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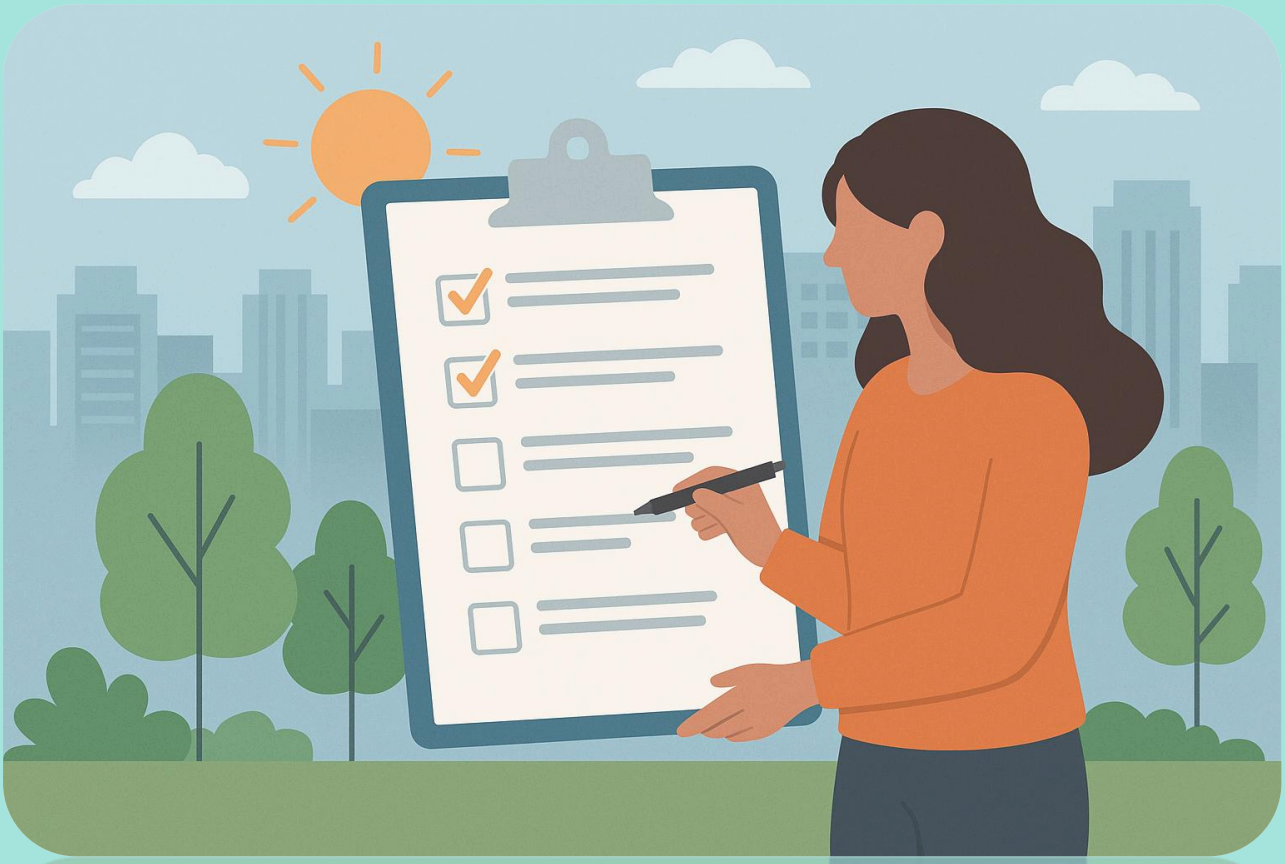
Green Urban Resilience



Report Title

Green Urban Resilience Survey: Analysis Of External Stakeholders' Perspective

GREEN CLIMATE CHANGE ADAPTATION SOLUTIONS FOR SMART AND RESILIENT CITIES IN BSB

GREEN URBAN RESILIENCE BSB00006

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GREEN URBAN RESILIENCE SURVEY: ANALYSIS OF EXTERNAL STAKEHOLDERS' PERSPECTIVE

SECTION 1: MEASURING CLIMATE PERCEPTION

The first part of the questionnaire was regarding assessing the participant's perceptions of climate change. This part consists of 13 questions.

Q1. How much do you know about climate change?

- In Uzunköprü Municipality, 59.5% of the participants reported having a moderate level of knowledge, while 23% were considered to have a high level of knowledge.
- In Sozopol Municipality, 60.8% of participants indicated a moderate level of knowledge whereas 19.0 mentioned having a low level of knowledge
- In Kavala, 52.8% respondents identified their knowledge level as moderate and 28.2% rated as high.
- Among the participants from Batumi, 39.2% rated their knowledge as moderate, while 29.9% stated that they have little knowledge

These findings highlight variations in climate change awareness across municipalities, with a predominant trend of moderate knowledge levels among respondent. Overall, the level of knowledge regarding climate change is at a moderate level at all partner municipalities.

The comparisons of the municipalities are presented in the table below.

Table 1: Participants' evaluation on their knowledge level about climate change

	5 (%)	**4 (%)**	**3 (%)**	**2 (%)**	1 (%)
Uzunköprü	23.9	59.4	7	8.5	1.2
Sozoppol	11.5	60.8	7.5	19	1.2
Kavala	28.2	52.8	6.4	12.3	-
Batumi	4.6	39.2	10.3	29.9	2.6

5. I have a lot of knowledge
4. I have moderate knowledge
3. Unsure
2. I have little knowledge
1. I have no knowledge

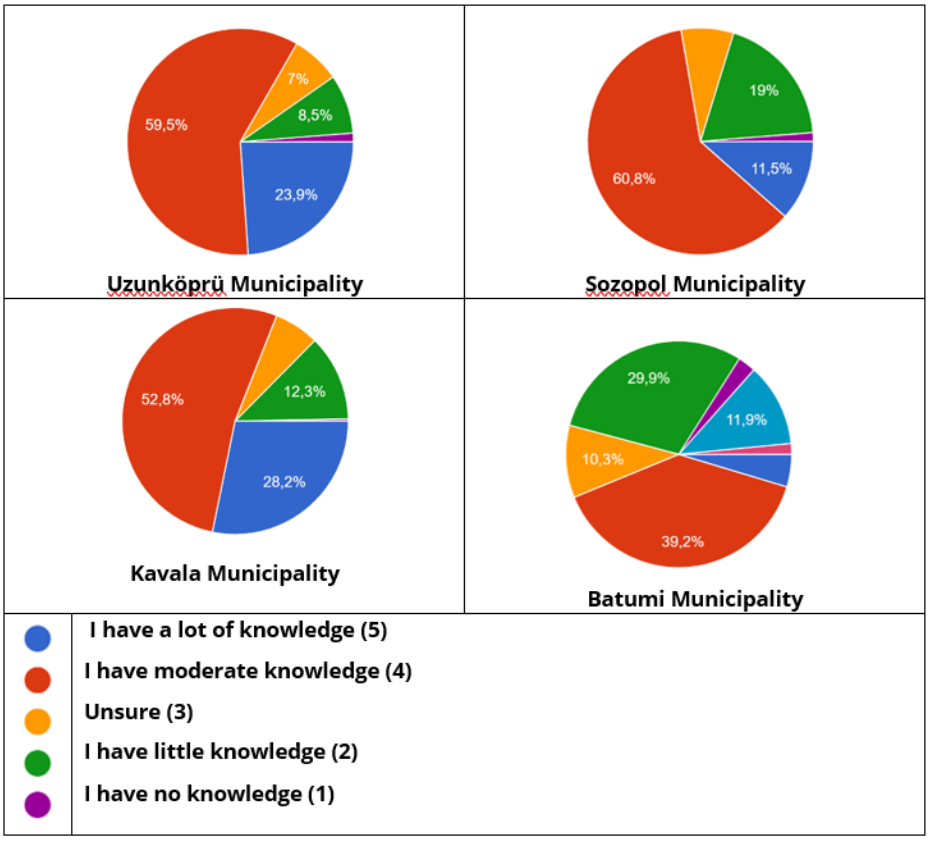


Figure 1: Distribution graph of participants' knowledge level about climate

Q2. What comes to mind first when you think of climate change? (select up to 3 options)

In this section, the three most preferred items are evaluated.

- In Uzunköprü, the majority of the participants (61.9%) primarily associated climate change with rising temperatures, followed by the seasonal changes (49%) and the melting of glaciers (48%).
- In Szopol, the most frequently mentioned climate change indicators were rising temperatures (68.3%), followed by seasonal changes (42.8%) and melting glaciers (42.5%).
- For Kavala, the related ranking was rising temperatures (78.5%), melting of glaciers (42.5%) and drought /water scarcity (35.6%).
- In Batumi, the most commonly cited factor was raising temperatures (76.8%) followed by melting glaciers (53.6%) and seasonal changes (37.1%).
- Rising temperatures was the most recognized factor across all the partner municipalities. Glacial melting, seasonal schanges and drought/water scarcity were the other highlighted factors.

The three most preferred factors for the participants from the partner municipalities can be found in the table below:

Table 2: Participants' evaluation on climate-related factors

	1st climate-related factor	2nd climate-related factor	3rd climate-related factor
Uzunköprü	rising temperatures (61.9%)	seasonal changes (49%)	melting of glaciers (48%)
Sozopol	rising temperatures (68.3%)	seasonal changes (42.8%)	melting of glaciers (42.5%)
Kavala	rising temperatures (78.5%)	melting of glaciers (42.5%)	drought /water scarcity (35.6%)
Batumi	raising temperatures (76.8%)	melting of glaciers (53.6%)	seasonal changes (37.1%)

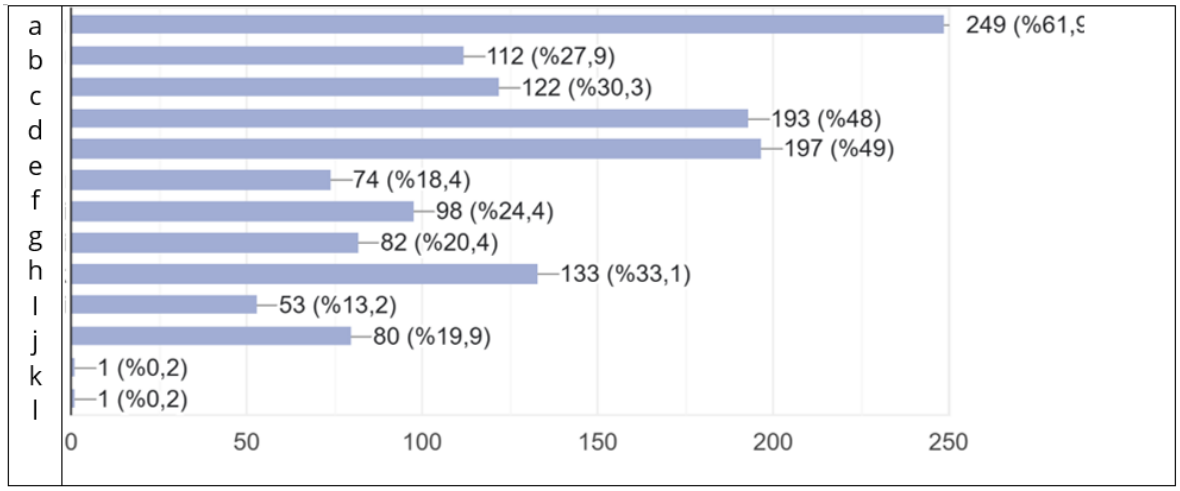


Figure 2: Participants' evaluation graphs regarding climate-related factors-Uzunköprü

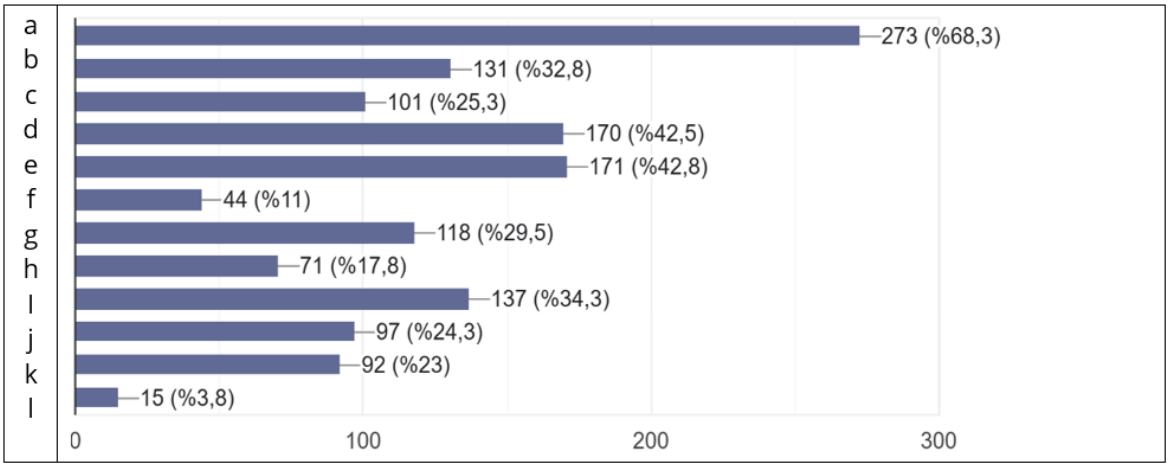


Figure 3: Participants' evaluation graphs regarding climate-related factors-Sozopol

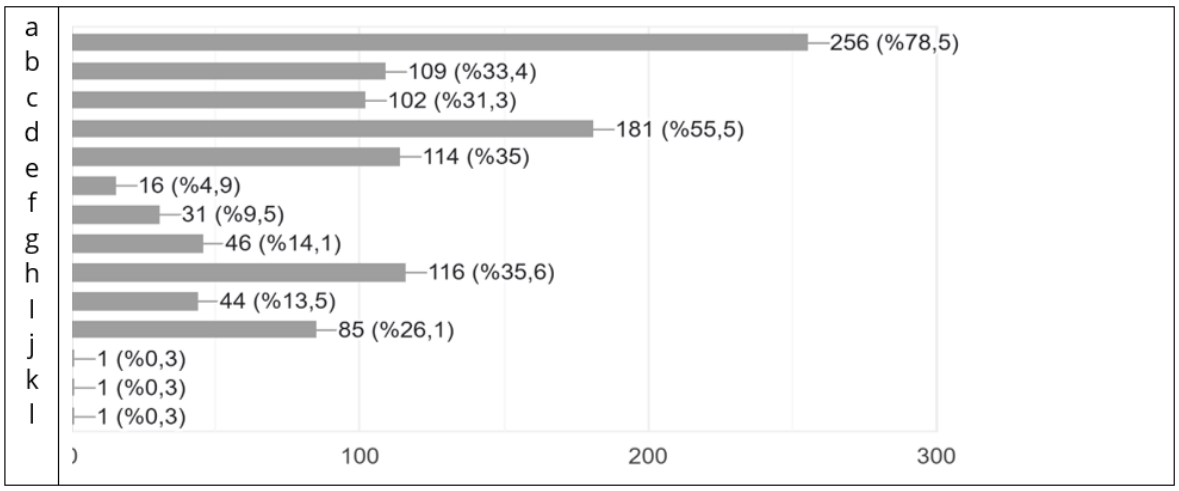


Figure 4: Participants' evaluation graphs regarding climate-related factors-Kavala

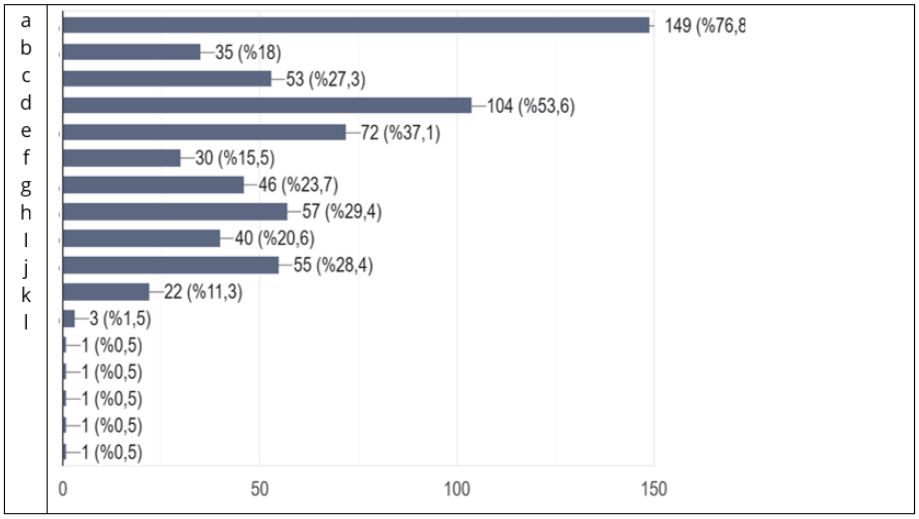


Figure 5: Participants' evaluation graphs regarding climate-related factors-Batumi

Table 3: Code and expression for 2nd Question

Code	Expression
a	Rising temperatures
b	Floods
c	Forest fires/deforestation
d	Melting glaciers/rising sea level
e	Seasonal changes
f	Degradation of green spaces
g	Ozone layer depletion
h	Air pollution
i	Drought/ water scarcity
j	Environmental pollution
k	Loss of biodiversity
l	Other

Q3. Do you think climate change affects your region?

- In Uzunköprü Municipality, 48% of the participants stated that they believe climate change has definitely affected their region, while 35.8% reported that it has had an impact.
- In Sozopol, 57.7% of the participants indicated that their region has been affected by climate change, while 37.3 % mentioned that it has definitely been impacted.
- In Kavala, 47.5% of respondents believed that climate change has definitely affected their region and 46% thought that it has had an impact.
- In Batumi, 15% of participants claimed that their region has definitely been affected by climate change, while 59.3% reported that it has been affected.

The perceived impact of climate change varies between municipalities, with the highest levels of certainty observed in Kavala and Sozopol, and a lower percentage of respondents in Batumi and Uzunköprü reporting a definite impact. The majority of the respondents in all municipalities considered the impact of climate change in their region to be very high or high.

The comparisons of the municipalities are presented in the table below.

Table 4: Participants' evaluation on climate- change affects

	5 (%)	**4 (%)**	**3 (%)**	**2 (%)**	**1 (%)**
Uzunköprü	48.8	35.8	11.2	3.7	0,5
Sozoppol	43	48.5	7.3	1.2	-
Kavala	47.3	46.3	6.1	-	-
Batumi	15.5	59.3	5.7	1	0.5

5. Definitely yes
4. Yes
3. Unsure
2. No
1. Definitely no

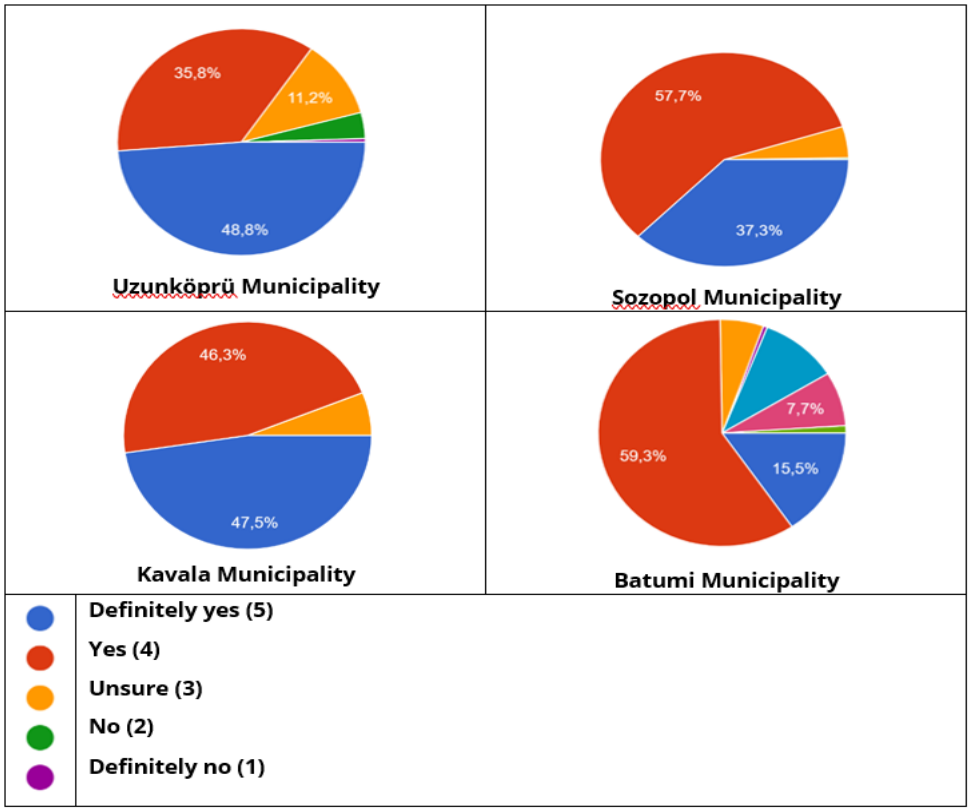


Figure 6: Participants' assessment graphs regarding the effects of climate change

Q4. Do you think climate change has negative consequences?

- In Uzunköprü Municipality, 60% of participants believe that climate change definitely has negative consequences, while 23.4% stated that it has negative consequences.
- In Sozopol Municipality, 48.5% of the participants indicated that climate change has negative effects, and 43% claimed that it definitely has negative effects.
- In Kavala Municipality, 64.7% of participants mentioned that climate change definitely has negative effects, while 31% believe that there are negative effects.
- In Batumi Mnicipality, 32% of participants staeted thet there are definitely negative effects, and 43.3% believed that there are negative effects

The responses from participants across these municipalities showed a general recognition of the negative impacts of climate change, with varying degrees of certainty. Participants from Kavala and Uzunköprü expressed a stronger conviction that climate change has definite negative consequences, while those from Batumi and Sozopol acknowledged the negative impacts but with slightly less certainty

Table 5: Participants' evaluation on negative affects of climate- change

	5 (%)	**4 (%)**	**3 (%)**	**2 (%)**	**1 (%)**
Uzunköprü	60	23	10.2	4.5	1.5
Sozoppol	43	48	7.3	1.2	-

Kavala	64.7	31	3.7	3.7	-
Batumi	32	43.3	3.1	1	1

5. Definitely yes
4. Yes
3. Unsure
2. No
1. Definitely no

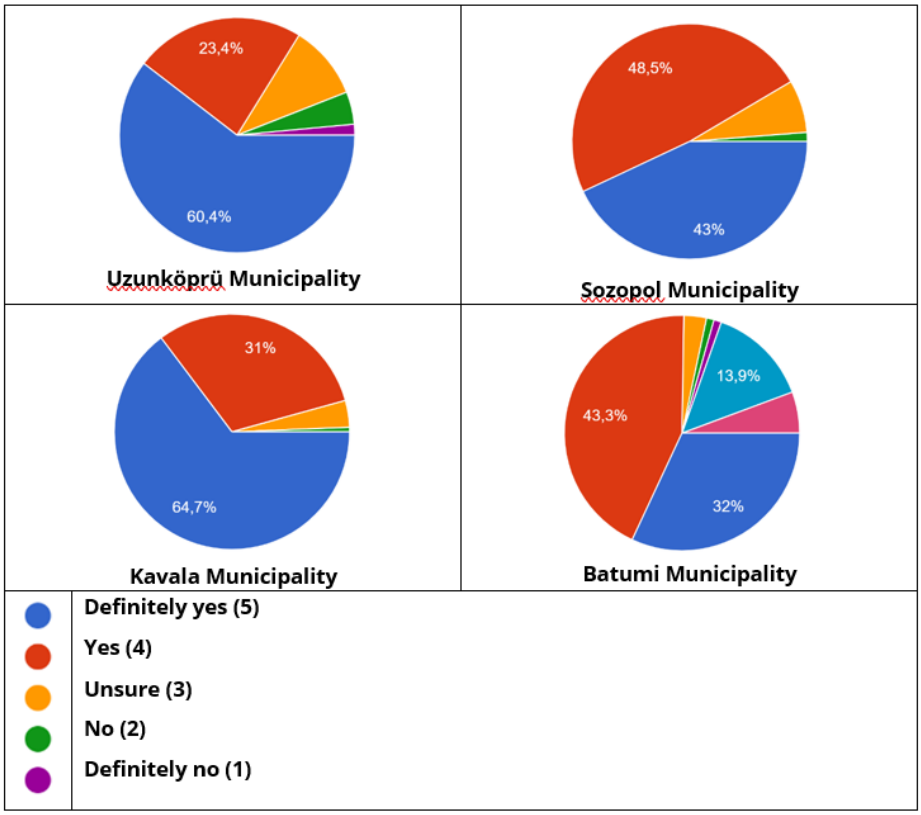


Figure 7: Participants' evaluation graphs regarding the negative effects of climate change

Q5. How would you rate the impact levels of the factors that cause climate change? (5 is most impactful, 1 is least impactful)

- In Uzunköprü Municipality, the most effective factors in climate change are reduction of green spaces (f=271), waste (f=234), overuse of natural resources (f=228), forest fires (f=228), industry (f=225), overpopulation (f=219), rapid urbanization (f=205), fossil fuel usage (f=189), and overconsumption (f=189).
- In Sozopol Municipality, the most significant factors contributing to climate change are the reduction of green spaces (f=291), waste (f=245), industry (f=201), forest fires (f=197), transportation (f=154), overuse of natural resources (f=152), and overconsumption (f=142).
- In Kavala Municipality, the leading factors influencing climate change are forest fires (f=176), industry (f=172), overuse of natural resources (f=166), reduction of green spaces (f=155), waste (f=149), and fossil fuel usage (f=146).

- In Batumi Municipality, the most effective factors in climate change are the reduction in green spaces (f=117), waste (f=105), forest fires (f=98), transportation (f=98), overuse of natural resources (f=97), fossil fuel consumption (f=91), industry (f=80), and natural processes (f=54).

Across all municipalities, the decrease in green spaces and waste management emerge as critical concerns in climate change. Additionally, the excessive use of natural resources and forest fires are consistently perceived as major contributors. While industrial activities are highlighted in most municipalities, transportation is particularly emphasized in Sozopol and Batumi.

The three most highlighted factors for the participants from the partner municipalities can be found in the table below.

Table 6: Participants' evaluation on causes of climate change

	1st most effective factor	**2nd most effective factor**	**3rd most effective factor**
Uzunköprü	Decrease in green spaces (f=271)	Waste (f=234)	Excessive use of natural resources / Forest fires (f=228)
Sozopol	Decrease in green spaces (f=291)	Waste (f=245)	Industry (f=201)
Kavala	Forest fires (f=176)	Industry (f=172)	Excessive use of natural resources (f=166)
Batumi	Decrease in green spaces (f=117)	Waste (f=105)	Forest fires / Transportation (f=98)

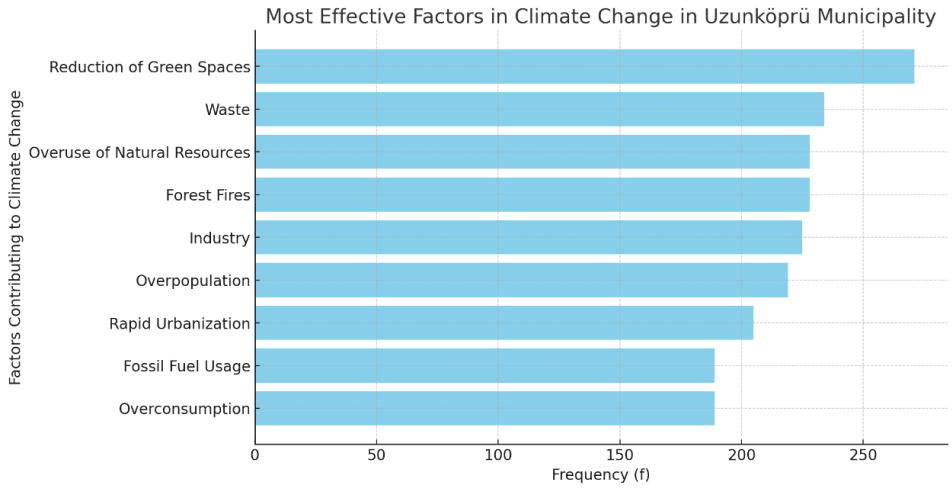


Figure 8: Most effective factors in climate change in Uzunköprü Municipality

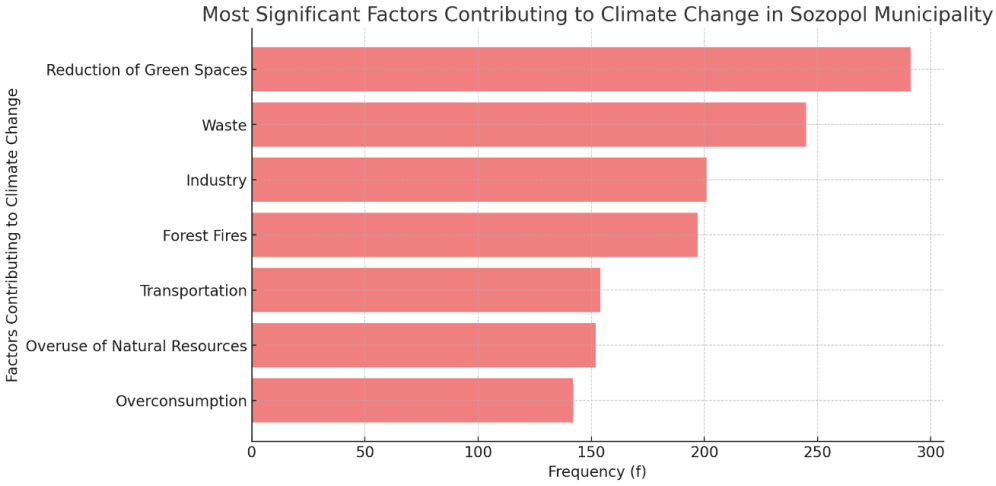


Figure 9: Most significant factors contributing to climate change in Sozopol Municipality

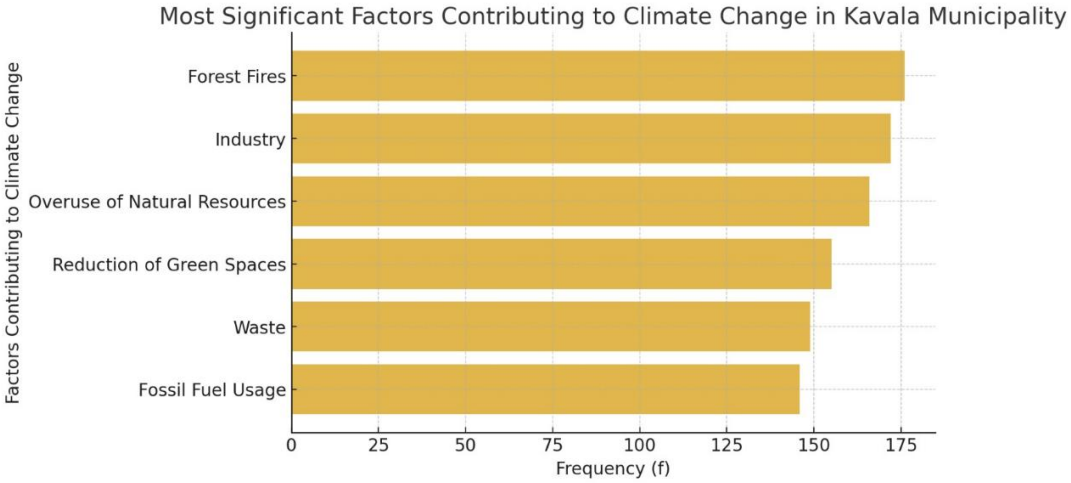


Figure 10: Most significant factors contributing to climate change in Kavala Municipality

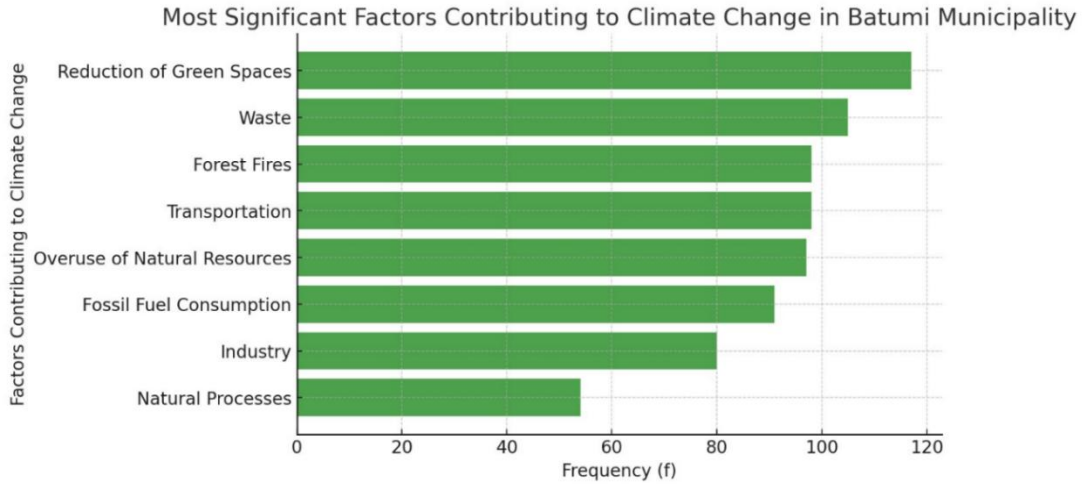


Figure 11: Most significant factors contributing to climate change in Batumi Municipality

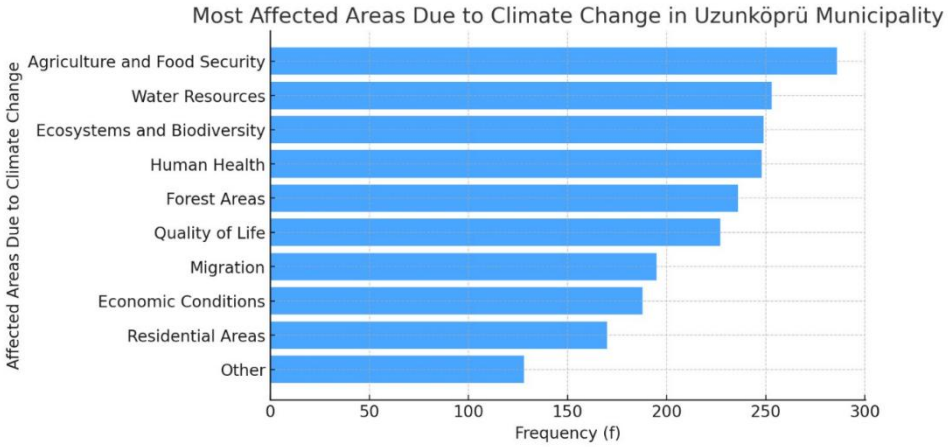
Q6. How do you think the issues listed below will be affected by the possible consequences of climate change

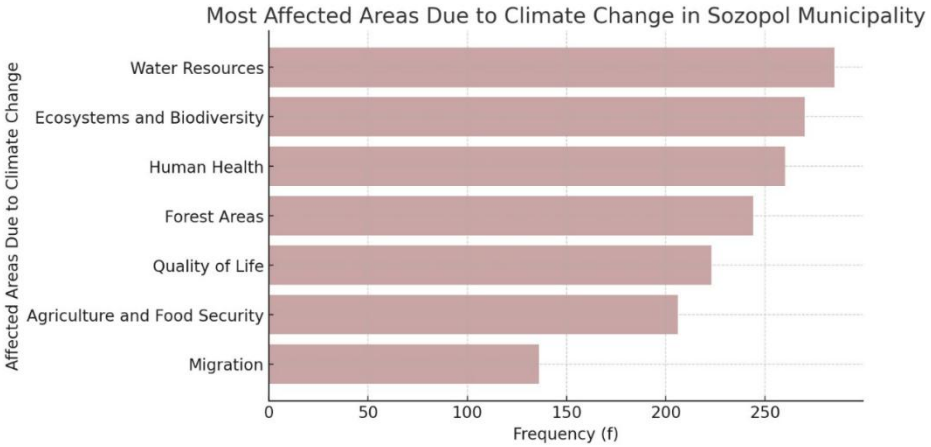
- In Uzunköprü Municipality, the most affected areas due to climate change are expected to be agriculture and food security (f=286), water resources (f=253), ecosystems and biodiversity (f=249), human health (f=248), forest areas (f=236), quality of life (f=227), migration (f=195), economic conditions (f=188), residential areas (f=170), and other (f=128) respectively.
- In Sozopol Municipality, the most significant areas expected to be affected by climate change include water resources (f=285), ecosystems and biodiversity (f=270), human health (f=260), forest areas (f=244), quality of life (f=223), agriculture and food security (f=206), and migration (f=136) respectively.
- In Kavala Municipality, the key areas estimated to be affected by climate change are water resources (f=210), ecosystems and biodiversity (f=205), forest areas (f=183), quality of life (f=165), agriculture and food security (f=164), migration (f=162), and other (f=106).
- In Batumi Municipality, the most vulnerable areas to climate change impacts are human health (f=111), ecosystems and biodiversity (f=103), agriculture and food security (f=96), water resources (f=95), quality of life (f=87), forest areas (f=85), economic conditions (f=64), residential areas (f=60), and other (f=52).

The most frequently identified issues across all municipalities are water resources, ecosystems and biodiversity, and agriculture and food security. Human health is particularly emphasised in Batumi and Sozopol, while forest areas are identified as a significant factor in all locations. Additionally, quality of life and migration are identified as concerns, indicating the socio-economic implications of climate change.

Table 7: Participants' evaluation on consequences of climate change

	1st Most Affected Area	2nd Most Affected Area	3rd Most Affected Are
Uzunköprü	Agriculture and food security (f=286)	Water resources (f=253)	Ecosystems and biodiversity (f=249)
Sozoppol	Water resources (f=285)	Ecosystems and biodiversity (f=270)	Human health (f=260)
Kavala	Water resources (f=210)	Ecosystems and biodiversity (f=205)	Forest areas (f=183)
Batumi	Human health (f=111)	Ecosystems and biodiversity (f=103)	Agriculture and food security (f=96)





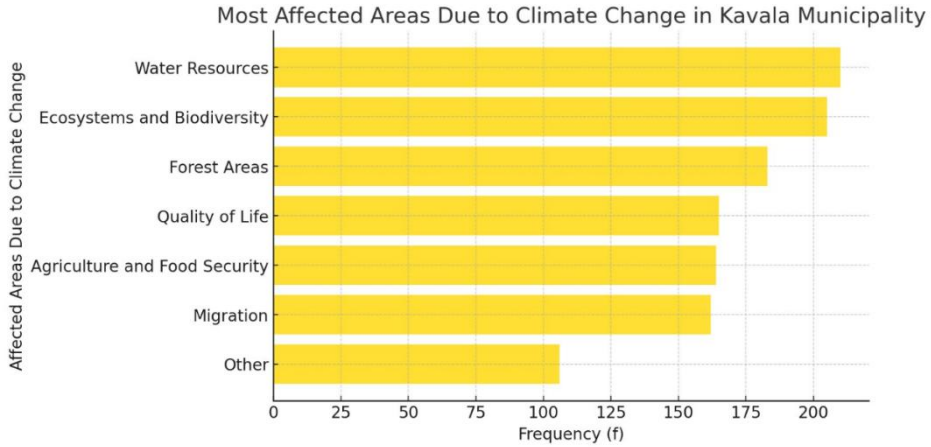


Figure 14: Most affected areas due to climate change in Kavala Municipality

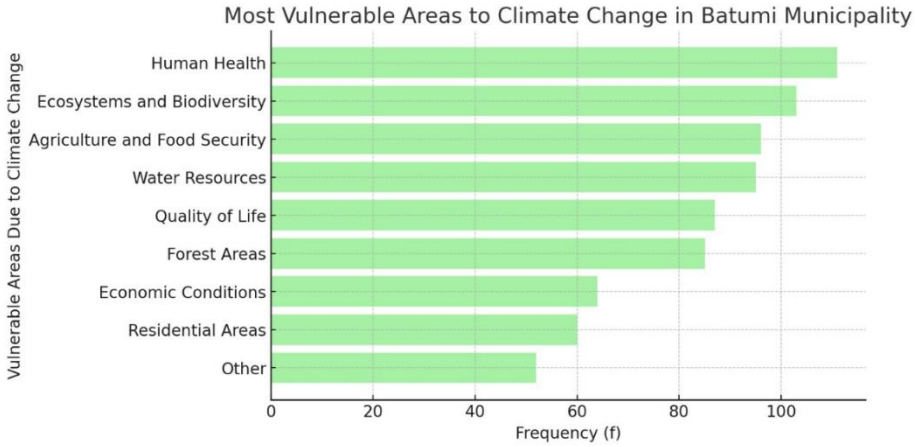


Figure 15: Most affected areas due to climate change in Batumi Municipality

Q7. Can climate change be combated?

- In Uzunköprü Municipality, 45% of participants believed that climate change can be conbated, while 35.6% stated that it can definitely be combated.
- In Sozopol Municipality, 30.5% of participants thought that climate change can be combated, whereas 45.8% remained undecided on the aspect.
- In Kavala Municipality, 42.3% of participants believed that climate change can be combated, while 39.6% are uncertain about this possibility.
- In Batumi Municipality, 26.8% of participants stated that climate change can definitely be mitigated, while 53.1% believed that it can be mitigated.

Although the participants' views on climate change mitigation vary between municipalities, a significant percentage of respondents in Uzunköprü and Batumi believe that mitigation is possible. However a higher rate of indecision was observed in Sozopol and Kavala.

Table 8: Participants' evaluation on negative affects of climate- change

	5 (%)	4 (%)	3 (%)	2 (%)	1 (%)
Uzunköprü	35.6	45	15.9	2.7	0.7
Sozoppol	9	30.5	45.8	12.7	2
Kavala	14.7	42.3	39.6	2.8	0.6
Batumi	26.8	53.1	11.3	1	0.5

5. Definitely yes
4. Yes
3. Unsure
2. No
1. Definitely no

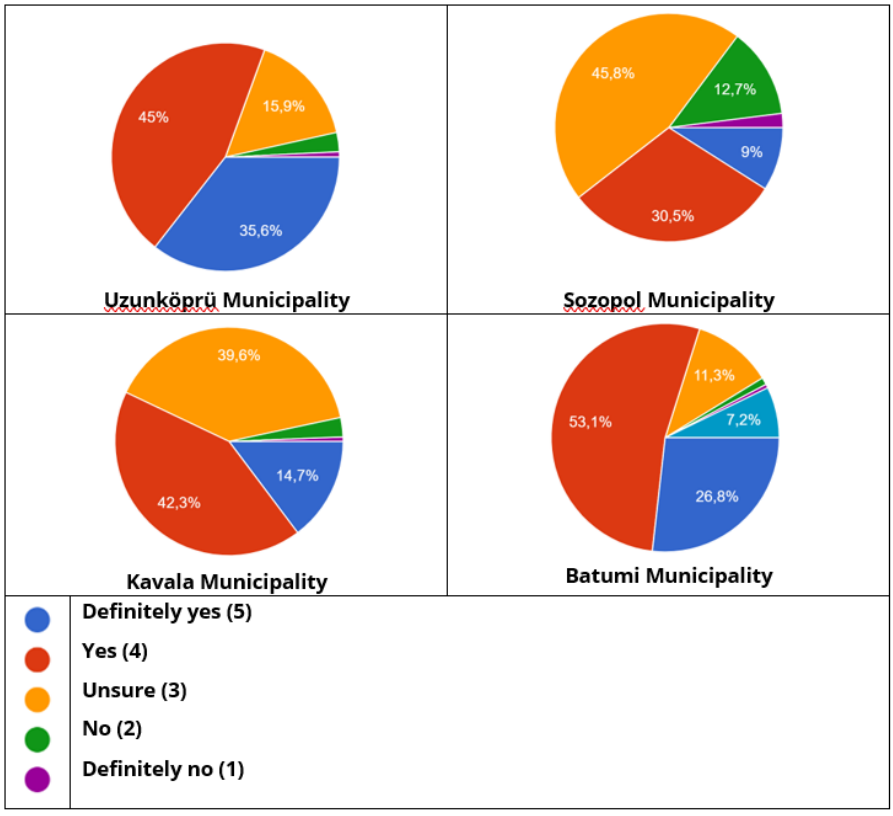


Figure 16: Percentage distribution chart of respondents' opinions on combating climate change

Q8. Which organizations are most effective in combating climate change? (Select up to 3 options)

In this section, the three most preferred items are evaluated.

- In Uzunköprü, participants identified National Authorities (85.6%) and Local Authorities (76.9%) as the most effective organizations, followed by Civil Society Organizations (48%).
- In Szopol, participants identified National Authorities (64.3%) and International Collaborations (60.3%) as the most effective organizations, followed by Local Authorities (44.5%).
- In Kavala, participants identified International Collaborations (74.2%) and National Authorities (71.5%) as the most effective organizations, followed by Local Authorities (42.3%).
- In Batumi, participants identified International Collaborations (63.4%) and National Authorities (57.7%) as the most effective organizations, followed by Local Authorities (53.6%).

National and Local Authorities, along with International Collaborations, were consistently identified as the most effective organizations in combating climate change across all locations.

The three most preferred factors for the participants from the partner municipalities can be found in the table below:

Table 9: Most Effective Organizations in Combating Climate Change: Survey Results by Location

Municipality	**1st effective organization**	**2nd effective organization**	**3rd effective organization**
Uzunköprü	National Authorities (85.6%)	Local Authorities (76.9%)	Civil Society Orgs. (48%)
Sozoppol	National Authorities (64.3%)	International Collab. (60.3%)	Local Authorities (44.5%)
Kavala	International Collab. (74.2%)	National Authorities (71.5%)	Local Authorities (42.3%)
Batumi	International Collab. (63.4%)	National Authorities (57.7%)	Local Authorities (53.6%)

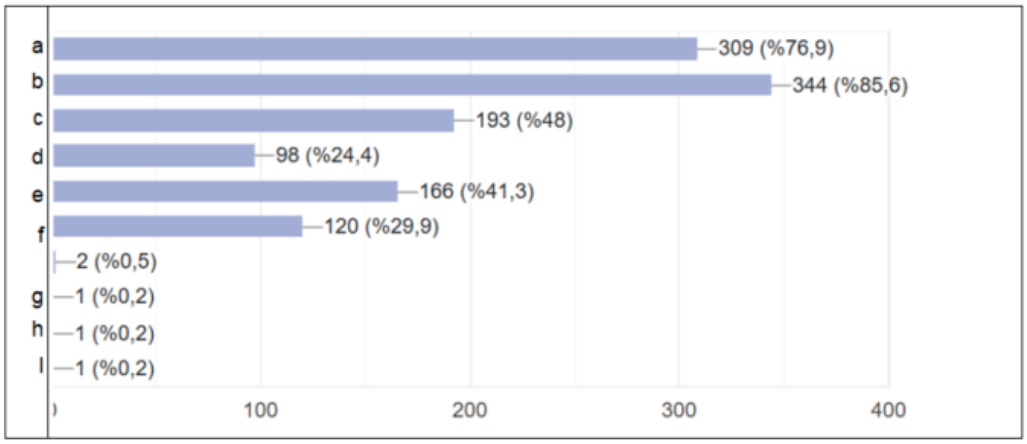


Figure 17: Most Effective Organizations in Combating Climate Change: Survey Results in Uzunköprü

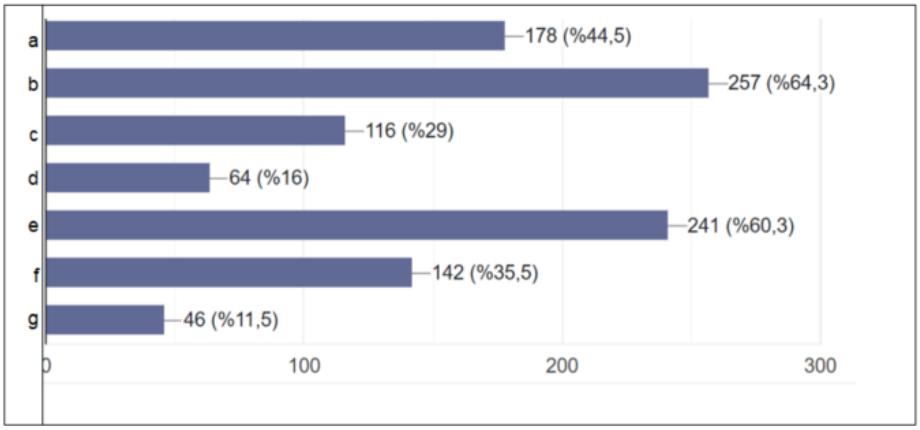


Figure 18: Most Effective Organizations in Combating Climate Change: Survey Results in Sozopol

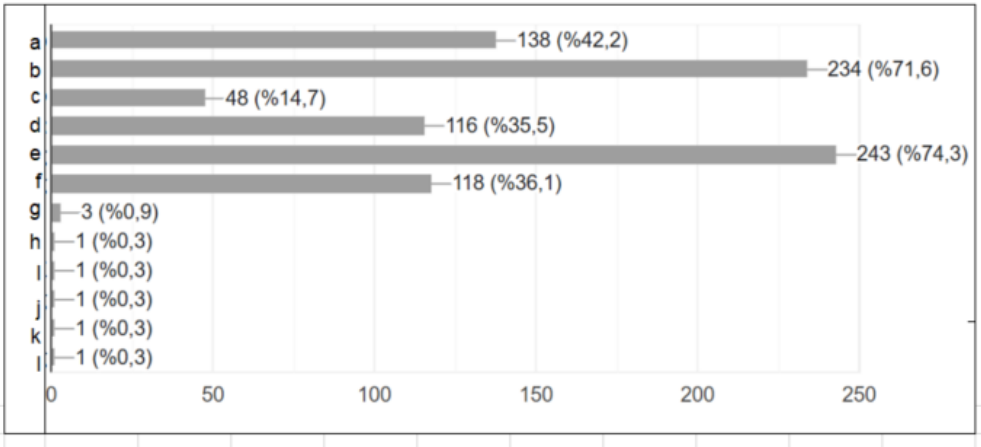


Figure 19: Most Effective Organizations in Combating Climate Change: Survey Results in Kavala

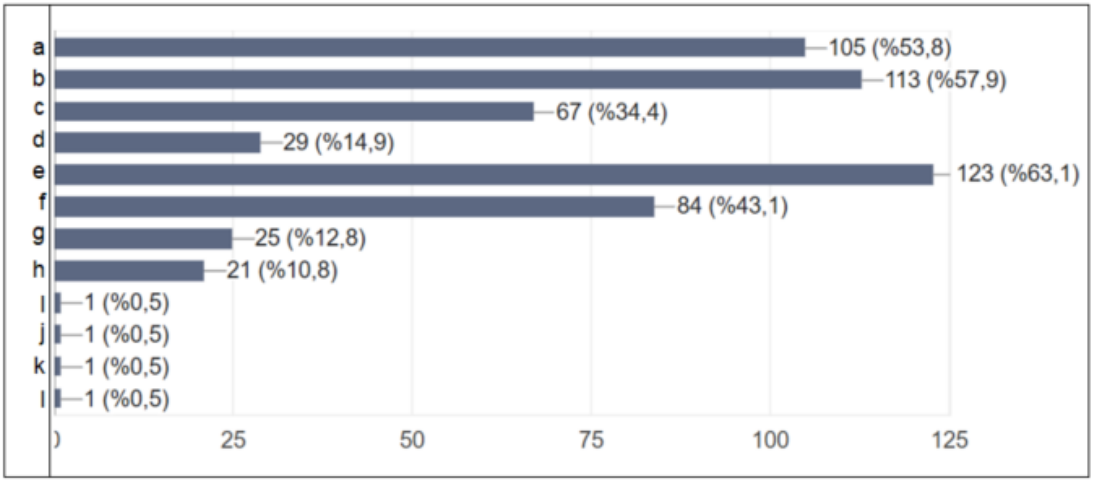


Figure 20: Most Effective Organizations in Combating Climate Change: Survey Results in Batumi

Table 10: Code and expression for Eight Question

Code	Expression
a	Local authorities (Municipalities)
b	National authorities (Ministries)
c	NGOs
d	Universities
e	International collaborations
f	Individual actions
g	Media
h	Social awareness, education
i	Local authorities (Municipalities)
j	National authorities (Ministries..)
k	NGOs
l	Universities

Q9. Please evaluate the impact level of measures (precautions) against climate change (5 is most effective, 1 is the least effective)

- In Uzunköprü, the most impactful measures against climate change were identified as renewable energy usage (f=296), increasing green spaces (f=256), and nature conservation projects (f=249).
- In Szopol, the most impactful measures against climate change were identified as increasing green spaces (f=303), waste management (f=262), and recycling (f=231).
- In Kavala, the most impactful measures against climate change were identified as waste management (f=193), increasing green spaces (f=168), and nature conservation projects (f=166).
- In Batumi, the most impactful measures against climate change were identified as increasing green spaces (f=122), education and awareness campaigns (f=117), and waste management (f=114).

Across all municipalities, increasing green spaces and waste management emerge as critical measures perceived to have a high impact in combating climate change. Additionally, nature conservation projects are consistently perceived as impactful. While renewable energy usage

is highlighted in Uzunköprü, education and awareness campaigns are particularly emphasized in Batumi.

Table 11: Participants' Evaluation on Impactful Climate Change Measures.

Municipality	1st impactful measure	2nd impactful measure	3rd impactful measure
Uzunköprü	Renewable Energy Usage (f=296)	Increasing Green Spaces (f=256)	Nature Conservation Projects (f=249)
Sozoppol	Increasing Green Spaces (f=303)	Waste Management (f=262)	Recycling (f=231)
Kavala	Waste Management (f=193)	Increasing Green Spaces (f=168)	Nature Conservation Projects (f=166)
Batumi	Increasing Green Spaces (f=122)	Education/Awareness Campaigns (f=117)	Waste Management (f=114)

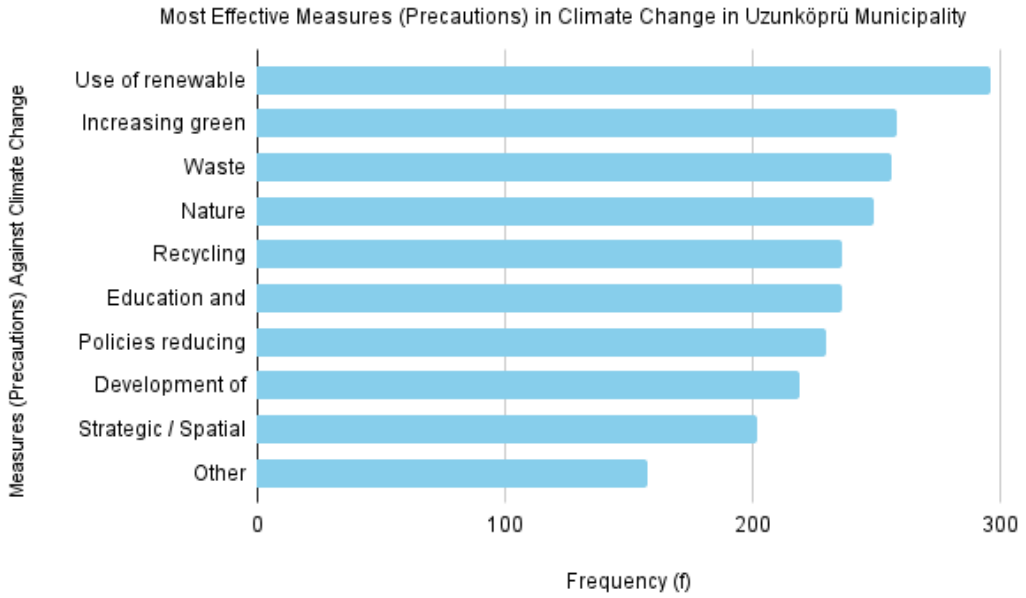


Figure 21: Most effective measures (precautions) in Climate Change in Uzunköprü

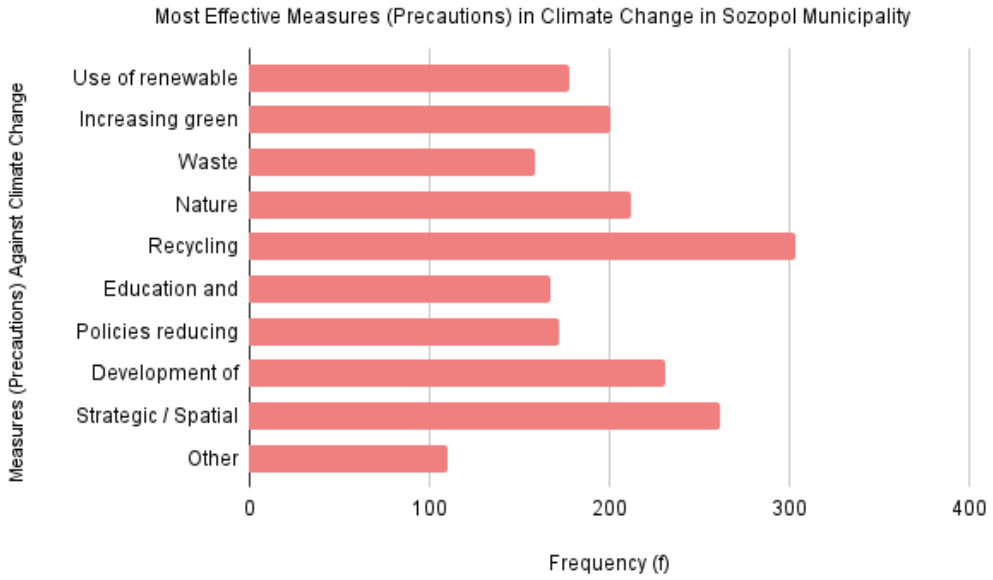


Figure 22: Most effective measures (precautions) in Climate Change in Sozopol

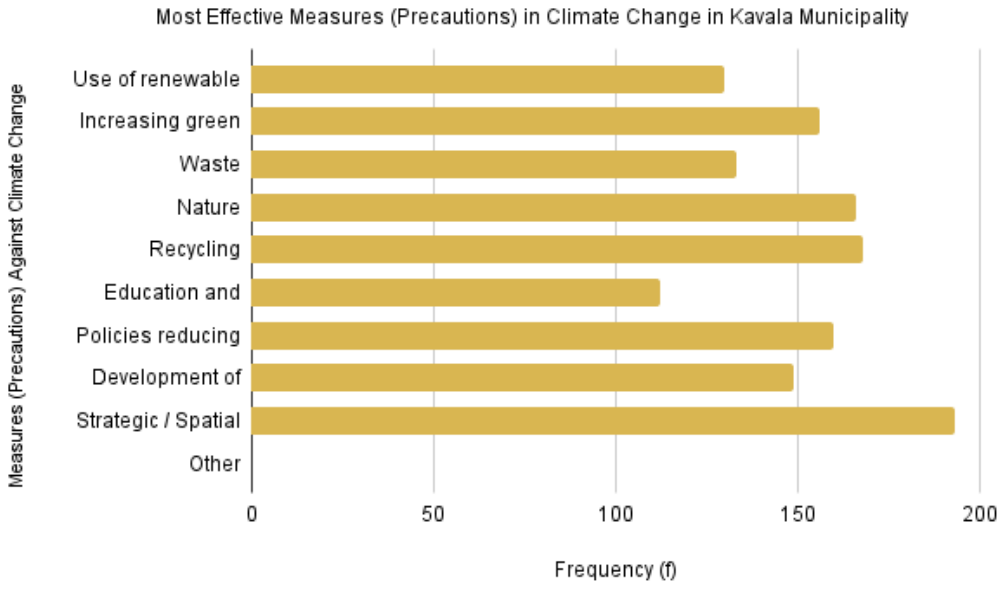


Figure 23: Most effective measures (precautions) in Climate Change in Kavala

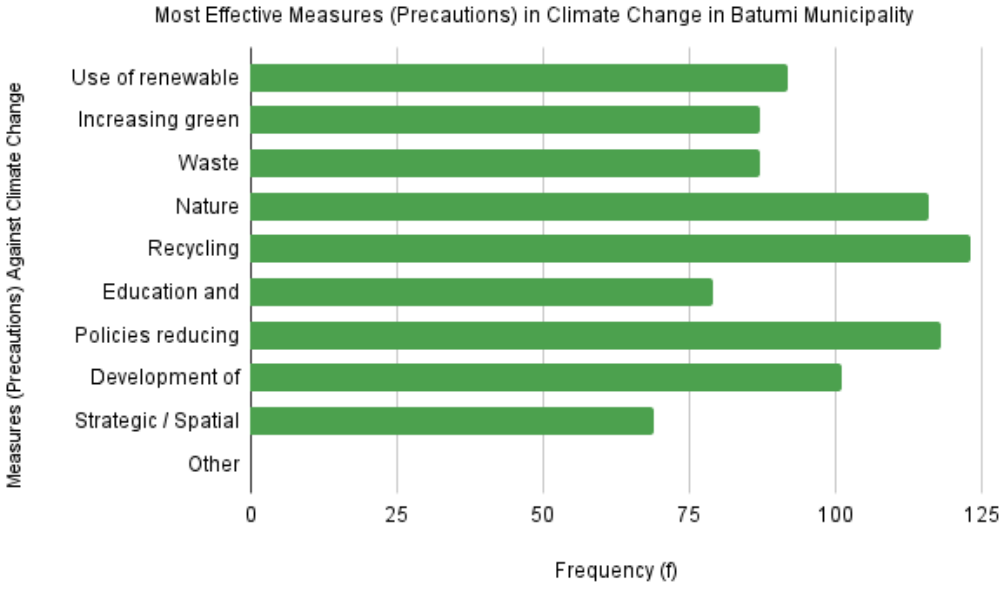


Figure 24: Most effective measures (precautions) in Climate Change in Batumi

Q10. Are you aware of the measures taken by public authorities regarding climate change?

- Uzunköprü Municipality: 35.1% of participants reported moderate awareness, with 11.2% feeling highly knowledgeable. A significant portion (29.1%) remained unsure, and 22.9% rated their awareness as slightly knowledgeable.
- Sozopol Municipality: 44.7% of participants were unsure, the highest uncertainty among the municipalities. Only 3.3% felt highly knowledgeable, and 27.3% reported moderate awareness.
- Kavala Municipality: 35.9% of participants had moderate awareness, with 33.4% unsure. A small percentage (4%) felt highly knowledgeable, but 25.8% rated themselves as slightly knowledgeable.
- Batumi Municipality: 37.4% had moderate awareness, with 23.6% unsure. 5.1% felt highly knowledgeable, while 17.9% rated their awareness as slightly knowledgeable.

Sozopol had the highest uncertainty, with many participants unsure about the measures. Kavala also showed considerable uncertainty, while Uzunköprü exhibited better awareness levels. Batumi participants had moderate awareness but lacked deep knowledge. These findings highlight the need for better communication and education on climate change measures, especially in Sozopol and Kavala.

Table 12: Public Awareness of Climate Change Measures

Municipality	**5 (%)**	**4 (%)**	**3 (%)**	**2 (%)**	**1 (%)**

Uzunköprü	11.2	35.1	29.1	22.9	1.7
Sozopol	3.3	27.3	44.7	22.5	2.2
Kavala	4	35.9	33.4	25.8	25.8
Batumi	5.1	37.4	23.6	17.9	4.1

5. Definitely yes
4. Yes
3. Unsure
2. No
1. Definitely no

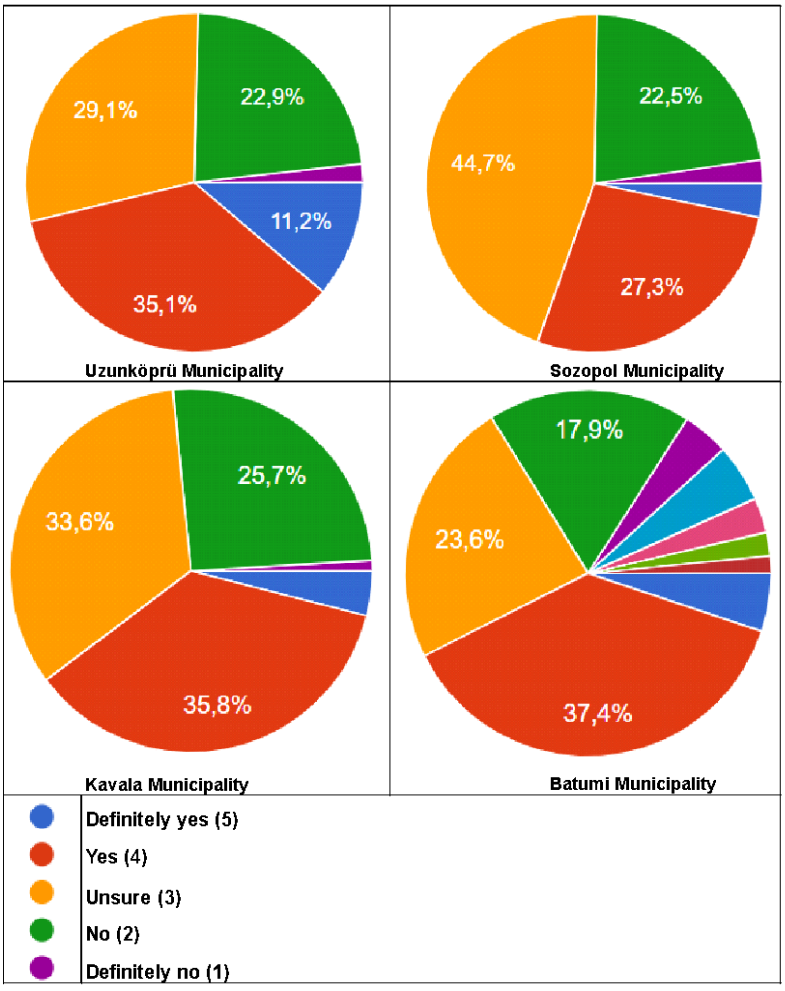


Figure 25:Graphs of Public Awareness of Climate Change Measures

Q11. Do you think the emergency preparedness measures (e.g., flood, drought) by public authorities are sufficient/enough?

- In Uzunköprü Municipality, 7.7% of participants believed that the emergency preparedness measures are definitely sufficient, while 15.9% stated that they are sufficient.
- In Sozopol Municipality, 1.5% of participants thought that the emergency preparedness measures are definitely sufficient, whereas 2.3% believed that they are sufficient. A notable 27.5% remained undecided on the aspect .
- In Kavala Municipality, 4.0% of participants believed that the emergency preparedness measures are definitely sufficient, while 35.8% are certain about their sufficiency. A considerable 33.6% were uncertain about this possibility .
- In Batumi Municipality, 4.6% of participants stated that the emergency preparedness measures are definitely sufficient, while 22.1% believed that they are sufficient. A significant 31.3% were uncertain.

Although the participants' views on the sufficiency of emergency preparedness measures vary between municipalities, a relatively small percentage of respondents in all municipalities strongly believe in their sufficiency. However, a higher rate of indecision was observed in Sozopol, Kavala, and Batumi.

Table 13: Participants' Evaluation of Emergency Preparedness Measures

Municipality	**5 (%)**	**4 (%)**	**3 (%)**	**2 (%)**	**1 (%)**
Uzunköprü	7.7	15.9	24.1	33.8	18.4
Sozopol	1.5	2.3	27.5	52.3	16.5
Kavala	4.0	35.8	33.6	25.7	0.9
Batumi	4.6	22.1	31.3	26.2	4.1

5.Definitely yes
4.Yes
3.Unsure
2.No
1.Definitely no

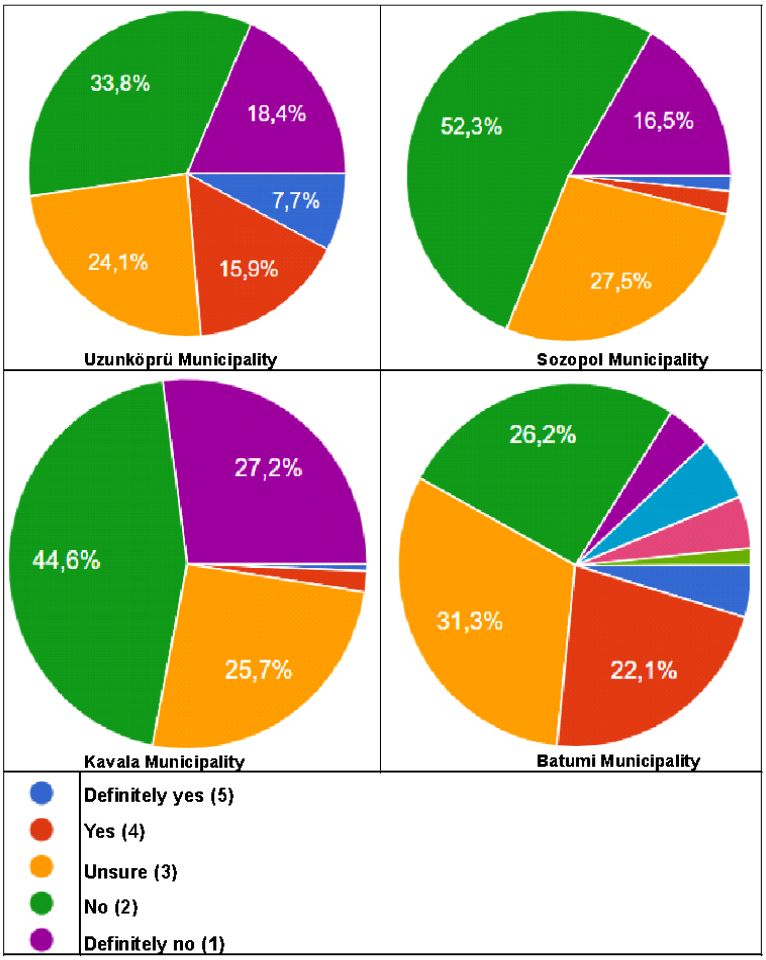


Figure 26: Graphs of Participants' Evaluation of Emergency Preparedness Measures

Q12. In which areas do public authorities take measures against climate change? (You can select multiple options)

In this section, the three most preferred areas where participants believe public authorities are taking measures are evaluated.

- In Uzunköprü Municipality, the majority of participants (49.3%) primarily associated public authority measures with renewable energy sources, followed by sustainable transportation solutions (42.5%) and waste management and recycling (43.8%).
- In Sozopol Municipality, the most frequently mentioned areas were renewable energy source promotion (50.2%), followed by sustainable transportation solutions (46.3%) and waste management and recycling (48.5%).
- For Kavala Municipality, the related ranking was renewable energy source promotion (60.9%), waste management activities (53.8%) and awareness raising and education (37.3%).
- In Batumi Municipality, the most commonly cited areas were green space improvement (59%), sustainable transportation solutions (57.4%) and forest and natural area protection (56.4%).

Renewable energy source promotion or usage was a highly recognized area across all the partner municipalities. Waste management, sustainable transportation and green space improvements were the other highlighted factors.

The three most preferred factors for the participants from the partner municipalities can be found in the table below:

Table 14: Participants' evaluation on Public Authority Measures Regarding Climate Change

Municipality	**1st preferred area**	**2nd preferred area**	**3rd preferred area**
Uzunköprü	Renewable energy sources (49.3%)	Waste management and recycling (43.8%)	Sustainable transportation solutions (42.5%)
Sozopol	Renewable energy source promotion (50.2%)	Waste management and recycling (48.5%)	Sustainable transportation solutions (46.3%)
Kavala	Renewable energy source promotion (60.9%)	Waste management activities (53.8%)	Awareness raising and education (37.3%)
Batumi	Green space improvement (59%)	Sustainable transportation solutions (57.4%)	Forest and natural area protection (56.4%)

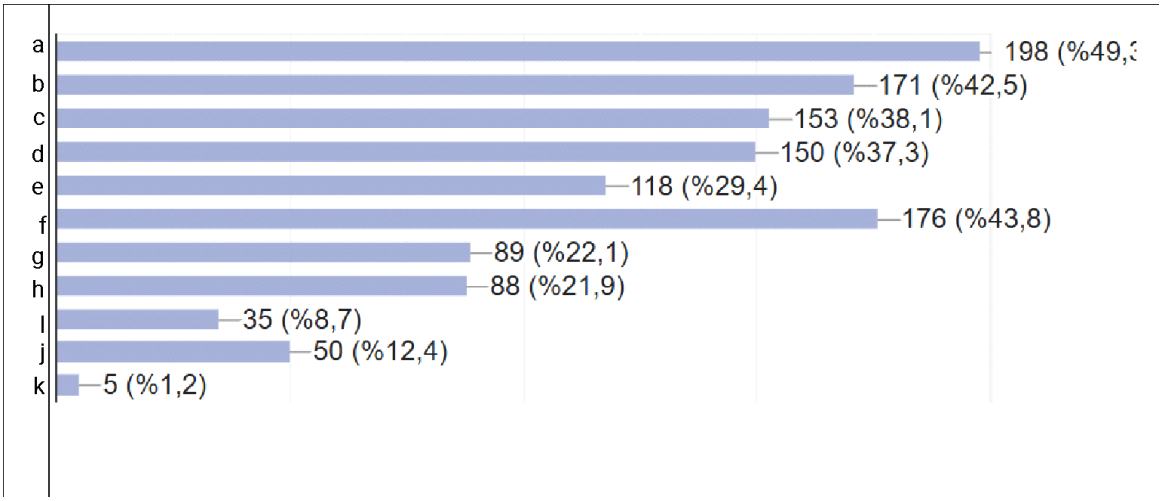


Figure 27: Participants' evaluation on Public Authority Measures Regarding Climate Change in Uzunköprü

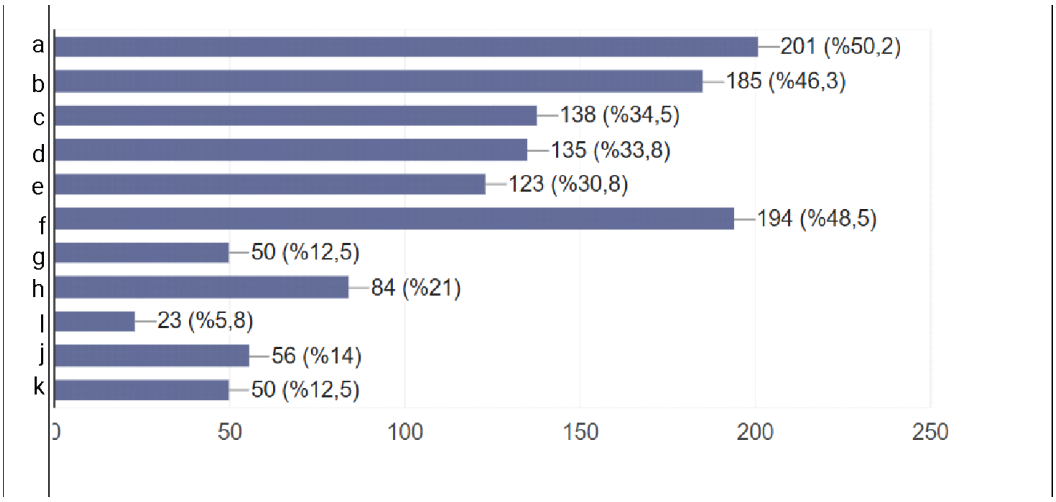


Figure 28: Participants' evaluation on Public Authority Measures Regarding Climate Change in Sozopol

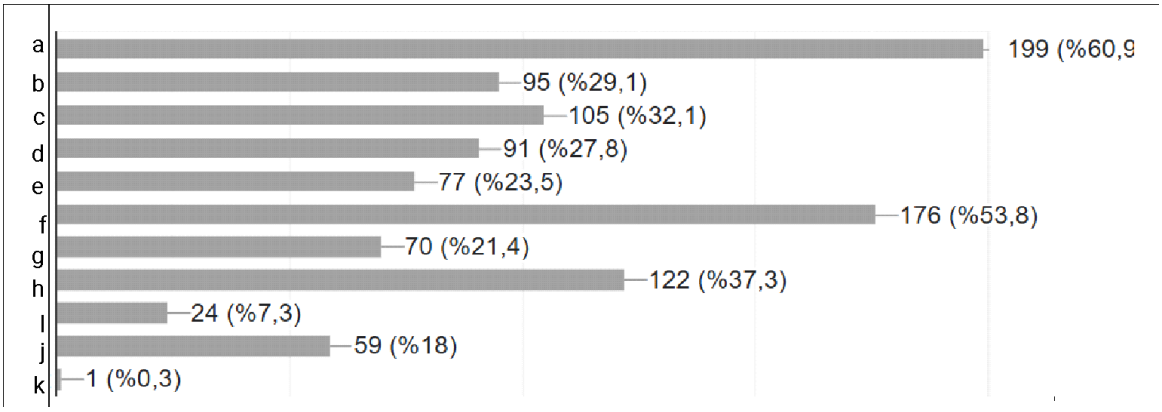


Figure 29: Participants' evaluation on Public Authority Measures Regarding Climate Change in Kavala

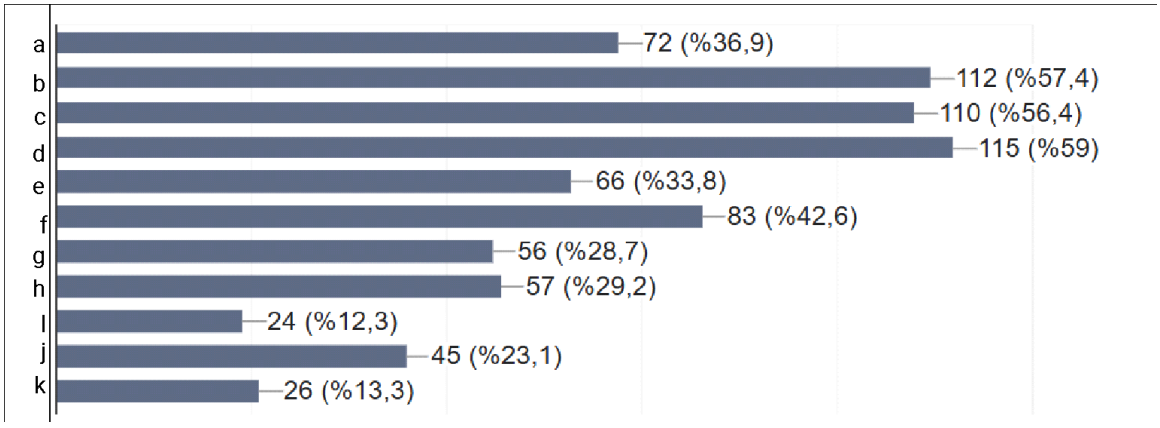


Figure 30: Participants' evaluation on Public Authority Measures Regarding Climate Change in Batumi

Table 15: Code and expression fort twelfth question

Code	Expression

a	Promoting renewable energy sources
b	Sustainable transport solutions (public transport, bike lanes)
c	Protecting forests and natural areas
d	Improving/developing green spaces
e	Protecting water resources
f	Waste management and recycling activities
g	Infrastructure improvement against natural disasters
h	Raising awareness and educational campaigns on climate change
i	Reducing urbanization and impervious surfaces
j	Creating spatial and strategic plans
k	Other

Q13. In which areas do public authorities take measures against climate change? (You can select multiple options).

In this section, the three most preferred information sources are evaluated.

- In Uzunköprü Municipality, the majority of the participants (82.3%) primarily access information on climate change through social media, followed by television/news bulletins (63.9%) and internet sources (60.9%).
- In Sozopol Municipality, the most frequently mentioned information sources were internet sources (71.8%), followed by television/news bulletins (54%) and social media (49.5%).
- For Kavala Municipality, the related ranking was internet sources (74.9%), social media (41.3%) and television/news bulletins (34.3%).
- In Batumi Municipality, the most commonly cited sources were internet sources (70.8%), followed by social media (66.7%) and television/news bulletins (47.2%).

Internet sources and social media were the most recognized information sources across all the partner municipalities. Television/news bulletins were also a significant source, while newspapers/magazines and NGOs were less preferred.

The three most preferred information sources for the participants from the partner municipalities can be found in the table below:

Table 16: Participants' evaluation on public authorities take measures against climate change

Municipality	**1st preferred source**	**2nd preferred source**	**3rd preferred source**
Uzunköprü	Social media (82.3%)	Television/news bulletins (63.9%)	Internet sources (60.9%)
Sozopol	Internet sources (71.8%)	Television/news bulletins (54%)	Social media (49.5%)
Kavala	Internet sources (74.9%)	Social media (41.3%)	Television/news bulletins (34.3%)
Batumi	Internet sources (70.8%)	Social media (66.7%)	Television/news bulletins (47.2%)

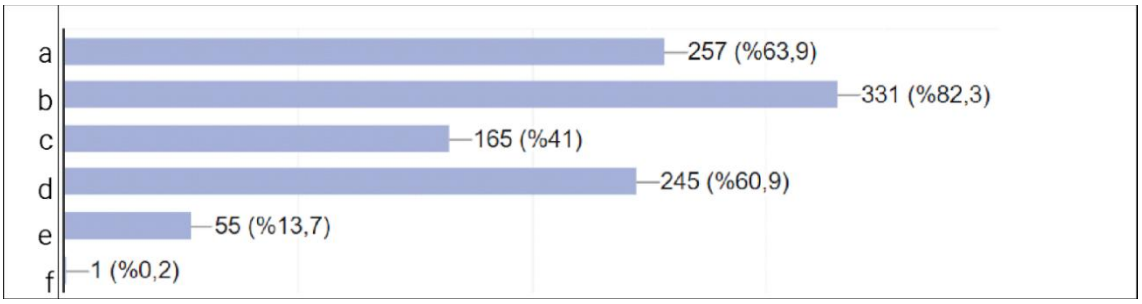


Figure 31: Graph of Participants' evaluation on public authorities take measures against climate change in Uzunköprü

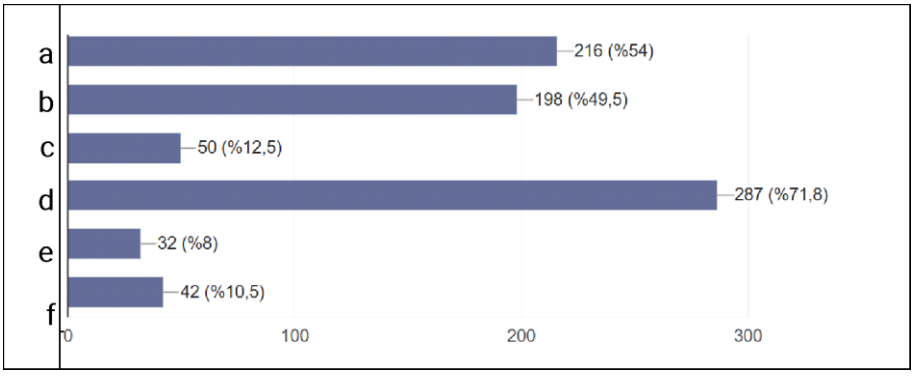


Figure 32: Graph of Participants' evaluation on public authorities take measures against climate change in Sozopol

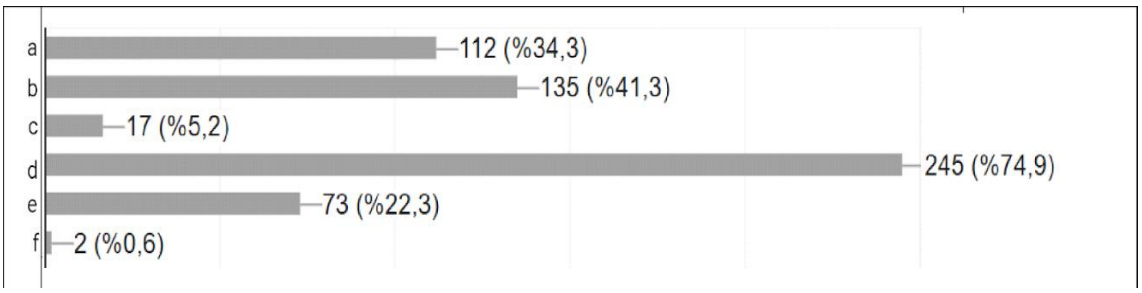


Figure 33: Graph of Participants' evaluation on public authorities take measures against climate change in Kavala

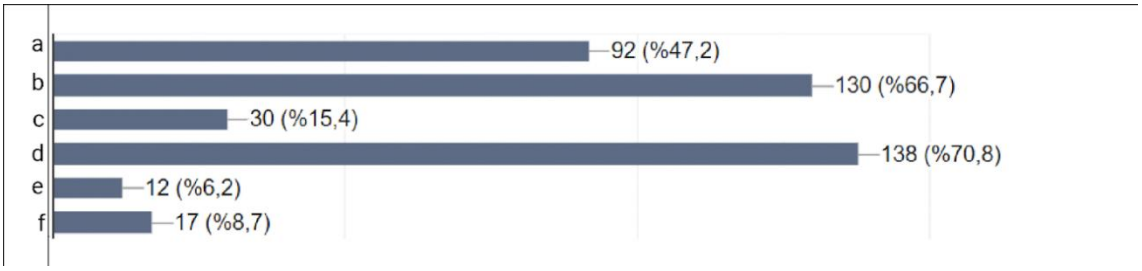


Figure 34: Graph of Participants' evaluation on public authorities take measures against climate change in Batumi

Table 17: : Code and expression fort thirteenth question

Code	Expression
a	Television / News broadcasts

b	Social media
c	NGOs
d	Internet sources
e	Newspapers / Magazines
f	Others

SECTION 2: CLIMATE CHANGE AND GREEN SPACE IMPACT

Q14. Are you knowledgeable about the importance of urban green spaces in mitigating climate change?

- In Uzunköprü Municipality, the majority of participants (51.5%) reported having a moderate level of knowledge, with 21.1% considering themselves highly knowledgeable. This suggests that the knowledge level is predominantly at an average level.
- In Sozopol Municipality, 52% of participants rated their knowledge as moderate, while 16.8% considered themselves highly knowledgeable. The responses show a wider distribution of knowledge levels, with 5% stating they have low knowledge.
- In Kavala Municipality, 54.1% of respondents rated their knowledge as moderate, and 24.2% felt they were highly knowledgeable. This indicates a slightly higher proportion of highly knowledgeable participants compared to the other municipalities.
- In Batumi Municipality, 43.1% of participants reported moderate knowledge, and a notable 14.9% felt they had low knowledge. This shows a more varied distribution, with a larger number of people reporting low knowledge.

In all municipalities, the majority of participants reported moderate knowledge about emergency preparedness measures. Kavala and Sozopol had higher percentages of highly knowledgeable participants, while Batumi showed a higher proportion of participants with low knowledge. Overall, knowledge tends to be concentrated at a moderate level across the municipalities.

Table 18: Participants' Knowledge on the Importance of Urban Green Spaces in Mitigating Climate Change

Municipality	**5 (%)**	**4 (%)**	**3 (%)**	**2 (%)**	**1 (%)**
Uzunköprü	21.1	51.5	14.4	10.7	2.2
Sozopol	16.8	52	12.7	13.5	5
Kavala	24.2	54.1	9.5	10.7	1.5
Batumi	11.8	43.1	14.9	11.8	2

5.I am very knowledgeable
4.I am moderately knowledgeable
3.Unsure
2.I am slightly knowledgeable
1.I am not knowledgeable

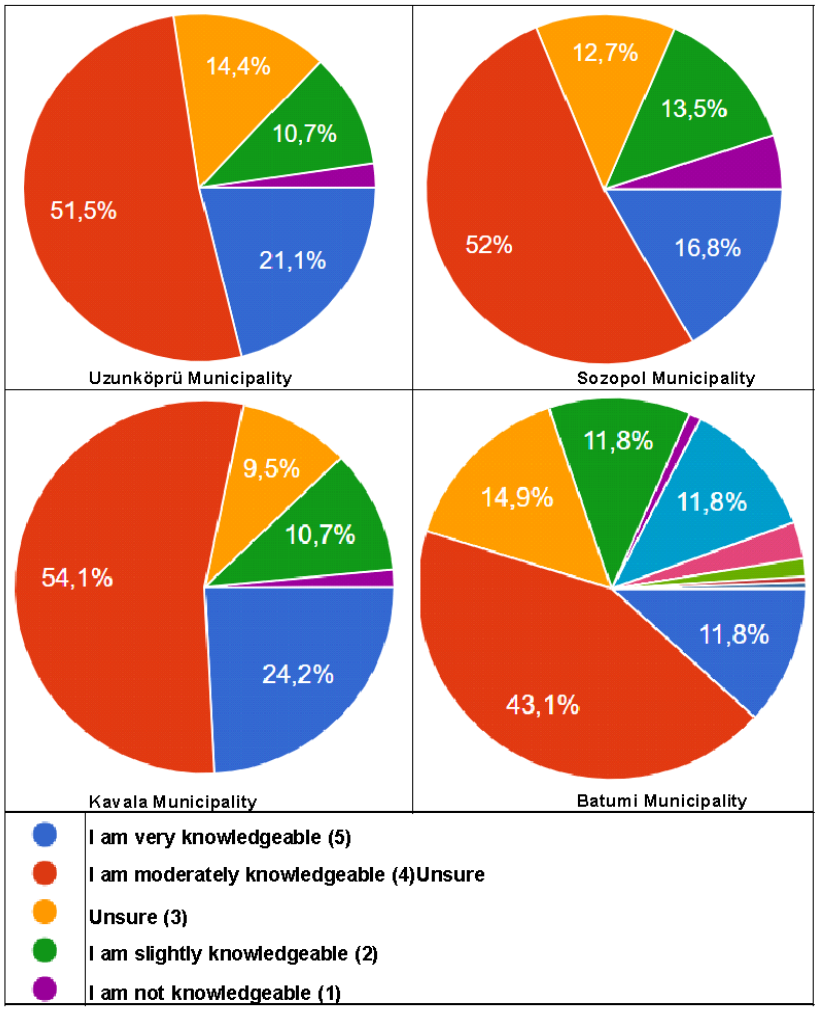


Figure 35: Graph of Participants' Knowledge on the Importance of Urban Green Spaces in Mitigating Climate Change int he areas

Q15. Do you believe urban green spaces can mitigate the effects of climate change?

- In Uzunköprü Municipality, 30.3% of participants stated that they definitely believe urban green spaces can reduce the effects of climate change, while 46.3% reported that they believe so.
- In Sozopol, 36.8% of participants responded "definitely yes" and 45.3% answered "yes" to the role of green spaces in mitigating climate change. In total, 82.1% of respondents expressed belief in this effect.
- In Kavala, 79.2% of participants stated that they believe in the role of green spaces in reducing climate change impacts, while 18.4% were undecided and 2.4% did not believe in this effect.
- In Batumi, 70.3% of respondents expressed belief in the role of green spaces in mitigating climate change, while 1.5% did not believe so.

The results show that, in all municipalities, a large majority of participants believe that urban green spaces play an important role in mitigating the effects of climate change. Among these,

participants from Kavala stand out with the highest level of belief in the effectiveness of green spaces.

The comparisons of the municipalities are presented in the table below.

Table 19: Participants' evaluation on the role of urban green spaces in mitigating climate change

	5(%)	4(%)	3 (%)	2 (%)	1 (%)
Uzunköprü	30.3	46.3	15.4	6.7	1.2
Sozopol	36.8	45.3	13.8	4.2	-
Kavala	29.8	49.4	18.4	1.8	0.6
Batumi	28.2	42.1	11.8	1	0.5

5. Definitely yes
4. Yes
3. Unsure
2. No
1. Definitely no

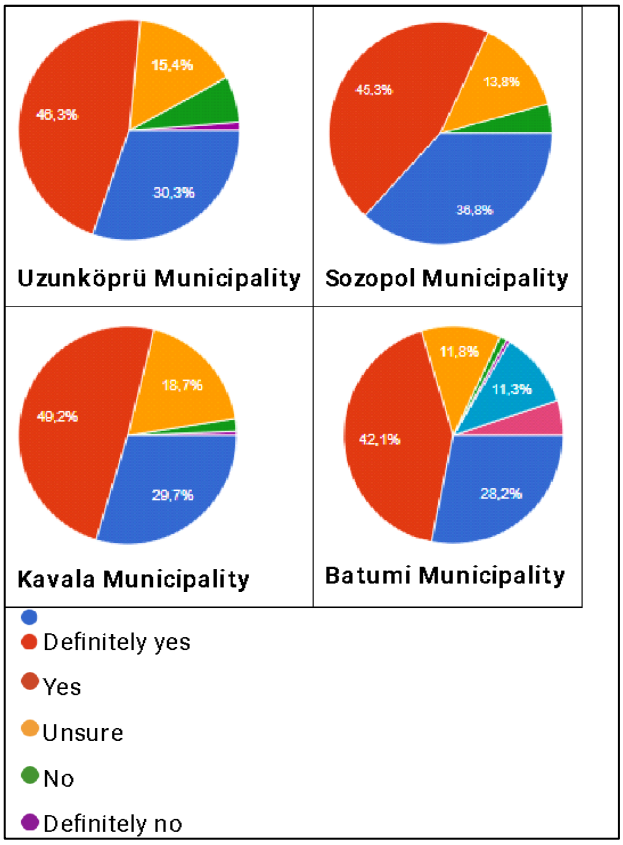


Figure 36: Graphs of Participants' evaluation on the role of urban green spaces in mitigating climate change in the areas

Q16. Do you think public authorities are making sufficient efforts to increase green spaces?

- In Uzunköprü Municipality, 22.7% of participants believe that public authorities are making sufficient efforts to increase green spaces, while 52.5% do not believe so. Additionally, 24.9% of respondents are unsure.
- In Sozopol, 9.6% of respondents believe that public authorities are making sufficient efforts, while 56.5% think the opposite. A total of 34% of participants are undecided.
- In Kavala, 6.4% of participants believe that sufficient efforts are being made, whereas 66.6% do not believe so. Meanwhile, 27% of respondents remain undecided.
- In Batumi, 41% of respondents believe that public authorities are making sufficient efforts to increase green spaces, while 12.9% think they are not. Additionally, 37.4% are unsure.

The results show that in Uzunköprü, Sozopol, and Kavala, the majority of participants believe that public authorities are not making sufficient efforts to increase green spaces. In contrast, in Batumi, a higher proportion of respondents think that efforts are sufficient.

The comparisons of municipalities are presented in the table below.

Table 20: Participants' evaluation on public authorities' efforts to increase green spaces

	5 (%)	**4 (%)**	**3 (%)**	**2 (%)**	**1 (%)**
Uzunköprü	6.5	16.2	24.9	36.1	16.4
Sozopol	1.8	7.8	34	46	10.5
Kavala	2.1	4.3	27	49.7	16.9
Batumi	4.6	36.4	37.4	10.3	2.6

5. Definitely yes
4. Yes
3. Unsure
2. No
1. Definitely no

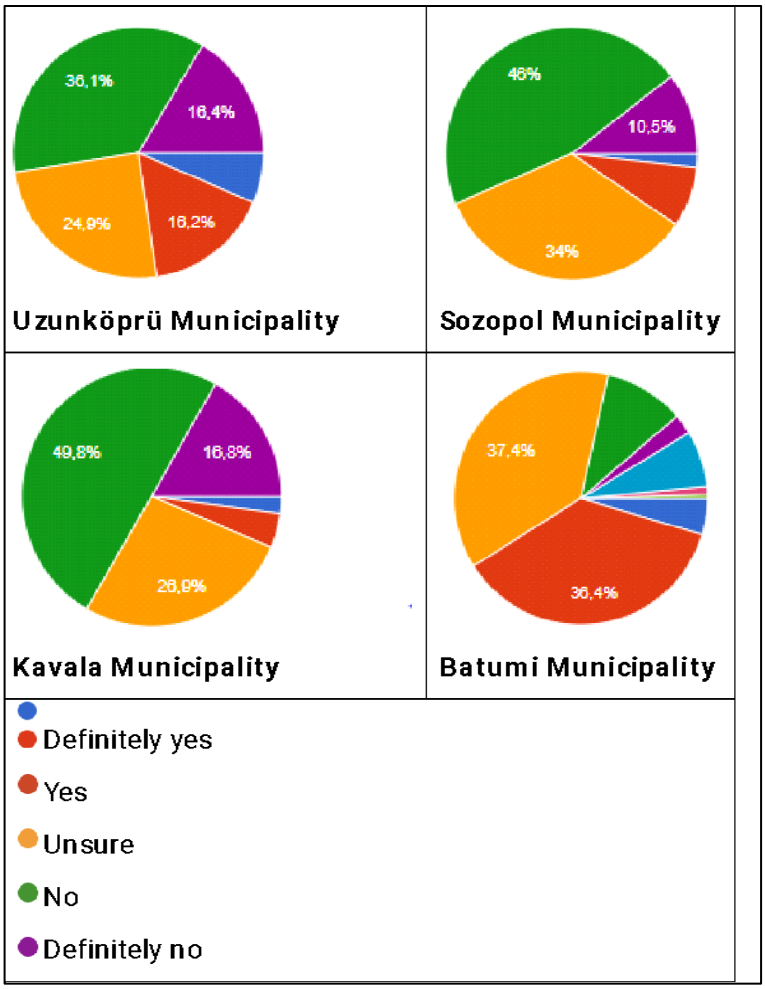


Figure 37: Graphs of Participants' evaluation on public authorities' efforts to increase green spaces in the areas

Q17. In your opinion, what is the most important benefit of green spaces against climate change? (5 is the most important, 1 is the least important)

- In Uzunköprü Municipality, the most important benefit of green spaces is considered to be reducing carbon emissions (f=266), followed by improving air quality (f=242) and reducing the urban heat island effect (f=210).
- In Sozopol, improving air quality (f=280) was identified as the most important benefit, followed by community health and quality of life (f=261) and reducing carbon emissions (f=242).
- In Kavala, improving air quality (f=184) was the most frequently selected factor, followed by community health and quality of life (f=182) and reducing the urban heat island effect (f=178).
- In Batumi, participants most frequently emphasized improving air quality (f=133), followed by reducing carbon emissions (f=116) and community health and quality of life (f=110).

The results show that across all municipalities, improving air quality and reducing carbon emissions are seen as the most important benefits of green spaces in combating climate change. Additionally, community health and the reduction of the urban heat island effect are

also highlighted. The comparison of the most important factors according to participants from each municipality is presented in the table below.

Table 21: Participants' evaluation on the most important benefits of green spaces against climate change

	1st important factor	**2nd important factor**	**3rd important factor**
Uzunköprü	Reducing carbon emissions (f=266)	Improving air quality (f=242)	Reducing urban heat islandeffect (f=210)
Sozopol	Improving air quality (f=280)	Community health andquality of life (f=261)	Reducing carbon emissions (f=242)
Kavala	Improving air quality (f=184)	Community health andquality of life (f=182)	Reducing urban heat island effect (f=178)
Batumi	Improving air quality (f=133)	Reducing carbon emissions (f=116)	Community health andquality of life (f=110)

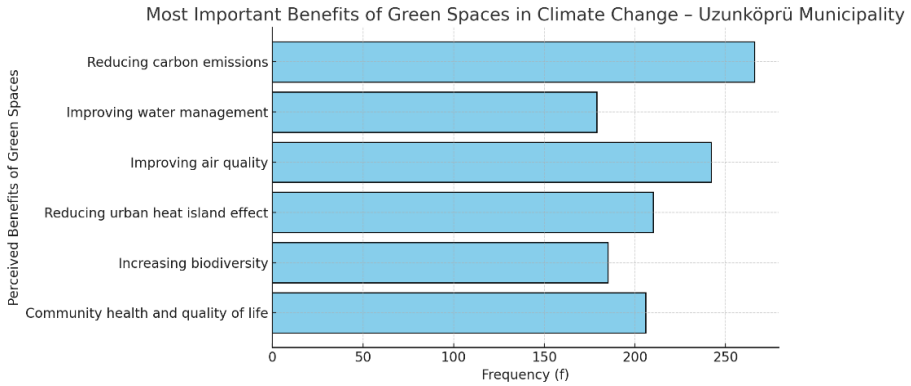


Figure 38: Most important benefits of green spaces in climate change-Uzunköprü

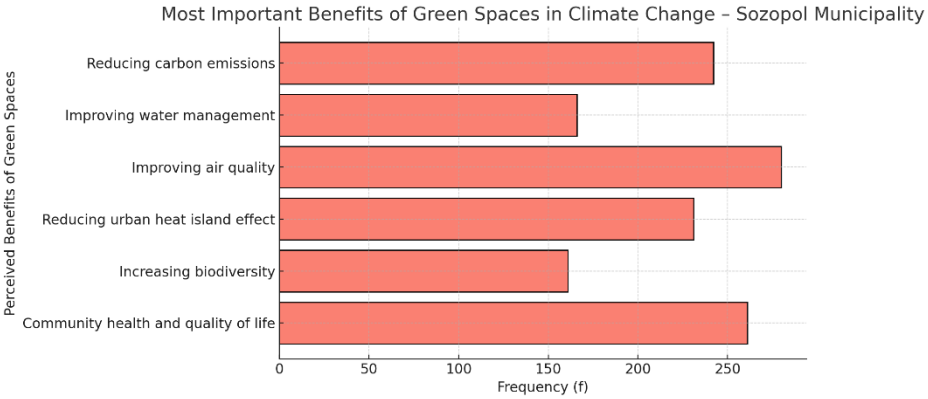


Figure 39: Most important benefits of green spaces in climate change-Sozopol

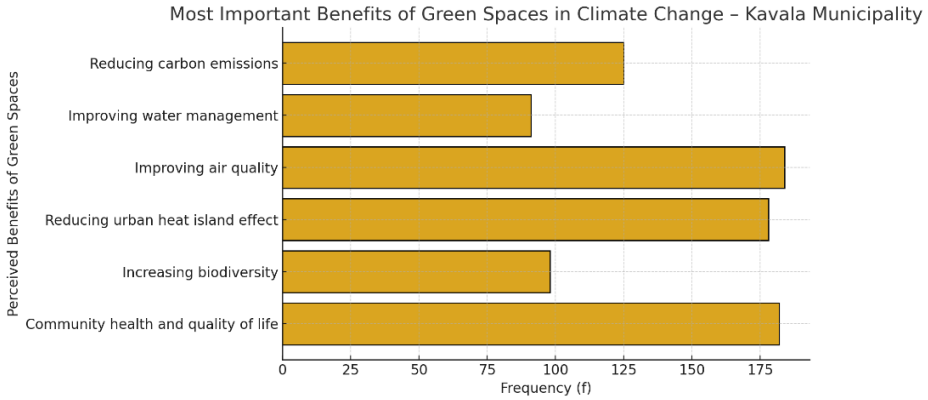


Figure 40: Most important benefits of green spaces in climate change-Kavala

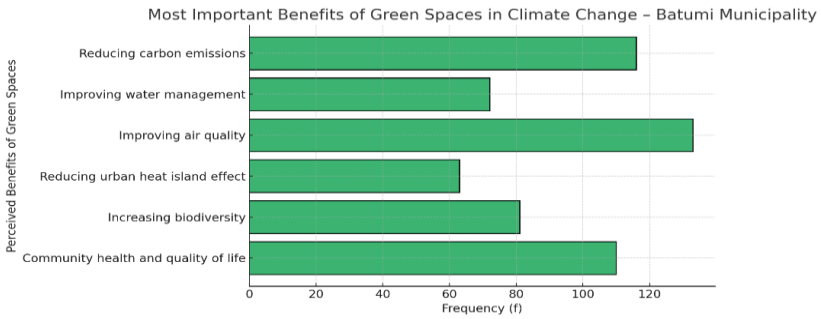


Figure 41: Most important benefits of green spaces in climate change-Batumi

Q18. Do you think the green spaces in your city are sufficient/enough to combat climate change?

- In Uzunköprü Municipality, 22.4% of participants believe that green spaces are sufficient to combat climate change, while 53.2% do not believe so. Additionally, 24.4% of respondents are unsure.
- In Sozopol, 7.5% of respondents believe that the green spaces in their city are sufficient, while 63.2% think they are not. A total of 29.3% of participants are undecided.
- In Kavala, 4.2% of participants believe that green spaces are sufficient, whereas 81.4% do not believe so. Meanwhile, 14.4% of respondents remain unsure.
- In Batumi, 16.9% of respondents believe that green spaces are sufficient to combat climate change, while 40.5% think they are not. Additionally, 30.3% are unsure.

The results show that in all municipalities, the majority of participants do not consider the current green spaces in their city sufficient to combat climate change. The highest level of dissatisfaction is observed in Kavala, while Uzunköprü and Batumi display relatively higher positive responses.

Table 22: Participants' evaluation on the sufficiency of green spaces to combat climate change

	5 (%)	**4 (%)**	**3 (%)**	**2 (%)**	**1 (%)**
Uzunköprü	8	14.4	24.4	37.3	15.9
Sozopol	1	6.5	29.3	50.2	13
Kavala	0.3	3.9	14.4	46.8	34.6
Batumi	1.5	15.4	30.3	37.9	2.6

5. Definitely yes
4. Yes
3. Unsure
2. No
1. Definitely no

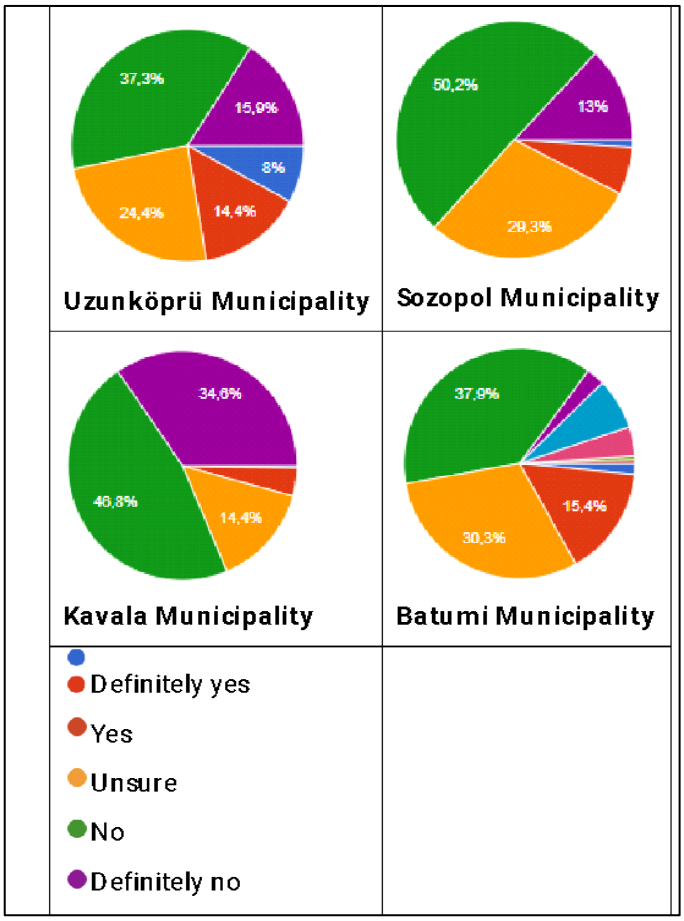


Figure 42: Graphs of Participants' evaluation on the sufficiency of green spaces to combat climate change in the areas

SECTION 3: URBAN HEAT ISLAND EFFECT

The third part of the questionnaire focuses on participants' perceptions and experiences related to the urban heat island effect. This section consists of 3 questions.

Q19. Do you feel higher temperatures in city centers compared to outer parts of the city or rural areas?

- In Uzunköprü Municipality, 79.1% of participants feel higher temperatures in city centers compared to outer areas, while 9.9% do not feel this difference. Additionally, 10.9% are undecided.
- In Sozopol, 81% of respondents feel higher temperatures in city centers, whereas 6.2% do not. A total of 12.7% of participants are unsure.
- In Kavala, 94.5% of participants feel higher temperatures in city centers, while only 1.5% do not feel this difference. Meanwhile, 4% remain undecided.
- In Batumi, 71.8% of respondents feel higher temperatures in city centers compared to rural areas, while 1.5% do not. Additionally, 8.2% are undecided.

The results show that, in all municipalities, the majority of participants report feeling higher temperatures in city centers compared to outer parts of the city or rural areas. The highest rate of perception is observed in Kavala, followed by Sozopol, Uzunköprü, and Batumi. The comparison of municipalities is presented in the table below.

Table 23: Participants' evaluation on perceived temperature differences between city centers and outer areas

	5 (%)	4 (%)	3 (%)	2 (%)	1 (%)
Uzunköprü	39.3	39.8	10.9	9.2	0.7
Sozopol	39	42	12.7	4.2	2
Kavala	57.7	36.8	4	1.2	0.3
Batumi	22.1	49.7	8.2	1	0.5

5. Definitely yes
4. Yes
3. Unsure
2. No
1. Definitely no

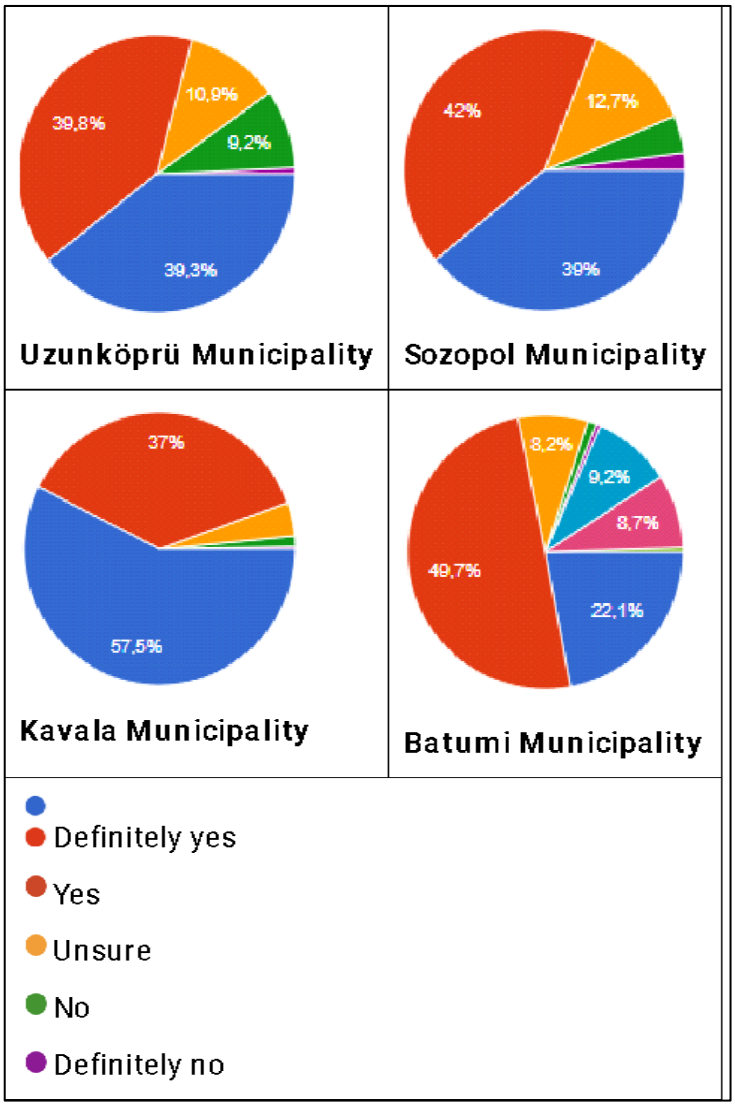


Figure 43: Graphs of Participants' evaluation on perceived temperature differences between city centers and outer areas

Q20. If yes, which factors do you think are most influential?

- In Uzunköprü Municipality, participants identified urbanization as the most influential factor (f=280), followed by lack of green spaces (f=220) and deforestation (f=220).
- In Sozopol, lack of green spaces was reported as the most influential factor (f=254), followed by deforestation (f=250) and urbanization (f=195).
- In Kavala, the most influential factor was identified as lack of green spaces (f=206), with urbanization (f=162) and deforestation (f=139) following.
- In Batumi, urbanization was seen as the most influential factor (f=109), followed by lack of green spaces (f=104) and deforestation (f=97).

The results indicate that participants in all municipalities consider urbanization, lack of green spaces, and deforestation as the key factors contributing to higher temperatures in city centers.

The comparison of the municipalities is presented in the table below.

Table 24: Participants' views on factors influencing higher temperatures in city centers

	1st influential factor	2nd influential factor	3rd influential factor
Uzunköprü	Urbanization (f=280)	Lack of green spaces (f=220)	Deforestation (f=220)
Sozopol	Lack of green spaces (f=254)	Deforestation (f=250)	Urbanization (f=195)
Kavala	Lack of green spaces (f=206)	Urbanization (f=162)	Deforestation (f=139)
Batumi	Urbanization (f=109)	Lack of green spaces (f=104)	Deforestation (f=97)

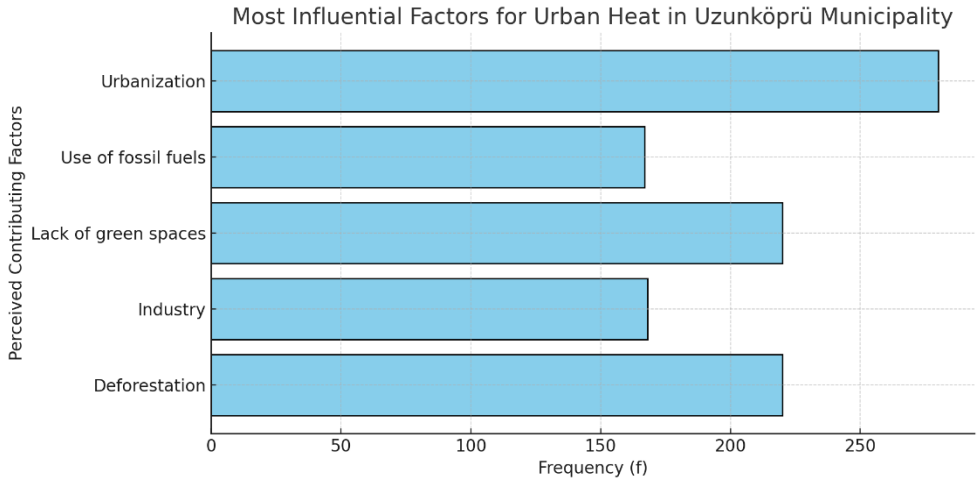


Figure 44: Most influential factors for urban heat in Uzunköprü

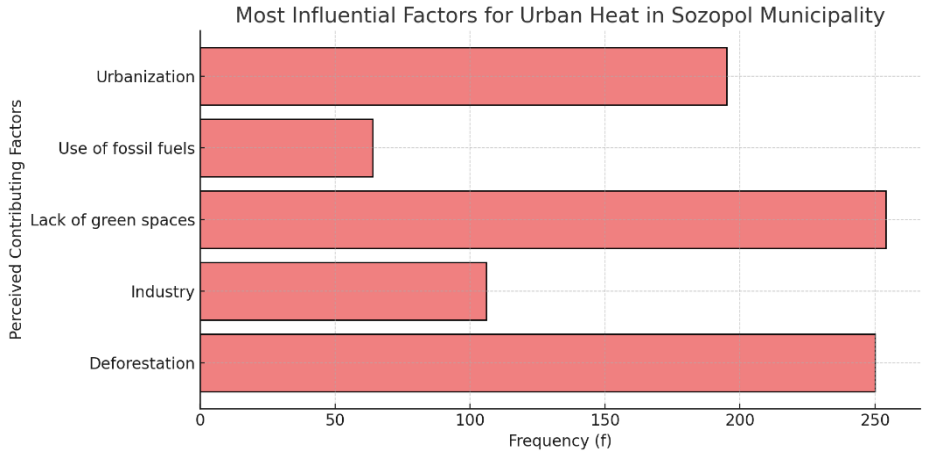


Figure 45: Most influential factors for urban heat in Sozopol

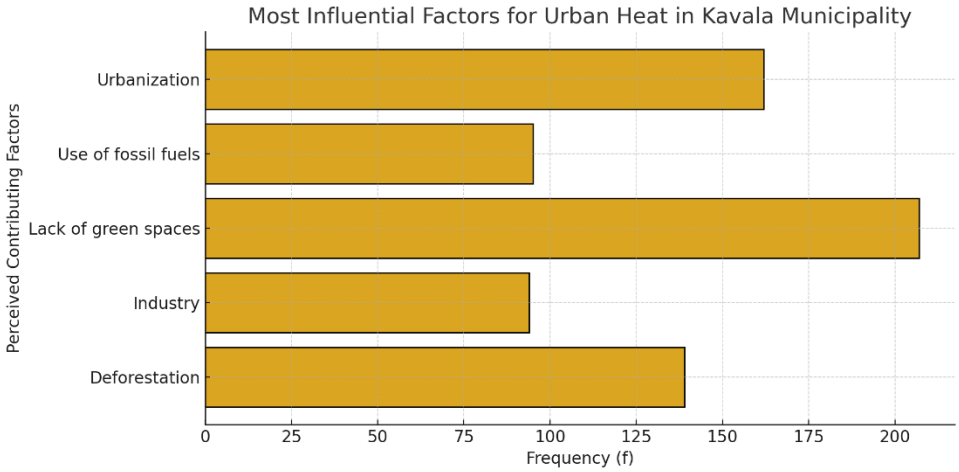


Figure 46: Most influential factors for urban heat in Kavala

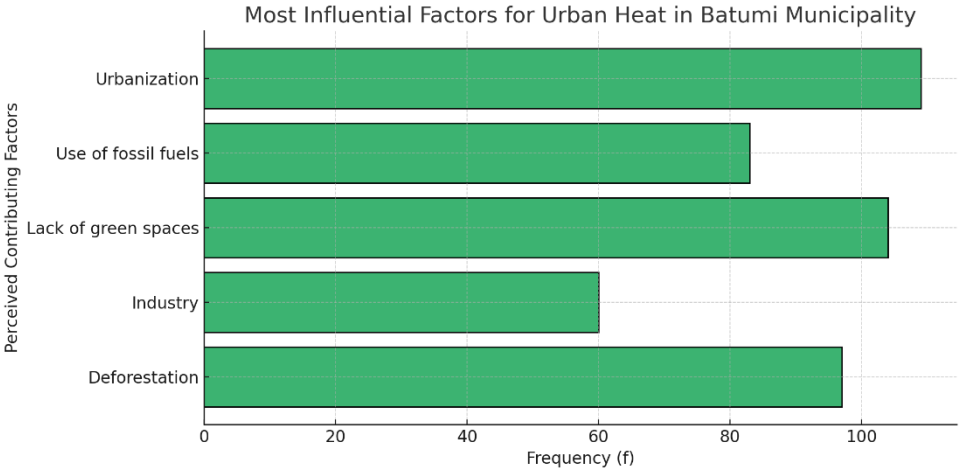


Figure 47: Most influential factors for urban heat in Batumi

Q21. What solutions can be applied to regulate heat in urban areas? (You can select multiple options)

- In Uzunköprü Municipality, the most frequently selected solution was urban parks/forests (82.8%), followed by roadside tree planting (68.7%), community gardens/urban agriculture areas (46.8%), green roofs (42.8%), and bicycle paths (42.8%). Other selected solutions included rain gardens (36.6%), reducing hard surfaces (34.8%), shading elements (34.3%), and vertical gardens (32.8%).
- In Sozopol, urban parks/forests were also the most preferred solution (88%), followed by roadside tree planting (73%), community gardens/urban agriculture areas (46.5%), green roofs (45.8%), and bicycle paths (38.8%). Vertical gardens (27%), rain gardens (26.5%), shading elements (25.5%), and reducing hard surfaces (15.5%) were selected to a lesser extent.
- In Kavala, the highest percentage was again for urban parks/forests (94.5%), followed by roadside tree planting (79.1%), green roofs (60.1%), bicycle paths (47.5%), and shading elements (48.8%). Community gardens/urban agriculture areas (46.6%), reducing hard surfaces (39.9%), vertical gardens (36.8%), and rain gardens (32.8%) were also mentioned.
- In Batumi, urban parks/forests (86.7%) and roadside tree planting (71.3%) were the leading solutions. These were followed by community gardens/urban agriculture areas (37.9%), green roofs (41.5%), bicycle paths (36.4%), vertical gardens (32.8%), rain gardens (29.7%), shading elements (31.8%), and reducing hard surfaces (20%).

The results show that, across all municipalities, urban parks/forests and roadside tree planting are the most commonly preferred solutions to regulate heat in urban areas. The comparison of municipalities is presented in the table below.

Table 25: Participants' evaluation on solutions to regulate heat in urban areas

	1st Preferred Solution	2nd Preferred Solution	3rd Preferred Solution
Uzunköprü	Urban parks/forests (82.8%)	Roadside tree planting (68.7%)	Community gardens/Urban agriculture areas (46.8%)
Sozopol	Urban parks/forests (88.0%)	Roadside tree planting (73.0%)	Community gardens/Urban agriculture areas (46.5%)
Kavala	Urban parks/forests (94.5%)	Roadside tree planting (79.1%)	Green roofs (60.1%)
Batumi	Urban parks/forests (86.7%)	Roadside tree planting (71.3%)	Green roofs (41.5%)

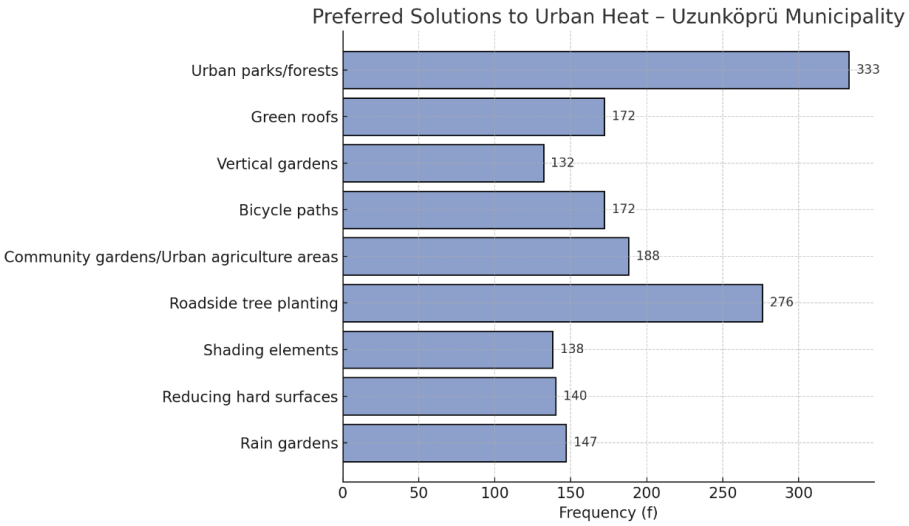


Figure 48: Preferred solutions to Urban heat in Uzunköprü

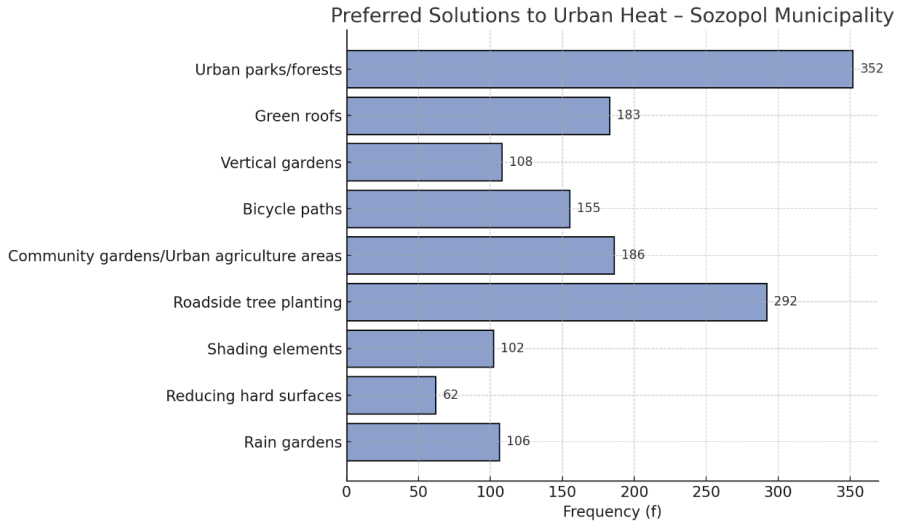


Figure 49: Preferred solutions to Urban heat in Sozopol

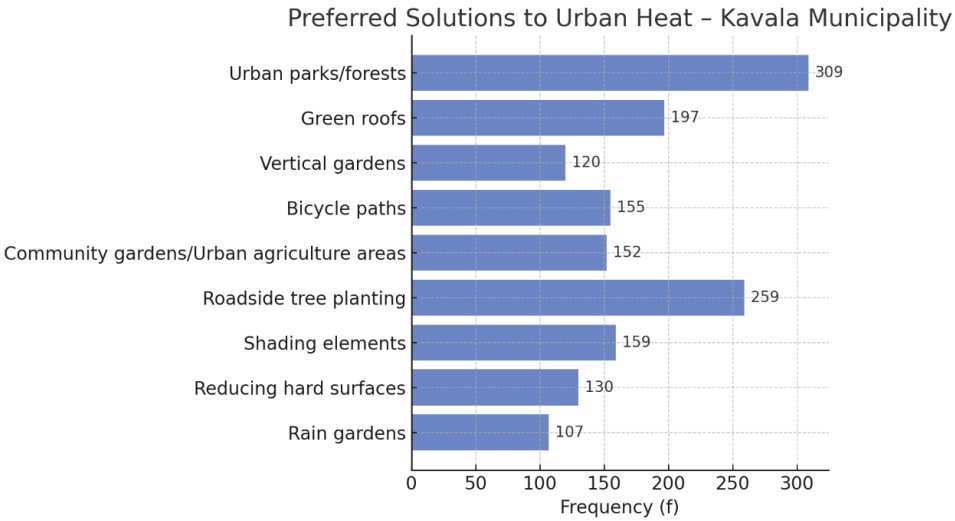


Figure 50: Preferred solutions to Urban heat in Kavala

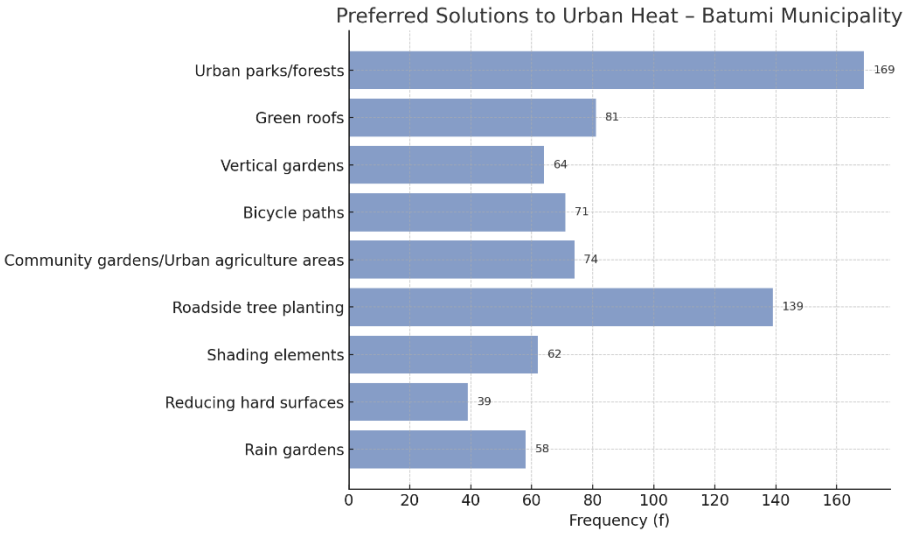


Figure 51: Preferred solutions to Urban heat in Batumi

SECTION 4: SOCIOECONOMIC PROFILE

The fourth part of the questionnaire focuses on gathering information about the participants' demographic and socioeconomic characteristics.

Q22. Gender

In Uzunköprü Municipality, the majority of participants are female, making up 54.2% of respondents, while males represent 45.8%. In Sozopol Municipality, female participants also constitute the majority with 69.3%, and males account for 30.8%. Similarly, in Kavala Municipality, 61.2% of participants are female and 38.8% are male. In Batumi Municipality, 57.9% of respondents are female, whereas 42.1% are male. These results show that in all municipalities, female participants form the majority, with the highest proportion observed in Sozopol.

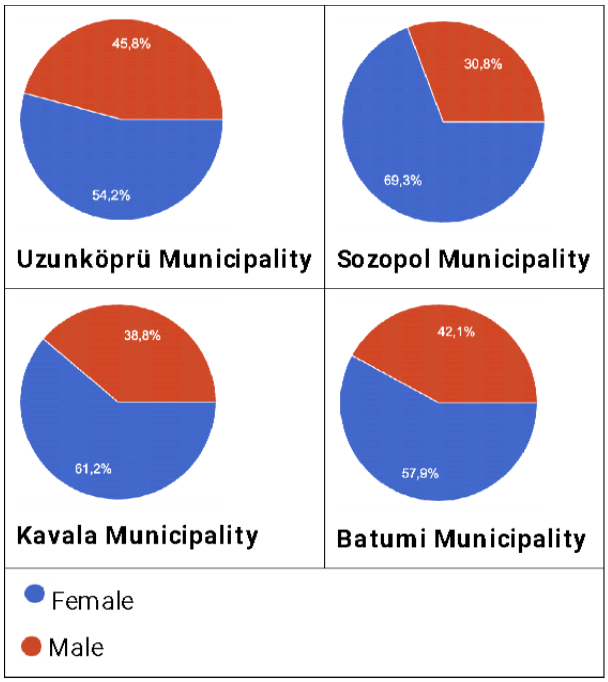


Figure 52: Graphs of gender in the areas

Q23. Age

- In Uzunköprü Municipality, the majority of participants are between the ages of 25–34 (35.6%) and 35–49 (34.8%), followed by those aged 50–64 (15.7%), 18–24 (11.4%), and 65 and above (2.5%).
- In Sozopol Municipality, most participants are in the 25–34 age group (43%), followed by 35–49 (33.8%), 50–64 (9.3%), 18–24 (7.8%), and 65 and above (6.1%).
- In Kavala Municipality, the majority of participants are between 25–34 years old (42.2%), followed by 35–49 (31.8%), 50–64 (12.5%), 18–24 (5.2%), and 65 and above (8.3%).
- In Batumi Municipality, the highest proportion of participants is in the 35-49 age group (38.5%), followed by 25-34 (22.6%), 18–24 (23.1%), 50–64 (14.4%), and 65 and above (1.4%).

These results show that in all municipalities, the majority of respondents are between the ages of 25 and 49, with the 25–34 age group consistently forming the largest proportion.

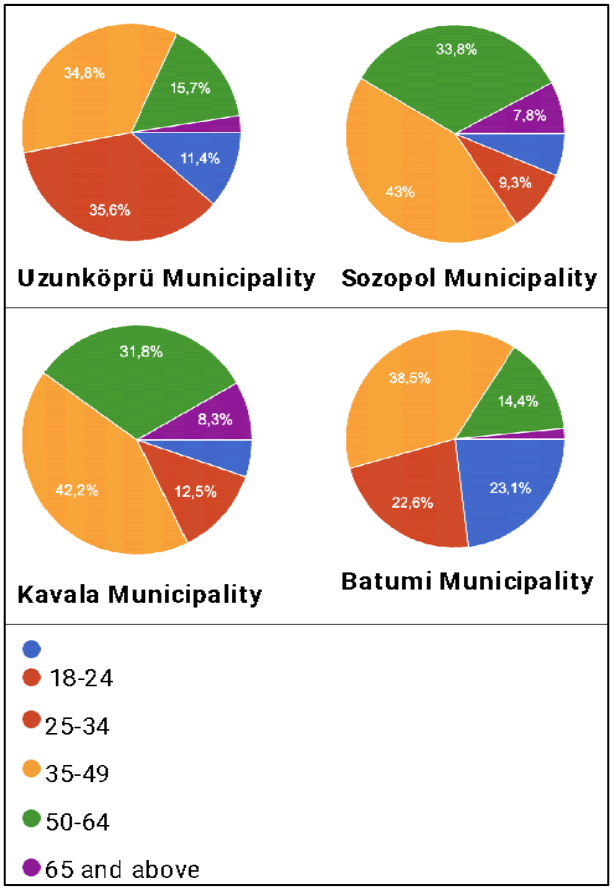


Figure 53: Graphs of age in the areas

Q24. Education Level

- In Uzunköprü Municipality, the majority of participants are high school graduates (60.7%), followed by university graduates (28.4%) and a smaller percentage holding a master's or doctorate degree (8%).
- In Sozopol Municipality, participants are mostly university graduates (40.8%), with high school graduates (36.8%) also making up a significant proportion. The share of those with master's or doctorate degrees is 22.5%, indicating a relatively high level of advanced education.
- In Kavala Municipality, nearly half of the participants (49.5%) are university graduates, while high school graduates account for 37%. Those with master's or doctorate degrees represent 13.1%.
- In Batumi Municipality, high school graduates form the largest group (45.6%), followed by university graduates (25.1%), and master's or doctorate degree holders (8.2%).

Overall, the data show that participants in Sozopol and Kavala have a higher tendency toward university and postgraduate education, while in Uzunköprü and Batumi, high school graduates are more predominant.

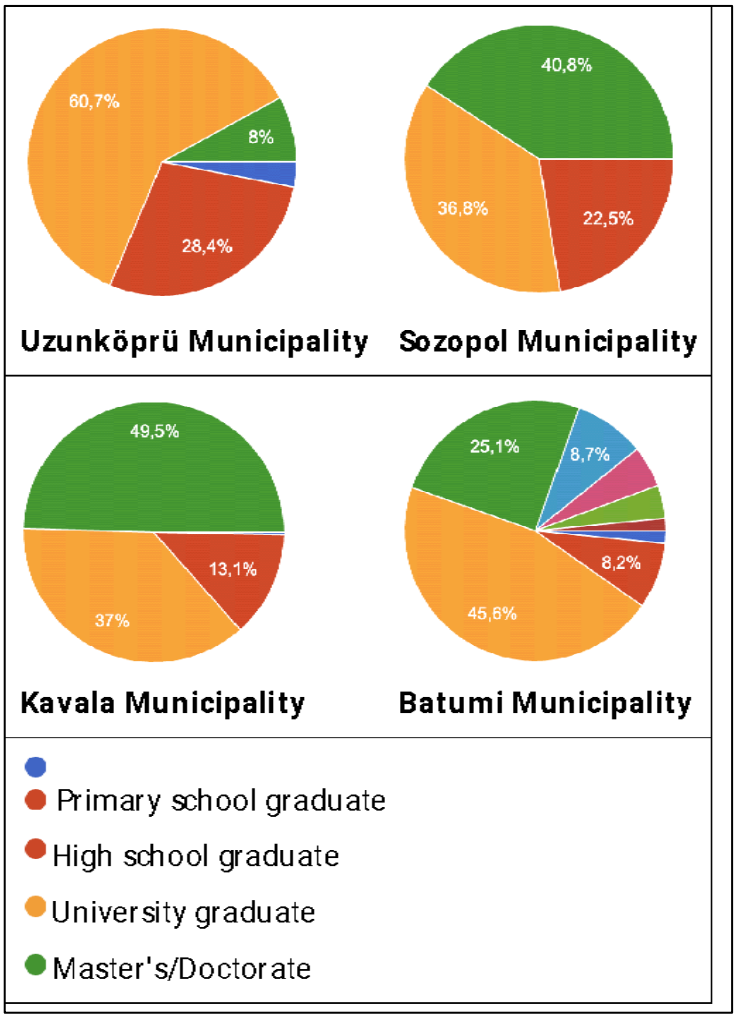


Figure 54: Graphs of education level in the areas

Q25. Economic Status

- In Uzunköprü Municipality, the majority of participants (65.4%) reported having a middle income. This was followed by 20.4% who indicated having a low income. A smaller proportion of respondents stated having no income (8%), and only 6.2% reported being in the high-income group.
- In Sozopol Municipality, 69% of participants identified themselves as having a middle income, while 18.8% reported a low income. The proportion of those with high income was 3.5%, and those with no income were 1.5%.
- In Kavala Municipality, 71.9% of respondents reported having a middle income, and 18% identified as low-income earners. Only 3.6% were in the high-income group, and 2.5% reported having no income.
- In Batumi Municipality, 66.2% of participants stated they have a middle income, followed by 13.3% with low income. The percentage of high-income participants is 5%, and those without income make up 14.9%, which is higher compared to other municipalities.

Overall, the data show that in all municipalities, the majority of respondents fall into the middle-income category, with a significant presence of low-income individuals, especially in Uzunköprü and Batumi. The proportion of high-income participants remains low across all partner municipalities.

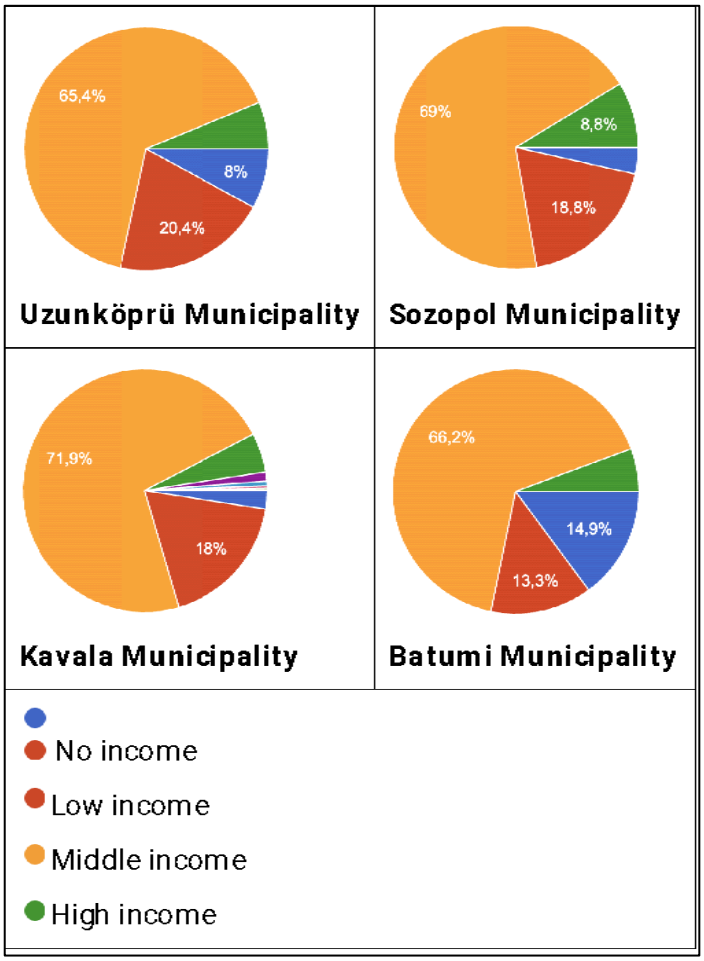


Figure 55: Graphs of economic status in the areas

Q26. Duration of Residence in the Area

- In Uzunköprü Municipality, the majority of participants (56.5%) have been living in the area for 21 years or more. This is followed by 16.7% who have resided there for 11–15 years. The proportions of those who have lived in the area for shorter periods (0–10 years) are significantly lower.
- In Sozopol Municipality, a large majority (69.3%) of participants have also been living in the area for over 21 years, showing a very settled population. The next largest group is those with 11–15 years of residence (11%), while short-term residents (0–10 years) make up smaller percentages.
- In Batumi Municipality, 65.1% of respondents have been living in the area for more than 21 years, and 15.9% for 11–15 years. Newer residents with less than 10 years of residence account for much smaller portions.

Overall, the data show that in all three municipalities, the majority of participants are long-term residents, with more than half having lived in their area for over two decades.

Table 26: Participants' Duration of Residence in the Area

Duration of Residence	Uzunköprü	Sozopol	Batumi
0–5 years	37	21	13
6–10 years	34	25	12
11–15 years	37	33	12
16–20 years	67	44	31
21 years and above	227	277	127

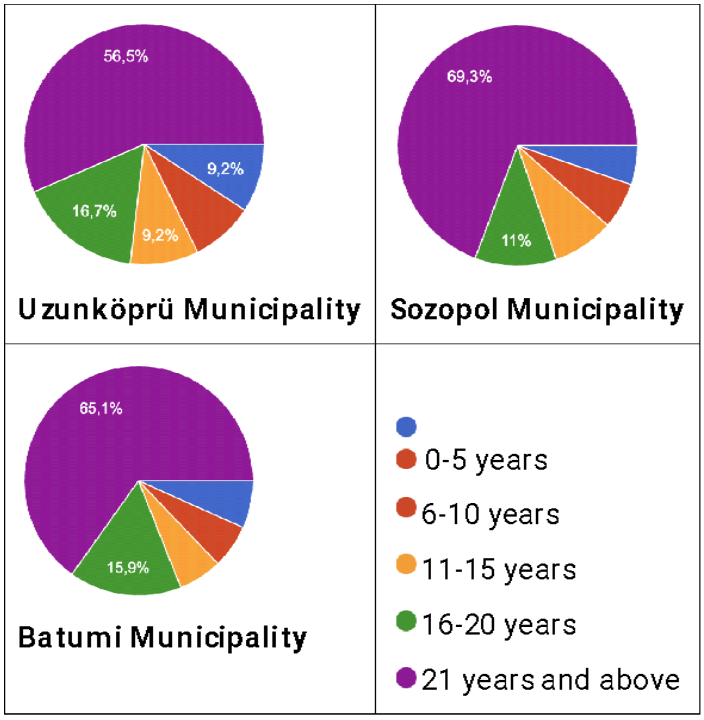


Figure 56: Graphs of participants' Duration of Residence in the areas

Q27. Characteristics of Living Area

- In Uzunköprü Municipality, the distribution between urban and rural living areas is relatively balanced, with 53% of participants residing in rural areas (village or town) and 47% living in urban areas.
- In Sozopol Municipality, the majority of respondents (77.8%) live in urban areas, while 22.3% reside in rural areas.
- In Kavala Municipality, an overwhelming majority (87.8%) of participants live in urban areas, with only 12.2% living in rural locations.

- In Batumi Municipality, 74.9% of respondents reported living in urban areas, while 5.6% live in rural areas and a small portion indicated other types of areas.

Overall, the data show that the majority of respondents across all municipalities live in urban areas, with Kavala and Sozopol showing the highest concentration of urban residents. In contrast, Uzunköprü stands out with a more even distribution between urban and rural living areas.

Table 27: Characteristics of Living Area

Duration of Residence	Uzunköprü	Sozopol	Kavala	Batumi
Urban	189	311	287	146
Rural (village, town)	213	89	40	11

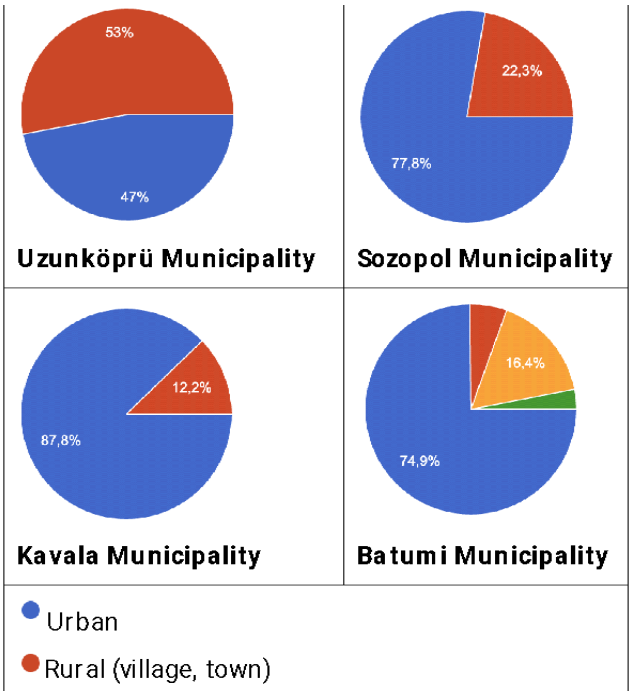


Figure 57: Graphs of characteristics of Living Area

ADDITIONAL COMMENTS

- In Uzunköprü Municipality, participants expressed strong concerns about environmental pollution. Several participants highlighted the need for more green spaces, urban tree planting, bicycle paths, and stricter regulations on emissions from vehicles and factories. Issues such as waste management, recycling, and the lack of recreational spaces for children were also mentioned. Some respondents criticized urban development at the expense of green areas and emphasized that public involvement in decision-making processes and environmental protection is essential. Overall, participants from Uzunköprü demonstrated a strong desire to protect natural resources and transform the city into a greener, more livable environment.
- In Sozopol, respondents pointed out the criticized overdevelopment and deforestation in urban areas. Suggestions included the introduction of electric public transport and more pedestrian-friendly urban planning. Overall, participants called for more green areas, educational campaigns, waste separation, and recycling practices.
- In Kavala, participants called for more green spaces, parks, and shaded areas. Concerns were raised regarding forest destruction, uncontrolled placement of renewable energy facilities without environmental assessments, and air pollution. Water conservation, industrial pollution control, and rainwater harvesting were also highlighted as urgent measures. Several respondents emphasized the need for more practical steps toward environmental sustainability.
- In Batumi, participants emphasized the need for raising public awareness and environmental education starting from schools. Comments included calls to reduce car emissions, increase green spaces, and encourage sustainable urban development. Overall, participants stressed the shared responsibility between individuals, authorities, and businesses in mitigating climate change and protecting natural resources.

In summary, across all municipalities, the additional comments revealed common concerns about the loss of green spaces, and pollution. Participants emphasized the importance of environmental education, public involvement, and locally driven solutions to make urban areas more sustainable and climate-resilient.

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NEXT Black Sea Basin

Green Urban Resilience

CONTACT DETAILS

Istanbul University-Cerrahpaşa
Faculty of Forestry
Valide Sultan Caddesi No:2, 34473 Bahçeköy-Sarıyer/İstanbul

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GREEN URBAN RESILIENCE BSB00006

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