 33.3%



- Unresolved/complex property-legal issues: 26.7%
- Other: 6.7%

12. Are you aware of any support programs or financial incentives for energy-efficient building renovation or switching to renewable energy (e.g., PV systems, heat pumps)?

- Yes: 35.7%
- No: 28.6%
- Not sure: 35.7%

13. If financial support were available, would you consider renovating your home/building to improve energy efficiency?

- Yes: 25%
- No: 16.7%
- Not sure: 58.3%

14. What percentage of the renovation costs/implementation costs for renewable energies could you cover yourself?

- 100%: 7.7%
- 75%: 0%
- 50%: 7.7%
- 25%: 15.4%
- 10%: 7.7%
- 0%: 15.4%
- Not sure: 46.2%

15. Do you consider your household to be energy poor (definition provided)?

- Yes: 20%
- No: 66.7%
- Not sure: 13.3%

16. Are you familiar with support programs for energy-poor citizens in your city and/or country?

- Yes: 20%
- No: 66.7%
- Not sure: 13.3%

Section 4: Local Experience and Perceived Quality of Life

17. How would you rate the general environmental quality in your city (air, green spaces, cleanliness)?

- Very poor: 0%
- Poor: 13.3%
- Acceptable: 53.3%
- Good: 33.3%



- Excellent: 0%

18. Which of the following environmental or climate-related changes have you observed in your city over the last 5 years? (Multiple selections possible)

- Hotter summers / urban heat island effect: 73.3%
- More frequent heavy rainfall or flooding: 53.3%
- Longer drought periods: 86.7%
- Poorer air quality: 20%
- Loss of green areas or biodiversity: 33.3%
- No visible changes: 0%
- Other: 6.7%

19. How do you usually get around within the city? (Multiple selections possible)

- On foot: 100%
- By bicycle: 60%
- Public transportation: 13.3%
- Personal car: 46.7%
- Other: 0%

Section 5: Participation and Community Engagement

20. Have you ever participated in a local environmental event, campaign, or initiative?

- Yes: 50%
- No : 50%

21. Would you be willing to participate in community-based environmental actions (e.g., workshops, clean-up events, urban gardening)?

- Yes: 50%
- Maybe: 35.7%
- No : 14.3%

22. How informed do you feel about climate or environmental activities in your city?

- Not at all: 28.6%
- Slightly: 14.3%
- Moderately: 35.7%
- Very: 21.4%
- Extremely: 0%

Section 6: Vision and Preferences for the Future

23. What would you like to improve or change in your city to make it more sustainable? (Open responses)

- Balcony solar power plant



- More trees in the city center
- Improved/more frequent public transport (city buses, etc.)
- Urban greening
- More trees and cleaner roads
- Make cycle paths usable for sports bikes too
- Regularly grout historic cobblestones with gravel so that cyclists (racing bikes) don't get stuck
- Curb mass tourism and holiday homes, etc.
- Promote a truly car-free city center
- Urgently enforce existing traffic-calmed zones! (Perhaps speed checks would help?)
- Heat pumps
- Participation in energy generation through the energy park (Morgenrot)
- Balance between tourism and the lives of local residents
- tourism should be designed sustainably
- food sharing
- More bike paths
- EV Charging stations
- Green spaces
- Rainwater harvesting!

24. Which of the following initiatives would you support in your city? (Select all that apply)

- More green areas: 50%
- Installation of renewable energy sources: 71.4%
- Bicycle lanes and pedestrian zones: 85.7%
- Energy renovation of buildings: 57.1%
- Awareness-raising and education campaigns: 57.1%
- Urban gardening or food sharing: 50%
- Water management measures: 78.6%

25. In your opinion, what are the main challenges for increasing climate resilience in your city? (Open responses)

- We need to stop covering fertile farmland with solar panels and instead use existing roofs!
- Modern building renovation must fit into the cityscape
- Public transport services
- Green spaces
- The problem of solar roofs on listed buildings is unsolvable, therefore, residents should receive a bonus for electricity consumption



- Plant more trees
- to counteract the drying out of the soil in the deepest layers
- reconsider the ongoing well construction in Brühlpark. (The next reservoir is nearby and could cover the water supply.)
- Heat pumps
- Participation in energy generation through the energy park (Morgenrot)
- Conservation Restrictions
- Costs
- Public awareness

Section 7: Quedlinburg Specific

26. Are you aware of any mobility or sustainable transport projects in the historical area of Quedlinburg?

- Yes: 7.1%
- No: 92.9%

27. Would you be interested in participating in educational programs or activities related to sustainable living in historic urban areas?

- Yes: 28.6%
- Maybe: 64.3%
- No: 7.1%

B.2 Answers - Palmanova

Section 1: Demographic Information

1. How old are you?

- Under 18: 1.1%
- 18-30: 11.2%
- 31-45: 22.4%
- 46-60: 24.5%
- Over 60: 40.8%

2. What is your Gender?

- Male: 54.1%
- Female: 45.9%

3. What is your highest completed level of education?

- Primary: 1%
- Secondary: 8.2%
- Vocational / Technical: 52%



- University / Higher education: 37.8%
- Other: 1%

4. What is your current employment status?

- Student: 3.1%
- Employed: 57.1%
- Unemployed: 3.1%
- Retired: 37.4%
- Other: 2%

5. Do you live within the city walls/historic center?

- Yes: 66.3%
- No: 33.7%

6. How long have you lived in this city?

- Less than 1 year: 6.1%
- 1-5 years: 10.2%
- 6-10 years: 8.2%
- More than 10 years: 75.5%

Section 2: Environmental Awareness and Climate Perception

7. How concerned are you about climate change?

- Not at all: 3.1%
- Slightly: 10.2%
- Moderately: 22.4%
- Very: 43.9%
- Extremely: 20.4%

8. Do you think climate change affects your city?

- Not at all: 2%
- Slightly: 19.4%
- Moderately: 40.8%
- Strongly: 35.7%
- I don't know: 2%

9. Which of the following environmental problems do you consider relevant for your city? (Select all that apply)

- Air pollution: 56.1%
- Urban heat: 45.9%
- Flooding: 30.6%



- Noise: 24.5%
- Waste management: 65.3%
- Drought: 28.6%
- Biodiversity loss: 39.8%

Section 3: Energy Efficiency and Building Renovation Awareness

10. Have you ever considered renovating your home/building to improve energy efficiency (e.g., insulation, windows, heating systems, solar collectors/PV panels, heat pumps)?

- Yes: 70.8%
- No: 20.8%
- Not sure: 8.3%

11. What do you consider the main obstacles to home/building renovation for improving energy efficiency? (Select all that apply)

- Lack of information: 12.6%
- High costs: 66.3%
- Inaccessible financial incentives/support: 24.2%
- Not a priority: 8.4%
- The building is rented: 5.3%
- Conservation restrictions: 44.2%
- Unresolved/complex property-legal issues: 6.3%
- Other: 16.5%

12. Are you aware of financial incentives or support programs for energy renovation of buildings and renewable energy installation in your city and/or country?

- Yes: 74%
- No: 19.8%
- Not sure: 6.3%

13. If financial support were available, would you consider renovating your home/building to improve energy efficiency?

- Yes: 67%
- No: 6.4%
- Not sure: 26.6%

14. What percentage of renovation and renewable installation costs do you believe you could personally cover?

- 100%: 3.2%
- 75%: 7.4%
- 50%: 32.6%
- 25%: 13.7%



- 10%: 13.7%
- 0%: 7.4%
- Not sure: 22.1%

15. Do you consider your household to be energy poor (definition provided)?

- Yes: 11.3%
- No: 84.5%
- Not sure: 4.1%

16. Are you familiar with support programs for energy-poor citizens in your city and/or country?

- Yes: 28.9%
- No: 61.9%
- Not sure: 9.3%

Section 4: Local Experience and Perceived Quality of Life

17. How would you rate the overall environmental quality in your city (air, green spaces, cleanliness)?

- Very poor: 3.1%
- Poor: 15.3%
- Acceptable: 41.8%
- Good: 36.7%
- Excellent: 3.1%

18. In the past 5 years, which of the following climate- or environment-related changes have you noticed in your city? (Select all that apply)

- Hotter summers / urban heat island effect: 79.6%
- More frequent heavy rainfall or flooding: 60.2%
- Longer drought periods: 30.6%
- Poorer air quality: 15.3%
- Loss of green areas or biodiversity: 16.3%
- No visible changes: 7.1%
- Other: 2%

19. How do you usually move around the city? (Select all that apply)

- On foot: 86.7%
- By bicycle: 25.5%
- Public transportation: 0%
- Personal car: 38.8%
- Other: 1%

Section 5: Participation and Community Engagement



20. Have you ever participated in a local event, campaign, or initiative related to the environment?

- Yes: 24.5%
- No: 75.5%

21. Would you be willing to participate in community environmental actions (e.g., workshops, clean-up actions, urban gardening)?

- Yes: 27.6%
- Maybe: 49%
- No: 23.5%

22. How informed do you feel about climate or environmental activities in your city?

- Not at all: 16.5%
- Slightly: 41.2%
- Moderately: 39.2%
- Very: 3.1%
- Extremely: 0%

Section 6: Vision and Preferences for the Future

23. What would you like to improve or change in your city to make it more sustainable? (Open responses)

- The introduction of photovoltaic panels shaped like terracotta roof tiles
- I would like to see bonuses and incentives introduced for residents who install solar panels, thus encouraging the spread of renewable energy. Furthermore, I propose adopting smart and sustainable waste bins for more efficient waste management and, finally, enhancing and expanding the city's green areas.
- The minds of people who are not interested in using bins to separate the various types of waste
- Create more shaded areas, plant trees
- I don't know
- Management of waste separation, cleaning and tidying of bins. Poorly maintained green areas. Street furniture.
- Plant more trees
- Better waste management, vehicle charging stations, which currently don't exist and, in any case, very few are planned, especially considering tourism!
- Home photovoltaic systems or solar parks to invest in to eliminate methane and produce renewable energy, lowering utility bills.
- Install solar panels without architectural constraints.
- Improved street cleanliness, increased awareness of waste management, more green spaces, and improved connections with nearby towns and large cities (e.g., Udine) to limit car use and encourage public transportation.
- Reducing air pollutants from home heating



- Promote the replacement of heating and cooling sources
- More green areas with trees in Piazza Grande
- Street furniture: clean and beautify waste collection bin areas
- Involve fellow citizens in adopting a flowerbed.
- Limit access within the city walls to residents and authorized suppliers only.
- The use of vacant homes for young people
- We need to increase the population with startups, university programs, and even industrial activities, etc.
- More greenery, more respect for waste disposal
- Enhanced waste recycling
- More control
- I don't know
- Playground for children with natural materials
- Measures to reduce noise between the highway and the historic center
- Waste management and cleaning of the districts. From the second ring road onwards... Clear deterioration... Broken sidewalks and tall weeds in the tunnels and on the sidewalks themselves. Waste even in the sidewalk drainage ditches.
- More green and well-maintained areas
- More sustainable
- Bike paths within the walls. It's sometimes dangerous to cycle around Palmanova
- Limit traffic, especially within the walls
- Everything
- More bike paths. Better connections with other cities
- Waste management
- More green spaces, more urban gardens, less traffic
- Improve waste disposal, clean city streets and green spaces
- Nothing
- Limit traffic to vehicles intending to stop within the city, preventing access to transit vehicles, review road and parking systems, promoting one-way systems and parking areas away from main roads
- Create green spaces for pets to prevent them from being carried everywhere, more frequent speed checks, and parking at pedestrian crossings and intersections, as well as raised pedestrian crossings to force vehicles to slow down when passing.
- Waste management
- More attention from citizens to keep the city clean.
- A better water system.
- Replant the trees in the main square



- More public transportation
- More green spaces
- Cleanliness and greenery
- I would like to be able to install photovoltaic panels (for a fee) on land provided by the municipality and reduce my energy bill.
- Reduce the traffic of vehicles not headed to Palmanova but only on their way to other destinations.
- I would like to limit the use of vehicles within the city walls. Close the second and third ring roads to traffic.
- Change the governing body.
- More low-impact public transportation, eco-friendly electric minibuses.

24. Which of the following initiatives would you support in your city? (Select all that apply)

- More green areas: 52.6%
- Installation of renewable energy sources: 63.9%
- Bicycle lanes and pedestrian zones: 40.2%
- Energy renovation of buildings: 53.6%
- Awareness-raising and education campaigns: 33%
- Urban gardening or food sharing: 18.6%
- Water management measures: 37.1%

25. In your opinion, what are the main challenges for increasing climate resilience in your city? (Open responses)

- One of the main challenges is making energy efficiency solutions more accessible, for example through incentives or bonuses for installing solar panels. This way, more and more people could join, reducing energy costs and making a concrete contribution to improving the environment.
- Educate people
- Cleanliness
- Give people more information, get them more involved
- Management of the historic center and energy savings in homes within the city walls
- Energy efficiency of buildings
- Reducing red tape and finding technical solutions to obstacles and landscape constraints
- I don't know
- Energy efficiency, reducing emissions, increasing green spaces
- Small actions, let's start by keeping drains and manholes clean...
- Improving information on waste sorting for new arrivals
- I don't think Palmanova is in a worrying situation. Limiting car traffic would certainly be an excellent measure. At certain times of the day, there's a lot of traffic, and being a small town, this is, in my opinion, the biggest problem.



- More trees, green areas, renewable energy systems
- Increase urban greenery
- Pedestrian areas
- More pedestrian areas
- Energy efficiency
- Reduce CO2 levels
- Management and recovery of rainwater. Creation of outdoor and indoor areas to cope with heat waves
- Cleaning and maintenance of urban sewer systems
- Photovoltaic panels
- Renovation costs
- 100% guaranteed
- Information campaigns
- Improve energy autonomy, increase charging for electric cars
- Public information and improve city cleanliness
- Waste control, circularity, energy efficiency of private buildings
- Conduct a correct risk assessment: what to do to improve greenery and what to do to avoid damage from extreme events
- Reduce private vehicle traffic
- Renovate city walls and provide financial and bureaucratic support for people in their energy transition
- Renewable energy throughout the municipality
- Maintenance
- Work to fight adverse natural events

Section 7: Palmanova Specific

26. In Palmanova, it's not always possible to install rooftop photovoltaic systems. Would you be interested in solutions that allow the use of renewable energy sources within the city walls?

- Yes: 88.8%
- No: 11.2%

27. How important is the city's historical character when considering energy-efficient or climate-adaptation solutions?

- Not at all: 1%
- A little: 23.5%
- Very important: 72.4%
- Not sure: 3.1%



B.3 Answers - Karlovac

Section 1: Demographic Information

1. Which age group do you belong to?

- Under 18: 0%
- 18-30: 8%
- 31-45: 36%
- 46-60: 51%
- Over 60: 6%

2. Which Gender do you have?

- Male: 28%
- Female: 70%
- Other 2%

3. What is your highest completed level of education?

- Primary: 0%
- Secondary: 9%
- Vocational / Technical: 8%
- University / Higher education: 83%
- Other: 0%

4. What is your current employment status?

- Student: 0%
- Employed: 98%
- Unemployed: 0%
- Retired: 2%
- Other: 0%

5. Do you live within the city walls/historic center?

- Yes: 13%
- No: 87%

6. How long have you been living in this city?

- Less than 1 year: 2%
- 1-5 years: 4%
- 6-10 years: 2%
- More than 10 years: 92%



Section 2: Environmental Awareness and Climate Perception

7. How concerned are you about climate change?

- Not at all: 6%
- Slightly: 19%
- Moderately: 40%
- Very: 32%
- Extremely: 4%

8. Do you think climate change affects your city?

- Not at all: 4%
- Slightly: 15%
- Moderately: 51%
- Strongly: 26%
- I don't know: 4%

9. Which of the following environmental problems do you consider relevant for your city? (Select all that apply)

- Air pollution: 15%
- Urban heat: 12%
- Flooding: 28%
- Noise: 6%
- Waste management: 20%
- Drought: 10%
- Biodiversity loss: 8%

Section 3: Energy Efficiency and Building Renovation Awareness

10. Have you ever considered renovating your home/building to improve energy efficiency (e.g., insulation, windows, heating systems, solar collectors/PV panels, heat pumps)?

- Yes: 92%
- No: 4%
- Not sure: 4%

11. What do you consider the main obstacles to home/building renovation for improving energy efficiency? (Select all that apply)

- Lack of information: 12%
- High costs: 44%
- Inaccessible financial incentives/support: 26%
- Not a priority: 4%



- The building is rented: 0%
- Conservation restrictions: 7%
- Unresolved/complex property-legal issues: 6%
- Other: 2%

12. Are you aware of financial incentives or support programs for energy renovation of buildings and renewable energy installation in your city and/or country?

- Yes: 70%
- No: 6%
- Not sure: 25%

13. If financial support were available, would you consider renovating your home/building to improve energy efficiency?

- Yes: 85%
- Maybe: 13%
- No: 2%

14. What percentage of the renovation costs/implementation costs for renewable energies could you cover yourself?

- 100%: 2%
- 75%: 4%
- 50%: 30%
- 25%: 34%
- 10%: 9%
- 0%: 4%
- Not sure: 17%

15. Do you consider your household to be energy poor (definition provided)?

- Yes: 11%
- No: 81%
- Not sure: 8%

16. Are you familiar with support programs for energy-poor citizens in your city and/or country?

- Yes: 21%
- No: 66%
- Not sure: 13%

Section 4: Local Experience and Perceived Quality of Life

17. How would you rate the overall environmental quality in your city (air, green spaces, cleanliness)?

- Very poor: 2%
- Poor: 2%



- Acceptable: 45%
- Good: 40%
- Excellent: 11%

18. In the past 5 years, which of the following climate- or environment-related changes have you noticed in your city? (Select all that apply)

- Hotter summers / urban heat island effect: 62%
- More frequent heavy rainfall or flooding: 68%
- Longer drought periods: 47%
- Poorer air quality: 34%
- Loss of green areas or biodiversity: 17%
- No visible changes: 15%
- Other: 2%

19. How do you usually move around the city? (Select all that apply)

- On foot: 75%
- By bicycle: 30%
- Public transportation: 2%
- Personal car: 74%
- Other: 0%

Section 5: Participation and Community Engagement

20. Have you ever participated in a local event, campaign, or initiative related to the environment?

- Yes: 40%
- No: 60%

21. Would you be willing to participate in community environmental actions (e.g., workshops, clean-up actions, urban gardening)?

- Yes: 38%
- Maybe: 42%
- No: 21%

22. How informed do you feel about climate or environmental activities in your city?

- Not at all: 6%
- Slightly: 25%
- Moderately: 58%
- Very: 8%
- Extremely: 4%

Section 6: Vision and Preferences for the Future



23. What would you like to improve or change in your city to make it more sustainable? (Open responses)

- I have no suggestion.
- I don't know at the moment.
- Ban motor vehicle traffic in the city center.
- Better management of natural resources.
- Reduce overbuilding with residential buildings and shopping centers (large parking areas exposed to the elements) - more humane spatial planning.
- Better cooperation of the Cleaning Service with citizens, less arrogance and almost rudeness from them. They are not educated about waste separation and its impact on the environment. And they expect it from me??
- People being careless in their cars.
- Renovation of riverbanks, construction of aboveground/underground garages, renovation of existing ones, and planting new rows of trees.
- Renovate parks as they are in very poor condition, improve public transport, plant trees in parking lots and at bathing areas.
- Promoting renewable energy sources and energy efficiency.
- x
- Plant more trees.
- More funding.
- Increase parking fees so people use public transport more. Strengthen school activities that motivate children to take public transport instead of being driven individually by parents, grandparents, etc. Bus stops used to be social places, now everyone just types on their phones in their cars.
- Greater cooperation between citizens and administration for common welfare and sustainability.
- Reduce water losses in the network, textile containers.
- Environment.
- More trees.
- Better river management.
- Energy renovation of buildings, which would also improve the city's appearance.
- Higher quality and more accessible (more frequent lines) public transport network, construction of bicycle lanes.
- Higher percentage of waste separation, rainwater harvesting on public and private surfaces during dry periods.
- More buildings with solar panel heating, more bicycle lanes, more environmental cleanup actions, transparent information on waste disposal to prevent illegal dumps.
- More bicycle lanes and pedestrian zones.
- Awareness.



- Waste management (more effective recycling), more efficient mobility (restricting car traffic in the city center).
- Systematic and coordinated flood management - public utilities, all municipal companies, continuous monitoring not just when there is a threat.
- I don't know. It's not my focus.
- Renovate facades of buildings, mostly with city support, not at the expense of homeowners' contributions.
- Maximum use of renewable energy sources.
- More green areas, tree lines, and natural parks (not paved). Renovate facades of residential buildings, enable bicycle lanes throughout the city.
- More green areas, less concrete covering green spaces, thoughtful and functional public lighting (not just energy-saving but actually useful), systematic attention to drinking water sources and solutions for currently polluted water in the city.
- I don't know.
- A
- Reduce intercity traffic through the city, especially freight traffic (towards Plitvice D1 and Rijeka). Build a ring around the city (not the city ring). Build a "green" path around the city connecting four rivers (Mrežnica, Korana, Kupa, Dobra) for walkers, runners, cyclists. Ban traffic on Zvijezda (inside the walls), only for residents and deliveries. Increase parking fees in the center. People don't walk even 100 meters; everyone drives, and there's not enough parking (and we don't need more).
- Improve bicycle lanes.
- Much more trees, greenery, parks, and nature. An indoor running track for bad weather.
- Much more maintenance of public spaces, more parking, cleaning areas outside the city; Karlovac seems to be falling behind.
- More trees = more shade. Urban trees along roads have been scientifically measured to reduce asphalt temperature by up to 3°C during heat waves.
- Better water quality.
- A higher-quality, accessible public transport system for all and active efforts to inform citizens so they adopt new habits. Just because the city administration knows something doesn't mean citizens do.
- Quality basic infrastructure and, even more importantly, professional and quality execution and maintenance of works.
- Increased monitoring of people who pollute the environment.
- Better management of municipal waste and road maintenance.
- Improve the water supply system, considering the city has four rivers but houses have polluted water; focus on river cleanliness as not all are safe for swimming due to bacteria and waste.
- Ensure clean water, finally solve the flood problem; it's the 21st century, yet we don't have clean and safe water, so all other initiatives are pointless if basic needs aren't met.



- Greater accessibility for people. For example, during Beer Days, the city could provide free stalls for vendors, making participation more affordable and reducing costs. Provided the city regulates the price so it's not too high.
- I would like dog owners to take better care of cleaning up after their pets
- Safe and comfortable pedestrian and bicycle paths, rest areas along paths, parking lots with tree lines for shade, transparent information about waste disposal, education and activities for citizens regarding waste, and solutions for floods.
- I don't know...
- Transport.
- It is important to build more charging stations for electric vehicles—especially in cities like Karlovac where there are still too few. Without enough charging stations, EV drivers have fewer options, making longer trips harder and slowing the transition to greener transport. Building more stations is crucial, especially when public calls for subsidies for electric cars are announced. The current infrastructure in Karlovac is insufficient.

24. Which of the following initiatives would you support in your city? (Select all that apply)

- More green areas: 42%
- Installation of renewable energy sources: 64%
- Bicycle lanes and pedestrian zones: 66%
- Energy renovation of buildings: 66%
- Awareness-raising and education campaigns: 40%
- Urban gardening or food sharing: 32%
- Water management measures: 68%

25. In your opinion, what are the main challenges for increasing climate resilience in your city? (Open responses)

- I don't know.
- I don't know even that right now.
- Lack of awareness among citizens.
- Global problems over which the local community has no influence.
- Reduce overbuilding with residential buildings and shopping centers (large parking areas exposed to the elements) - more humane spatial planning.
- Everyone acts according to themselves; I try to live with and respect nature. They gather people and talk about energy efficiency while offering drinks in plastic cups with straws. They give some flyers and completely leave trash behind, ridiculous.
- Blockheads.
- Urban drainage, energy-inefficient buildings, etc.
- Financially and in human resources there are too few experts, public is uninterested.
- Preservation of greenery and effective ecosystem protection.
- x
- Sudden and heavy rainfall in short periods, long dry periods.



- Money.
- More bicycle lanes, not only in the city but also toward suburban settlements = fewer cars on the road. When someone feels unsafe cycling on the road, they rather get in a car, and especially don't allow a child to ride on the road because police will fine them if they ride on the sidewalk where there is no bike lane.
- Heat islands, floods.
- /
- Financial resources.
- I have no opinion.
- None.
- I'm not sure.
- Completion of a comprehensive flood defense system, energy renovation of family houses (including environmentally friendly heating systems), promotion of irrigation systems for family farms.
- Rainwater harvesting, installation of solar collectors on residential buildings.
- Preservation of green areas, planting as many trees as possible, involving the community in these actions, cleaning forests and rivers of waste, and also involving the local community in actions..
- Lack of resources.
- Strong floods, uneducated and unaware population, old buildings and facilities, older vehicles in private and public transport.
- Flood management and spatial planning that considers municipal aspects (construction, connections to old infrastructure... concreting).
- I have no idea.
- Confusion of the whole society, subconscious fear of the future.
- Citizens' awareness, communication, financial support at all levels of government.
- Finances.
- Lack of drinking water, pollution of drinking water sources, unprofessional management of natural resources, excessive concretization.
- I don't know.
- Quality of drinking water and air pollution (traffic, wood heating).
- Finances.
- Negligence.
- Government, their challenge is the interest of Karlovac citizens.
- To strengthen Karlovac's climate resilience, it is most important to improve flood management, including maintenance of embankments, retention, river monitoring, and controlled extraction of gravel at critical sections to increase flow and reduce overflow risk. Improve rainwater management through permeable surfaces, infiltration zones, and modernization of sewage systems. Develop green and blue corridors for cooling and microclimate regulation. Important measures include promoting green roofs and facades,



creating a heatwave plan, and modernizing infrastructure to withstand extreme weather. Energy renovation of buildings, strengthening and protecting ecosystems, supporting farmers in coping with drought and hail, and continuous citizen education and preparedness are key elements of a comprehensive urban climate resilience approach.

- No challenges.
- Residents have various municipal and existential problems and may not consider this urgent compared to other issues. However, issues like energy savings, lower bills, etc., would make the topic “more accessible.”
- Long heat waves.
- Citizens’ awareness.
- Reduction of water and air pollution.
- Lack of citizens’ interest and initiative; everyone wants something but wouldn’t say it.
- Finally put the Kupa channel to the function for which it was intended.
- I don’t know.
- A
- I don’t know.
- I don’t know...
- Public transport.
- Transport.

B.4 Answers - Zamość

Section 1: Demographic Information

1. Which age group do you belong to?

- Under 18: 0%
- 18-30: 0%
- 31-45: 26%
- 46-60: 42%
- Over 60: 32%

2. Which Gender do you have?

- Male: 47%
- Female: 53%
- prefer not to say: 0%

3. What is your highest completed level of education?

- Primary: 0%
- Secondary: 5%



- Vocational / Technical: 37%
- University / Higher education: 58%
- Other: 0%

4. What is your current employment status?

- Student: 0%
- Employed: 100%
- Unemployed: 0%
- Retired: 0%
- Other: 0%

5. Do you live within the city walls/historic center?

- Yes: 47%
- No: 53%

6. How long have you been living in this city?

- Less than 1 year: 11%
- 1-5 years: 21%
- 6-10 years: 16%
- More than 10 years: 53%

Section 2: Environmental Awareness and Climate Perception

7. How concerned are you about climate change?

- Not at all: 11%
- Slightly: 21%
- Moderately: 32%
- Very: 37%
- Extremely: 0%

8. Do you think climate change is affecting your city?

- Not at all: 0%
- Slightly: 0%
- Moderately: 37%
- Strongly: 37%
- I don't know: 26%

9. Which of the following environmental problems do you consider relevant for your city? (Multiple selections possible)

- Air pollution: 47%
- Urban heat: 79%



- Flooding: 5%
- Noise: 42%
- Waste management: 58%
- Droughts: 16%
- Loss of Biodiversity: 26%

Section 3: Energy Efficiency and Building Renovation Awareness

10. Have you ever considered renovating your home/building to improve energy efficiency (e.g., insulation, windows, heating systems, solar collectors/PV panels, heat pumps)?

- Yes: 89%
- No: 5%
- Not sure: 5%

11. What is preventing you from implementing an energy-efficient renovation of your building? (Multiple selections possible)

- Lack of information: 37%
- High costs: 100%
- Inaccessible financial incentives/support: 74%
- Not a priority: 0%
- The building is rented: 0%
- Conservation restrictions: 0%
- Unresolved/complex property-legal issues: 16%
- Other: 0%

12. Are you aware of any support programs or financial incentives for energy-efficient building renovation or switching to renewable energy (e.g., PV systems, heat pumps)?

- Yes: 53%
- No: 16%
- Not sure: 32%

13. If financial support were available, would you consider renovating your home/building to improve energy efficiency?

- Yes: 79%
- Maybe: 16%
- No: 5%

14. What percentage of the renovation costs/implementation costs for renewable energies could you cover yourself?

- 100%: 0%
- 75%: 0%
- 50%: 26%



- 25%: 32%
- 10%: 5%
- 0%: 5%
- Not sure: 32%

15. Do you consider your household to be energy poor (definition provided)?

- Yes: 0%
- No: 84%
- Not sure: 16%

16. Are you familiar with support programs for energy-poor citizens in your city and/or country?

- Yes: 5%
- No: 84%
- Not sure: 11%

Section 4: Local Experience and Perceived Quality of Life

17. How would you rate the general environmental quality in your city (air, green spaces, cleanliness)?

- Very poor: 0%
- Poor: 0%
- Acceptable: 26%
- Good: 74%
- Excellent: 0%

18. Which of the following environmental or climate-related changes have you observed in your city over the last 5 years? (Multiple selections possible)

- Hotter summers / urban heat island effect: 79%
- More frequent heavy rainfall or flooding: 79%
- Longer drought periods: 42%
- Poorer air quality: 26%
- Loss of green areas or biodiversity: 16%
- No visible changes: 5%
- Other: 0%

19. How do you usually get around within the city? (Multiple selections possible)

- On foot: 95%
- By bicycle: 26%
- Public transportation: 5%
- Personal car: 32%
- Other: 0%



Section 5: Participation and Community Engagement

20. Have you ever participated in a local environmental event, campaign, or initiative?

- Yes: 37%
- No: 63%

21. Would you be willing to participate in community-based environmental actions (e.g., workshops, clean-up events, urban gardening)?

- Yes: 47%
- No: 21%
- Maybe: 32%

22. How informed do you feel about climate or environmental activities in your city?

- Not at all: 5%
- Slightly: 16%
- Moderately: 68%
- Very: 11%
- Extremely: 0%

Section 6: Vision and Preferences for the Future

23. What would you like to improve or change in your city to make it more sustainable? (Open responses)

- I support some level of traffic limitation in the Old Town, as long as the reasons and goals are clearly communicated to the public.
- I have no suggestion.
- More funding. Any restrictions on parking zones and traffic in the Old Town should be introduced only after a clear and effective information campaign explaining their purpose and expected benefits.
- "Plant more trees. The introduction of greenery - as a way of improving the comfort of using public spaces - is considered a prerequisite for their usability (especially for older people). Therefore, it should be assumed that the process of introducing greenery should also be planned and prepared in the old town complex in Zamo???. This process should be combined with functional changes in the old town area - the dominance of pedestrian traffic and the increasing elimination of car traffic and parking.
- Translated with DeepL.com (free version)"
- Better management of natural resources. Residents should have priority parking rights.
- Plant more trees. Parking should be limited in the Old Town area.
- More funding. Limiting car traffic in historic areas is a sensitive issue and requires transparent communication with residents and visitors beforehand.
- Plant more trees.
- Plant more trees. I support partial traffic restrictions, provided they are well explained.
- Promotion of renewable energy sources and energy efficiency.



- Plant more trees.Reducing car traffic on key Old Town streets could improve quality of life, but only if people understand why these changes are necessary.
- More funding.
- I have no suggestion.
- Greater cooperation between citizens and city administration for the common good and sustainability.
- Better use of buffer car parks on the outskirts of the old town
- More trees.

24. Which of the following initiatives would you support in your city? (Select all that apply)

- More green areas: 63%
- Installation of renewable energy sources: 47%
- Bicycle lanes and pedestrian zones: 53%
- Energy renovation of buildings: 58%
- Awareness-raising and education campaigns: 37%
- Urban gardening or food sharing: 11%
- Water management measures: 26%

25. In your opinion, what are the main challenges for increasing climate resilience in your city? (Open responses)

- I don't know.
- I don't know.
- I don't even know that right now.
- Lack of awareness among citizens.Heat islands
- Money.
- Lack of trees, urban heat island, financial resources
- Money.
- Communication, money
- Energy-inefficient buildings, money
- Financially, too few experts, uninterested public.
- Preservation of greenery and effective ecosystem protection.
- Money.
- Money.
- Money.
- Lack of greenery i city centres. In history there were high trees on the square.
- Heat islands
- Lack of greenery
- Financial resources.



- I have no opinion.