COMPAIR

DELIVERABLE

D6.4 Key Messages for Environmental Policy Impact

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List of Abbreviations

Abbreviation	Definition
SDGs	Sustainable Development Goals
WP	Work Package
LSES	Low Socio-Economic Status
NO2	Nitrogen Dioxide
PM	Particulate Matter
CO2	Carbon dioxide
NO2	Nitrogen Dioxide
CS	Citizen Science

Executive Summary

This deliverable presents and analyses the project outcomes as part of the policy and scientific insights that will be used to achieve environmental impact through specific messages and recommendations. This deliverable uses outcomes from other deliverables of WP5, WP6, and WP7.

The methodological approach is based on the analysis and synthesis of the results of the project. The analysis is based on specific aspects as they presented in the methodology section, along with their association to the SDGs and the strategic EU goals. Specific input from the pilot partners was gathered towards better messages and recommendations creation and impact achievement.

The Policy Recommendations Impacting the Environment emerged through the use of the COMPAIR tools as part of the various use cases during the pilots. Direct feedback from citizens, gathered through the Scenario Simulation Dashboard suggesting several practical actions, including improving cycling infrastructure, enhancing public transportation, and increasing household energy efficiency with government support. The analysis of local pollution sources, traffic patterns, and seasonal variations in air quality further underscores the need for targeted, location-specific environmental policies.

The technical recommendations when developing collaborative policies impacting the environment emerged through the development and use of multiple dashboard and tools throughout the project. Focus on use-friendliness, continuous feedback from participants during the development process, improvement of the visualisation of the data, and technical reliability were some of the most important recommendations that emerged.

Engaging a diverse demographic is crucial for the success of initiatives like the COMPAIR project. The project adopted various methods for involving vulnerable groups, such as elderly citizens, students, and low socio-economic groups. These methods have proved to be successful and can be applied to other similar initiatives. However, it is also important to ensure the protection of citizens' rights regarding their participation and the handling of their data. Projects should address ethical issues in urban planning, develop tailored consent forms for each pilot partner, and focus on privacy-first data collection.

1. Introduction

The goal of this deliverable is to collect the various recommendations that have been drawn throughout the project, especially the pilot use cases, the public round, and the use of the tools.
These recommendations are broken down into three categories. The first category is Policy Recommendations Impacting the Environment, which are meant to provide some insight to policy-makers. The second category is Recommendations for Citizen Engagement when developing collaborative policies impacting the environment. These emerged through the successful implementation of the Public Round of the project. The third category features technical recommendations when developing collaborative policies impacting the environment. The COMPAIR project featured the development of multiple online dashboards and tools and through the development and use of them, these recommendations emerged. The last category is Recommendations for Legal and Ethics, and is a list of recommendations focusing on ensuring the protection of citizens' rights regarding their participation and the handling of their data in citizen science initiatives.

Furthermore, this deliverable connects the environmental policy recommendations with the broader framework of the United Nations' Sustainable Development Goals (SDGs) and EU Strategic Goals. These recommendations can prove to be a useful framework for both policy makers as well as future initiatives.

Following the Introduction, Chapter 2 details the methodology followed to create this deliverable. Chapter 3 contains Policy Recommendations Impacting the Environment, Chapter 4 features Recommendations for Citizen Engagement when developing collaborative policies impacting the environment, while Chapter 5 presents Technical recommendations when developing collaborative policies impacting the environment. Chapter 6 contains Recommendations for Legal and Ethics and Chapter 7 presents the Connection with SDGs and EU strategic goals .

2. Methodology

The main objective of this deliverable is the analysis of the project results regarding environmental policy recommendations. In order to provide environmental policy insights, it is important to analyse different aspects coming from the policy messages of the pilot cases and the COMPAIR tools. So, the methodological approach of this deliverable is to derive the lessons learned and experiences gained throughout the project. There are four main aspects connected to the environmental policy recommendations: (a) Direct Recommendations for Environmental Policy, (b) Recommendations for Citizen Engagement when developing collaborative environmental policies, (c) Technical recommendations when developing collaborative environmental policies and (d) Recommendations for legal and ethical considerations. Furthermore, this deliverable analyses the connection of the outcomes with the SDGs and EU strategic goals.

More specifically, the analysed aspects are as follows, along with their possible values:

- Recommendation Type: [environmental policy; citizen engagement; technical; legal and ethics]
- Action Application Level: [Individual; Local; Government]
- Policy Recommendation Scope [pilots own input, text]
- Policy Recommendation Description [pilots own input, text]
- Pilot City and Connected Case Study [COMPAIR case studies list]
- Connected COMPAIR Tool [COMPAIR tools list]
- Connected SDG [list of SDGs]
- Connected EU Strategic Goal

The basic sources of information are the following deliverables, including input from all the pilot cases:

- D6.3 Pathways to Environmental Change
- D5.6 Public Round Report
- D7.2 Legal Requirements and Guide to Legal Compliance for Data-Driven Decision-Making
- D7.3 Citizen Science and its Potential to Policy-Ready Data
- D7.4 Recommendations for new CS tactics in the CS Scientific Agenda

The following sections 3 to 7 present the results of this analysis.

3. Policy Recommendations Impacting the Environment

The Public Round has provided valuable lessons from the pilots, which have been incorporated into the Deliverable D5.6 Public Round Report. Based on these lessons and the use of the project's dashboards in the pilot cases, several recommendations for improving the impact of environmental policies have emerged.

Through the use of the Scenario Simulation in Athens and Sofia - one of the two tools within the Carbon Footprint Simulation Dashboard - citizens were able to submit their opinions in the form of scenarios regarding the European Commission's target of a 55% net reduction in greenhouse gas emissions by 2030. These scenarios were comprised of three types of actions - actions citizens can adopt on their own initiative, actions they are willing to accept from the central government, as well as actions they are willing to adopt from the local government. Through all the actions available, the majority of the citizens included actions that led to the following recommendations for advancing environmental policies:

- Improving cycling infrastructure (including bicycle lanes and sharing programs)
- Improve public transport services (focusing on availability and diversity - different types).
- Improving household energy efficiency through government support initiatives.
- Increasing the use of renewable energy sources (such as solar and wind).
- Creation of green ports.

Furthermore, through the Public Round and the quantitative analysis of D6.3, emerged the identification of important aspects that may lead to the improvement of relevant policies impacting the environment, at a local level. These are:

Rec_Env_01	**Take into account the different local pollution sources. Identifying and understanding these sources allows for a more accurate assessment of the impact of pollution and how to focus on targeted mitigation strategies.**
Case: For example, in Hove hotspots for wood smoke and other local pollution sources were identified, and 95% of local peaks in PM2.5 were mostly attributed to wood smoke. Also, in Athens, Neos Kosmos, higher PM2.5 levels were found during winter mostly due to wood burning for heating.	

Rec_Env_02	**Take into account the traffic peaks at specific times of the day. Understanding these fluctuations can help evaluate the effectiveness of traffic management plans and design better means to reduce peak pollution levels.**

Case: After the circulation plan in Ghent, the mean NO2 concentrations were 10.704 µg/m³ (Paul de Ryckstraat), and 8.004 µg/m³ (Wolterslaan), while before the plan they were 11.265 µg/m³ (Paul de Ryckstraat), and 5.938 µg/m³ (Wolterslaan)

Rec_Env_03	**Take into account the seasonal variations of air quality. Heating needs, weather patterns, and human activity can affect air pollution levels. Understanding these patterns can help with creating seasonal strategies to mitigate the increased air pollution.**
Case: Seasonal variation in PM10 and NO2 concentrations was observed in Plovdiv, with higher levels during the heating season, with specific peaks during school hours. The goal of experiments in Plovdiv was to raise awareness on the impact of traffic on air pollution and seasonal variation of PM10. The main source of PM10 for Plovdiv is domestic heating with solid fuels. The municipal air quality program shows that the exceedances of the average daily concentration of PM10 are in the winter in the heating season. The results from experiments dedicated to seasonal variation of PM10 showed that the average PM10 concentration for the examined period is 28 µg/m³. Out of the heating season, PM 10 concentrations are lower compared to those during the heating season. The average PM 10 concentration during the heating season was 35 µg/m³, and out of the heating season – 23 µg/m³. DIY sensors, assembled by students were installed at school in Sofia in order to measure the air quality around schools. These seasonal air quality measurements showed higher pollution in winter months. Furthermore, the school bus service contributed to reducing traffic-related pollution around schools.	

Rec_Env_04	**Take into account the correlation between traffic intensity and NO2 concentrations. Periods of high traffic typically result in increased levels of pollution, through vehicle emissions. Understanding these correlations can allow more targeted strategies to reduce emission exposure in high-traffic areas.**
Case: Correlation between traffic intensity and increased NO2 concentrations established in Plovdiv. The NO2 and PM10 concentrations were measured by mobile air quality laboratory and Telraam v1 sensor was used for traffic counting. During school days, the traffic was more intense compared to non-school. The school day starts at 8:00 a.m. and finishes at 5:00 p.m. At that time the highest traffic intensity was recorded. This is the time when students and parents travel to school. The peak in traffic at that time is related to the need to transport students to and from school. Traffic increases significantly during these hours, leading to higher levels of pollution, especially NO2 associated with vehicle emissions. During weekends the intensity of traffic is lower compared to weekdays. The peak NO2 concentrations were measured in the morning around 7:00 and in the evening around 5:00 p.m. When comparing NO2 concentrations with traffic intensity, it	

was found that the peak concentrations were measured during the hours with the most intense traffic. During school days, they are in the morning when parents take the children to school and in the evening when they pick them up. When measuring fine dust particles, relatively constant concentrations and no peaks were found as in NO2 emissions. On weekends, PM 10 emissions are slightly lower than on weekdays.

The combustion of fuel is the main source of NO2 in the ambient air and is created as a result of emissions from traffic. PM10 emissions from the combustion process in transport depend on the type of fuel and are very low. They are due to the resuspended dust, wear and tear of the road surface, tires and brakes.

4. Recommendations for Citizen Engagement when developing collaborative policies impacting the environment

The Public Round of the project was a success. Through this success emerged recommendations based on what was implemented well and what had room for improvement, when it comes to engagement with citizens.

Rec_Eng_01	**Engaging Low Socioeconomic Status (LSES) and Disadvantaged Groups in Citizen Science**
Case: To maximize participation in citizen science, targeted outreach to specific demographic groups, including low socioeconomic status (LSES) individuals and disadvantaged communities, is essential. In Athens, the project successfully engaged elderly individuals, while in Flanders, outreach efforts targeted low socio-economic status (LSES) groups through school initiatives. In Plovdiv and Sofia, the focus was on connecting with students, some of them from LSES backgrounds, and engaging Roma communities to address air pollution challenges. According to the overall assessment presented in the D5.6 Public Round Report, COMPAIR successfully engaged participants from lower socioeconomic backgrounds, with an estimated 20% of total participants belonging to this group. This targeted engagement demonstrates a replicable strategy for policymakers seeking to broaden citizen science involvement and ensure equitable impact across all socioeconomic groups.	

Rec_Eng_02	Recognising the role of local champions and giving them what they need
Case: Another recommendation for developing collaborative policies that emerged from the Flanders pilot and could apply to the other pilots as well, is to recognise different types of "local champions" within the community. For example, they should be technical champions who excel in the technical side of things, functional champions who already have leadership roles (teachers), and internal champions within the organisation who are motivated to take action themselves, as already adopted in the Flanders case. It is important to provide them with the necessary resources, like refresher courses on air pollutants, equipment such as Arduino sensor kits, weekly scrum meetings, and full access to platforms for sharing their ideas and expertise. These different types of champions can drive the project forward by providing expertise, leadership, and motivation.	

Rec_Eng_03	Fostering interactive engagement through the "Data Café".
Case: In two pilot cities, Herzele (Flanders) and Saint-Nicolas (Flanders) a data cafe was conducted, where data were presented among parents, active citizens, and municipal officials. Policy makers can use data cafés as a gathering place where they can look together and explain the data that has been collected during the project by the sensors and the effects of real policy measures, shown in the project's tools (PMD).	

Rec_Eng_04	Share best practices of other pilots
Case: All pilots emphasized the importance of sharing lessons learned and successful practices with other local authorities and stakeholders. For instance, initiatives like "school streets" in Herzele, designed to reduce traffic congestion around schools, and the introduction of school buses in Sofia, provide effective models for other regions aiming to improve air quality near educational institutions.	

Rec_Eng_05	Joint workshops for cross-learning
Case: Organise workshops, like in Athens, Sofia, Plovdiv, Berlin and Flanders, which involve all groups across the project, including policy makers, so they learn from each other and see things in context. This could elevate the quality of learning and provide better-informed citizen scientists. For example, the six workshops and hands-on training sessions that took place in Berlin, empowered participants with the knowledge and tools to monitor air quality and traffic flow, fostering a community of informed and proactive citizens who are more aware of their environmental choices.	

Rec_Eng_06	**Improving student engagement and broaden community impact by integrating citizen science into school programs as part of a strategy for fostering community involvement in collaborative environmental policy development.**

Case: In all of the pilots (Athens, Sofia, Plovdiv, Berlin, Flanders) a series of workshops was organised for the students, regarding air quality, the main pollutants, ways to measure them with DIY sensors and how to assemble a DIY (sensor.community) device. From the interaction with the school community, the following recommendations for collaborative policies impacting the environment emerged:

- Integrate citizen science activities with parts of the school curriculum: Inspired by the Plovdiv pilot, where training and tasks were integrated directly into the school curriculum, it's recommended to incorporate citizen science activities into subjects like Environmental Science, Chemistry, and Math to enhance student engagement through hands-on learning. For example, in Plovdiv, a workshop was organized for 5th-grade students (ages 11-12) when they reached the topic of air quality in Environmental Science. Using project-developed materials, students visited a mobile laboratory to explore measurement equipment, assembled sensors, and learned about air quality monitoring. Including such activities—such as building sensors in technology classes or analyzing data in math—creates meaningful projects that deepen understanding while making learning more interactive and relevant.
- Engage students for wider engagement: Policymakers should recognize students as powerful drivers of broader community engagement, particularly those drawn to science experiments and hands-on learning. By fostering student involvement, initiatives can tap into this enthusiasm to expand volunteer recruitment and promote sustainable practices beyond the classroom, reaching into homes and communities and involving parents, friends, and local networks.
- Utilise the Snowball Effect in Schools: Engage students in citizen science projects, particularly around air quality, to create a ripple effect that extends awareness and action beyond the classroom. Students can influence their families and friends, expanding the project's reach. Media coverage of school projects can further inspire other schools and communities to participate.
- Establish Partnerships with Schools and Community Networks: Collaborating with schools and community networks is essential for reaching diverse socio-economic groups and for amplifying project impacts across society. Schools offer a unique opportunity to educate students, who can then extend awareness within their families and communities. Policies encouraging initiatives like school bus services within Low Emission Zones can both alleviate local air pollution and build community engagement among students, parents, and teachers. These initiatives serve as models for alternative transportation solutions that promote sustainable behavior, reduce reliance on private car use, and foster community-wide support for municipal services that contribute to cleaner, healthier environments.

Rec_Eng_07	Organise ideathons for different purposes
Case: Organise workshops in the form of ideathons, like in Sofia, to provide several discussion sessions with stakeholders dedicated to the different case studies, like aiming to gather ideas for further development of the school bus service. These ideathons should be dedicated to the project's tools in order to demonstrate their features live (such as the carbon footprint simulation dashboard). It is also recommended to organise a small-scale ideathon to agree on key messages and coordinate efforts to ensure that local plans are effectively aligned.	

Rec_Eng_08	Encourage behavioural change through the project's tools
Case: The willingness of citizens to reduce their energy consumption and use alternative means of mobility (public transport, bicycling, walking) proves the success of awareness campaigns. Future tactics could include more targeted campaigns that encourage specific behavioural changes based on the data collected, leading to broader environmentally friendly behaviours.	

Rec_Eng_09	Use the project results for future urban planning
Case: Leverage the project findings to create long-term plans for urban mobility and air quality. These results can inform future policy decisions and help the long-term effects of the project continue to shape city planning through an environmental scope. Introduce ideas as the garden streets (which is the end goal in Saint-Nicolas in Herzele), as a possible mobility measure to slow down car traffic in residential neighbourhoods. The pilot organisations are responsible for communicating the results to the relevant departments and policy-makers.	

Rec_Eng_10	Incorporate campaign results into policy
Case: The community's enthusiasm about the CO2 calculator campaign suggests that citizen science data could lead to being incorporated into local policy. This will not only make data more relevant but also enhances citizen power by including them in direct decision-making. One key element is the strong promotion of the local government. The second tool of the Carbon Footprint Simulation Dashboard, the Scenario Simulation, allowed the users to submit their opinion in the form of scenarios regarding a specific quantified environmental goal, which in this case was the European Commission's target of a 55% net reduction in greenhouse gas emissions by 2030. These scenarios were comprised of three types of actions, which were actions the user can adopt on their own initiative, actions they are willing to accept from the central government, as well as actions they are willing to adopt from the local government.	

Rec_Eng_11	Implement adaptive communication strategies
Case: Modify the communication strategies according to how stakeholders respond and participate in different levels. Postpone any surveys until stakeholders have had more of a chance to interact with the service or tool (better response rates). Tailor communication channels and messages for unique groups to keep them informed.	

5. Technical recommendations when developing collaborative policies impacting the environment

The COMPAIR project featured the development of multiple online dashboards and tools meant to be used by citizens throughout the project. From the development and the use phases of the tools, a few recommendations have emerged.

Rec_Tec_01	Ensure technical reliability and support for citizen science projects
Case: All pilots stressed the importance of technical reliability and support for citizen science projects in order to keep citizens engaged and also to contribute to policy impact by building a foundation of trust and sustained participation. When participants see consistent, reliable outcomes and know support is available, they are more likely to remain engaged and contribute valuable data over time. This technical reliability provides policymakers with dependable insights that can shape evidence-based policies. Moreover, technical support lowers barriers for citizen participation, widening the demographic scope of contributors, which ensures that policies reflect a more diverse set of community perspectives. More specifically: ● **Ensure connectivity and Plan B if there are such issues**: The rise of the Internet of Things (IoT) provides many opportunities but not all countries support standards like NB-IoT or LTE-M or the coverage is not good. It's essential to test the sensors for connectivity to ensure uninterrupted data transfer from the devices to the cloud and to have a Plan B with sensors that are using another technology for transferring data. ● **Ongoing support and troubleshooting**: Ongoing support and clear troubleshooting instructions are essential to handle common issues such longer battery life, data transmission etc. That would possibly mean providing continuous charging plugs to tackle these challenges.	

- **Adequate technical preparation:** Ensure thorough testing and technical support for all devices and platforms used in the project. Address potential technical challenges early to prevent participant frustration and abandonment due to equipment failures or usability issues.

- **Access to reliable data and continuous technical support**: Citizen science tools (such as sensors, dashboards) must always work properly because citizen scientists would get demotivated otherwise. Having a reliable & simple user interface in place will decrease any downfall that users might have faced.

Rec_Tec_02	**Collect citizen feedback and have iterative and direct implementation of participants' feedback**
Case: The importance of citizen feedback in improving the tools was highlighted in Athens, Sofia, Herzele and Berlin. Gathering feedback from participants and using it to improve tools and methods should be a standard approach. This will ensure the accessibility and effectiveness of the tools for all citizens. Create an iterative feedback loop (for the CO2 calculator, DEV-D, bcMeter) where you start with a smaller, more manageable version of the test before rolling it out to all users. Use this feedback to iterate on the tool before a wider release. This will ensure that the tool is fit for purpose for both those who will be using it and those at a higher level who will be making policy, even before such tools are released to a wider audience. Develop a responsive development process for apps and dashboards, where feedback from participants, including policy-makers, is directly implemented to improve functionality during the project. This approach can improve the user experience and increase the effectiveness of the tools.	

Rec_Tec_03	**User-friendly tools**
Case: The challenges experienced by elderly people in using more complex sensors illustrate the importance of designing simplified tools and devices. Making it easier with user-friendly and easy-to-assemble equipment can increase participation.	

Rec_Tec_04	**Usage of low-cost sensors**
Case: Fill in the gaps in the official networks using accessible DIY sensors. Although less accurate, these sensors could be used as a method of observing trends and indications that something is out of the norm, preparing authorities to deploy resources to collect more accurate data.	

Rec_Tec_05	Upgrade sensor technology for automatic data analysis
Case: Upgrade sensors with features such as a dedicated on/off switch to prevent indoor measurements from skewing data. Improved sensors can lead to more accurate and reliable data collection, making analysis easier and more meaningful.	

Rec_Tec_06	Improve public data visualisation tools
Case: Improve public visualisation platforms to better represent data collected from mobile phone sensors. For example, adding a linear time versus PM2.5 plot could help users, including policy-makers, understand pollution trends more clearly and allow them to provide more accurate annotations and insights into their data logs.	

6. Recommendations for Legal and Ethics

The COMPAIR project, as a citizen science project, featured contact with citizens and their data. Appropriate steps were taken to ensure the protection of citizens' rights regarding their participation and the handling of their data. Through this, the following recommendations emerged:

Rec_Leg_01	Address Ethical Issues in Urban Planning
Case: Be mindful of the ethical implications of urban projects that may disproportionately benefit middle or high-SES communities while leaving out disadvantaged low-SES neighbourhoods. Engage all affected communities in the planning and decision-making process to ensure equitable outcomes.	

Rec_Leg_02	Privacy-first data collection
Case: Address the principle of data minimisation and privacy-by-design in citizen science projects, collecting only necessary data that is relevant to project goals. Ensure that data is stored securely and that participants are informed of their rights through clear consent forms and privacy policies.	

Rec_Leg_03	Develop Tailored Consent Forms for Each Pilot Partner
Case: Develop specific, tailored consent forms for each pilot partner that clearly communicate the scope, purpose and data management procedures of the project, using clear and plain language, taking into consideration the vulnerable communities that were	

involved. This approach ensures that participants are well informed about how their data will be used and stored and promotes trust and ethical standards.

7. Connection with SDGs and EU strategic goals

The Sustainable Development Goals (SDGs) represent a global initiative aimed at eradicating poverty, safeguarding the planet, and enhancing the quality of life and opportunities for everyone, everywhere. Adopted by all United Nations member states in September 2015, these Goals form part of the 2030 Agenda for Sustainable Development, which outlines a 15-year framework for achieving the Goals and their associated targets. This marked a historic commitment by world leaders to unified action across an expansive and universal policy agenda.

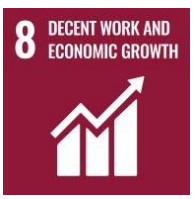
The 17 Goals are interlinked, applicable to all nations, and require collaboration from all stakeholders—governments, the private sector, civil society, the UN system, and others—working in partnership.

COMPAIR has an impact on the following UN Sustainable Development Goals (SDGs):

Goal 3: Good Health and Wellbeing
Ensure healthy lives and promote well-being for all at all ages

Goal 4: Quality Education
Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

Goal 5: Gender Equality
Ensure healthy lives and promote well-being for all at all ages



Goal 8: Decent work & growth
Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

Goal 10: Reduced Inequalities
Reduce inequality within and among countries.

Goal 11: Sustainable cities & communities
Make cities and human settlements inclusive, safe, resilient and sustainable.

Goal 17: Partnerships for the goals
Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.

The following table describes COMPAIR's contribution to these specific SDGs.

***Table 1**: COMPAIR Contribution on SDG's*

SDG	COMPAIR Contribution	Specific SDG indicator
Goal 3: Good Health and Wellbeing	● Helps reduce the number of deaths and illnesses from hazardous chemicals and air ● Creates better awareness of air pollution levels and personal impact via the AR app, dashboards, and dynamic exposure measurements	3.9
Goal 4: Quality education	● Supplements and reinforces the traditional science curriculum with hands-on activity ● Uses professional scientists to facilitate the work of the citizen scientists ● Increases the skill level of citizen scientists through our Citizen Science Lab	4.4, 4.7
Goal 5: Gender equality	● Ensures representative participation of the (local) population in citizen science activities, in particular, the dynamic exposure pilot ● Ensures women are represented both as researchers and as citizen scientists	5.5
Goal 8: Decent work & growth	● Open citizens up to the potential of a future science-related career ● Provides new open data sources that can be leveraged for/by innovative start-ups	8.3
Goal 10: Reduced Inequalities	● Ensures lower LSE groups also have access to the same opportunities and knowledge ● Data visual dashboards ensure everyone can easily analyse data	10.2

Goal 11: Sustainable cities & communities	● Enriches existing city data sources that are currently being used for decision-making ● Enables anyone to leverage CS Lab & Dashboard for CS experiments for policy ● Leverages business model opportunities for the long-term implementation of CS	11.3, 11.6
Goal 17: Partnerships for the goals	● Positions CS as a resource for high-quality research that supports the SDGs ● Raises awareness amongst citizens and communities of the SDGs	17.1, 17.2

The recommendations for environmental policies that emerged from the pilots' use cases are closely aligned with several of the Sustainable Development Goals (SDGs) addressed by COMPAIR.

The European Green Deal is a package of policy initiatives, which aims to set the EU on the path to a green transition, with the ultimate goal of reaching climate neutrality by 2050. It supports the transformation of the EU into a fair and prosperous society with a modern and competitive economy. The European Union's strategic goals are guided by the European Green Deal and address various domains, including climate action, energy independence.

Table 2 demonstrates the connection between the recommendations, the SDGs and the EU Strategic Goals.

***Table 2**: Recommendations Alignment with SDG's*

Policy Recommendations Impacting the Environment	Sustainable Development Goals (SDGs)	EU Strategic Goal
Improving cycling infrastructure (including bicycle lanes and sharing programs)	3: Good Health and Wellbeing 11: Sustainable Cities and Communities 13: Climate Action	Sustainable and Smart Mobility Strategy
Improve public transport services (focusing on availability and diversity - different types).	3: Good Health and Wellbeing 13: Climate Action	Sustainable and Smart Mobility Strategy
Improving household energy efficiency through government support initiatives.	3: Good Health and Wellbeing 11: Sustainable Cities and Communities 13: Climate Action	Renovation Wave Strategy
Increasing the use of renewable energy sources (such as solar and wind).	3: Good Health and Wellbeing 7: Affordable and Clean Energy 13: Climate Action	Renewable Energy Directive
Creation of green ports.	3: Good Health and Wellbeing 9: Industry, Innovation, and Infrastructure 13: Climate Action	Sustainable and Smart Mobility Strategy

	14: Life Below Water	

8. Conclusion

This deliverable highlights various recommendations drawn from the pilot use cases, public round, and tools of the COMPAIR project. These recommendations focus on improving environmental policy, citizen engagement, technical development, and legal and ethical considerations in collaborative environmental initiatives.

The environmental policy recommendations emerged through the use of the COMPAIR tools as part of the various use cases during the pilots. Feedback from citizens, gathered through the Scenario Simulation Dashboard in Athens and Sofia, suggests several practical actions, including improving cycling infrastructure, enhancing public transportation, and increasing household energy efficiency with government support. The analysis of local pollution sources, traffic patterns, and seasonal variations in air quality further underscores the need for targeted, location-specific environmental policies. Future projects should further investigate how data-driven policy making can be improved by ehnancing the collection, processing, and management of this type of data.

Engaging a diverse demographic is crucial for the success of initiatives like the COMPAIR project. The project adopted various methods for involving marginalised communities, such as elderly citizens, students, and low socio-economic groups. These methods have proved to be successful and can be applied to other similar initiatives. It must be noted, however, that these methods need to be adapted to each project's requirements and are not “one size fits all” solutions. Future projects should make sure they adopt the most appropriate methods for approaching each LSES group. These methods must depend on the LSES group and the objective of the project, and not be ones that are just considered previously successful.

Adapting technical solutions to the users is crucial, especially in citizen science projects that target various demographics. Good communication between the technical and pilot partners is essential to ensure that tools are user-friendly, reliable, and meet the diverse needs of participants. Future projects should make sure there is good communication among the technical partners, the pilot partners, and the stakeholders, so that the initial requirements are based on actual needs and further feedback is communicated efficiently.

Finally, ensuring the privacy of citizens in citizen science projects is of utmost importance, both from a legal and ethical point of view, but also to give citizens a sense of security. Ensuring privacy, particularly for vulnerable groups, was a key focus, with tailored consent forms and privacy-first data collection practices. Future citizen science projects should continue to prioritise equitable treatment of all participants, through transparency and clear communication about data usage.