Engagement of Local Government in Bulgaria with Air Pollution: The Role of Media and Civil Society in Sofia

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Ангажиране на местната власт в България със замърсяването на въздуха: Ролята на медиите и гражданското общество в София

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Abstract

Air pollution communication and engagement are vital on the road to solving this environmental and health problem. Three main groups tend to engage in it and communicate with citizens: civil society/non-governmental organizations (NGOs), media, and governments. This paper studies how these actors interact in the Bulgarian capital Sofia, as research on air pollution engagement on a city level in Eastern Europe is very limited. This article finds that a "bottom-up" model worked in air pollution engagement in Sofia. Civil society initiatives spark conversations with their actions and can create narratives for the media to cover. When the media started to cover the issue, more and more citizens became aware of it. Thus, pressure is put on local governments to also engage on the topic, with it being the last stakeholder to do so.

Keywords: air pollution, engagement, communication, Eastern Europe, media coverage, environmental issues

Резюме

Комуникацията и ангажираността по темата за замърсяването на въздуха е от жизненоважно значение за решаването на този екологичен и здравен проблем. Три основни групи участници се открояват в ангажираността си с него и го комуникират към гражданите: неправителствени организации/гражданско общество, медии и публична администрация. Тази статия изследва как тези заинтересовани страни си взаимодействат в българската столица София, тъй като изследванията по темата за ангажирането със замърсяването на въздуха в Източна Европа са много ограничени. Тази статия установява, че в София работи моделът „отдолу нагоре“ при ангажирането със замърсяването на въздуха. Инициативите на гражданското общество предизвикват дискусия със своите действия и са в състояние да създават наративи, които медиите да отразяват. Когато медиите започнат да отразяват темата, все повече граждани започват да научават за проблема. По този начин се оказва натиск върху местните власти също да се ангажират с темата, като те са последните заинтересовани страни, които го правят.

*Ключови думи***:** замърсяване на въздуха, ангажиране, комуникация, Източна Европа, медийно отразяване, проблеми на околната среда

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Introduction

When in 2016 the World Health Organization (WHO) announced that air pollution was a global public health emergency, some may have gasped with surprise, but others had known about the severity of the problem for a while (Vidal & Helm, 2016). While experts have been delving into the problem and looking for a solution for years, the topic has meanwhile become a more widely discussed one in the public space. Awareness and engagement on air pollution on a large scale have grown and the signs are there: in 2018 the WHO had its first global conference on the topic, for instance (World Health Organization, 2018).

Understanding how people think about the air they breathe and how they should be informed about it is vital so that solutions can be introduced and accepted by society, even if they are considered initially unpopular (Beaumont et al, 1999). For air quality to improve in different parts of the world, it is important to gain more knowledge about the rise of engagement among the wider public, but also the engagement of local or national governments. Also, solutions are hidden within behavioral change as opposed to technical innovation, so awareness must be widespread (Bickerstaff & Walker, 2001; Brimblecombe & Schuepbach, 2006). The existing literature on air pollution communication and engagement, as will be shown in the review in the following section, delineates three main groups that interact in this area: civil society, media, and public institutions. This paper studies how these actors interact on a city level, which events, organizations, or people trigger awareness in society, and, most importantly, how and when the local authorities in Sofia started acting upon this issue.

For 52% of Bulgarians, air pollution is indicated as the main problem related to the environment (Eurobarometer, 2019). Air quality in the Bulgarian capital has been improving over the years, mostly due to cleaning installations in industry, which used to be a main polluting source (Vision for Sofia, 2017). PM10 levels decreased significantly with the closure of Kremikovtsi (previously Bulgaria's largest metalworking company and located in proximity to Sofia) in 2008 (Stolichen obshtinski savet, 2015). Currently, Sofia has a problem mainly with PM10 and PM2.5 (Smetna palata na Republika Bulgaria, 2018). While Sofia may not be the Bulgarian city with the most exceedances of permissible values of pollutant concentrations, it certainly is the one with the biggest population in the country (Cherneva, 2020).

The existing literature on air pollution communication and engagement rarely focuses on Eastern Europe, so this paper is one step toward filling this gap. The value of this research lies in the fact that it will attempt to grasp contemporary communication and engagement dynamics in Eastern European capitals and understand how air pollution becomes important respectively to the general public and policy-makers.

Literature review

General Factors for a More Increased Engagement

Firstly, probably the most significant factor for engagement is "primary experience", a concept introduced by Bickerstaff & Walker (2001, p.143). It can encompass either proximity to pollution or health vulnerability to the environment. Living close to air pollution or its sources can make people care a lot more (Bush, Moffatt & Dunn, 2001; Moffatt et al., 2002). Any personal cues, "particularly sensory and health", are often used a lot more than official information about air quality (Johnson, 2012, p.48). Health issues and symptoms also make people more engaged with air pollution as they experience its negative effects more tangibly (Skov et al., 1991; Pantavou, Lykoudis, and Psiloglou, 2017; Johnson, 2012). Also, any visible indicators or smells are key awareness sources (Bickerstaff & Walker, 2001).

Role of Governments

Governments may often have the legal obligation to provide information on air pollution; thus, they can not only communicate the issue but also engage citizens in a potential behavioral change. As communicators, they often underestimate the level of trust they face and assume it is there (Bush, Moffatt & Dunn, 2001). They often face a lack of trust and criticism from the citizens or other stakeholders (Yearley, 2006). Credibility is a key part of public perception and when it is low, engagement also suffers (Bickerstaff & Walker, 1999).

Local and governmental agencies are shown as having questionable success according to a study by Oltra & Sala (2015, p.369) as there was a "lack of public understanding of air pollution levels and the lack of response to air pollution alerts" when they were the leading communicators. Recent studies are proposing that governments become more collaborative with other stakeholders, especially in air quality monitoring, to achieve higher credibility and engagement among citizens (Wong et al., 2018).

Non-governmental organizations (NGOs)

The second key participants in air pollution engagement are NGOs as representatives of civil society. As Binder and Neumayer (2005) have stated, environmental NGOs can be helpful when it comes to reducing air pollution, specifically sulfur dioxide, smoke, and heavy particulates and the general notion is that they have an impact on policy (Binder & Neumayer, 2005). Civil society and NGOs in post-communist countries can challenge governmental environmental policies and local groups push institutional changes to enhance participation (Niedziałkowski & Chmielewski, 2023). Scholars have also identified that providing information on air quality is one of civil society's main functions (Gemmill & Bamidele-Izu, 2002). NGOs participate actively in science communication of air pollution issues (Brimblecombe & Schuepbach, 2006). They can allow themselves more flexibility when it comes to channels and methods of choice and their role is further amplified when the government or media's credibility is somewhat tainted (Xu, 2014). Thus, their participation in the engagement on environmental matters, specifically air pollution, is crucial, especially in countries where democracy is of lower quality. In recent years, they have been more active in citizen science projects (Xu, 2014).

Traditional Media

Traditional media (TV, print newspapers magazines, etc.) is one of the key actors who communicate the issue. In the late 90s, the most popular choice of source of information on air pollution among people was the media (Beaumont et al, 1999). Its main benefit to this day is that it can reach a large audience (Wakefield, Loken & Hornik, 2010; Jacob, 2014). Still, it has been argued that it is not very engaging as its communication is passive when it comes to the viewers or readers: its only act is to consume information (Wakefield, Loken & Hornik, 2010). Air pollution media coverage often focuses on health risks, but is less focused on protective measures, so it does not contribute to the improvement of the environmental health literacy of citizens (Ramondt and Ramirez, 2020). Thus, it is considered to have a low impact as an awareness creator as it is only a secondary source of information, compared to, for instance, primary experience such as illness (Bickerstaff & Walker, 2001)

Also, an issue with media as an engagement actor is that it has different objectives than, for instance, scientists (Brimblecombe & Schuepbach, 2006). Media often operates as a business and responds to consumer desires. As an actor of communication, media can be risky, as pointed out

by Mayer (2012). It may focus on the mere reporting of pollution levels without providing policy suggestions or cover some health impacts without warning vulnerable groups and educating the public in a constructive way (Murukutla, 2017). Traditional media also can lead to misconceptions about air quality risks (Cisneros & Schweizer, 2018).

Furthermore, outlets would "only run stories which they regard worthwhile" (Beaumont et al., 1999). Therefore, an environmental story should be somewhat commercialized for media channels to have a desire to cover it. Even though in recent years environmental reporting on air quality has increased, the media tends to seek sensations to gain more attention from the public (Mayer, 2012). Thus, its objectivity and reliance on hard scientific evidence can be questioned. Finally, if it misses the opportunity to name the responsible stakeholders, it will not serve its full potential (Murukutla, 2017).

Digitalization

Digitalization changes the way communication works. For example, social media has been functioning as a representation of public opinion and reactions to air quality (O'Leary et al., 2022). Social media also plays a role in the engagement of stakeholders such as public institutions as complaints about bad air quality trigger environmental measures by governments (Wang et al, 2020). Digitalization allows citizens to participate actively by posting photos and videos or monitoring air quality through mobile tools (Johnston et al., 2019). Air-quality mobile apps can engage citizens, especially those groups who are vulnerable or exercise outdoors (Delmas & Kohli, 2019)

Medical professionals and scientists

Medical professionals are one of the groups that have been briefly mentioned both in the literature and in the study, presented later in this paper. Borbet, Gladson & Kramor (2018) suggest that medical professionals can be strong communicators of air pollution risks and need to be included in the process, especially because certain vulnerable groups are going to be affected more strongly by bad air quality – e.g., people with cardiovascular disease. Both health professionals and scientists have a key role in the communication on air pollution, especially between various stakeholders and policymakers (Sanderson et al., 2006). This is essential for researchers to steer their work in constructive directions and provide a basis for later policymaking. Combining science with public perceptions would increase the effectiveness of air pollution communication

(Bickerstaff, 2004). Still, scientific messages need to be translated into simple wording, so that the wider public can understand them and be influenced by them (Ramírez et al., 2019).

Methodology

The study used a semi-structured interview approach, as it allows some freedom when asking the questions (Denscombe, 2017). Interviews allow for establishing links or explanations to be identified during conversations (Yin, 2009). However, their limitations need to be acknowledged as well. Interviews contain various types of bias including response bias and bias formed due to poorly constructed questions (Yin, 2009). The main criteria for choosing the interviewees was for them to be involved directly in air pollution communication or policy-making and to have as much experience as possible. The three groups of stakeholders were identified through the literature review: local government, media/ journalists, and civil society. As it is a relatively unexplored topic, especially in Sofia, the focus was on experts as opposed to a wider public. The interviews were carried out flexibly, as interviewees varied in background, experience, and familiarity with the topic.

Eleven interviewers participated in the study: three local government representatives, two journalists, four members of NGOs/civil society, and two people whose work was related to local government, but was not a policy-making unit. The latter can be described as members of in-house think tanks for Sofia Municipality.

The interviews were carried out mostly live, with only a few exceptions where the interviews were via phone and one which was via email. To avoid any reluctance in the interviewees to provide with the most honest answers, anonymity was guaranteed.

Among the main set of questions used as a roadmap to gain a detailed understanding of the case studies are:

- What are the most significant factors that contributed to the rise of engagement on the topic, if such is identified?
- Do you think air pollution is on the agenda for local governments? If yes, what examples can you provide?

Results

This section includes the findings from the semi-structured interviews conducted on which factors contributed to the rise of awareness of the topic of air pollution in society as a whole and Sofia Municipality as follows. The information included in this section is provided by the interviewees/respondents who participated in the semi-structured interviews.

Table 1

Summary of the factors, events, organizations, or phenomena that interviewees identified as main contributors to awareness growth about air pollution in Sofia in recent years.

Respondent / Interviewee	**Responses: Which were the Main Catalysts of Awareness**
1	-European Court of Justice decision against Bulgaria regarding air pollution case (2017)
2	-Internet and the increasing access to information and data; -The European Union's impact on policies and mechanisms (mainly impacting local government awareness)
3	-Media coverage, especially TV
4	-Activists (ex. Boyan Yurokov and Bozhidar Bozhanov); -AirBG.Info
5	- NGO: AirBG.Info and the fact that citizens measure; more transparency of data; - European Court of Justice decision against Bulgaria regarding air pollution case (2017)
6	-AirBG Info; -NGOs: Za Zemiata and Greenpeace; - NGOs Spasi Sofia's campaign involving putting gas masks on statues in central Sofia (January 2017); -Media coverage (in selected publications); -European Court of Justice decision against Bulgaria regarding air pollution case (2017)
7	- NGO Spasi Sofia's campaign involving putting gas masks on statues in central Sofia (January 2017); -Media attention
8	-NGO AirSofia.info
9	-NGO AirSofia.info
10	-Media coverage
11	-European Court of Justice decision against Bulgaria regarding air pollution case (2017); -European Commission's overall engagement on the topic; -Volkswagen emissions scandal correlated in time as well; -AirSofia.info

The Rise of Air Pollution to the Agenda

First of all, it is important to point out that there is a consensus among interviewees on when air pollution gained more popularity among Sofia's citizens. Almost all of them replied that it was in 2015/2016 when the topic started to gain momentum. Next, some interviewees, most often local authorities respondents who are somewhat biased, pointed out that the topic was tackled by Sofia Municipality before it became important for citizens as well. "On one hand, there was public pressure, which appeared through media and NGOs, as well as the legal actions against Bulgaria by the European Commission", says one respondent. However, according to the opinion shared by the other, non-government related, interviewees, local authorities' engagement has increased, but they had not been taking any significant steps for tackling the issue before these events and have been "reactive" to external forces as opposed to "proactive". The Program for Management of Air Quality of Sofia Municipality 2015-2020: Decrease of Emissions and Reaching Norms for PM10, the city's air quality plan, has been published since 2011 for every four years, as it is obligatory for the capital to one under the EU Air Quality Directive 2008/50/EU (Stolichen obshtinski savet, 2015). However, the most recent version of the 2015-2020 plan was adopted in 2017, which means it was delayed by two years (Petrov, 2017). There were advances and developments in the measures, according to the local authorities, so these changes and possible improvements might be considered as a slight increase in engagement. Still, the air quality plan is the authorities' official duty by law.

Other examples of further engagement include administrative changes: a special media advisor was hired in 2017 to conduct communication on environmental topics and a new administrative unit was also formed within Sofia Municipality, called the "Air, climate & energy" directorate, in 2017. Furthermore, Sofia Municipality is developing a mobile app that will provide its users with information on air quality policies and push notifications when the air quality is deteriorating. It also created a webpage dedicated to air quality data in the city (published daily), measures, and news related to the topic[1].

In addition, the local authority is participating in an international project for funding monitoring stations (Interreg Balkan-Mediterranean, 2018). Sofia Municipality has been consistent in

[1] See https://air.sofia.bg/

preparing and publishing a report on air quality management programs since 2018.[2] It did not do so before that year which is another sign that its engagement followed the trend in society of air pollution awareness.

General Role of Civil Society

Six out of eleven people pointed out that some form of civil society was among the main factors that brought attention to the problem. Among the organizations named were Spasi Sofia, Za Zemiata, and Greenpeace, as well as AirBG.info. AirBG.Info is a citizen science project for monitoring air pollution in Sofia and other cities in Bulgaria which started in April 2017 (AirBG.Info, 2023). Za Zemiata (which means "For the Earth" translated from Bulgarian) is a Bulgarian environmental non-governmental organization that is engaged in multiple campaigns and projects including air pollution,

climate change, and waste management (Za Zemiata, 2023). Spasi Sofia (which means "Save Sofia" translated from Bulgarian) is a "Bulgarian watchdog organization striving to identify the problems of Bulgaria's capital Sofia and to propose adequate solutions and alternatives" (Spasi Sofia, 2018). One interviewee highlighted the role of two individual activists. Civil society seems like the prevalent phenomenon that has engaged communities within the capital.

Role of Citizen Science

Six out of the eleven interviewees - or more than half of the respondents - pointed to AirBg.Info as one of the main factors that brought air pollution to the agenda. AirBG.Info is a citizen science project for monitoring air pollution in Sofia and other cities in Bulgaria which started in April 2017 (AirBG.Info, 2018). The air pollution data, monitored by the Executive Environmental Agency, was not publicly available on a webpage and easily visualized. At the time when the study was performed, the Executive Environmental Agency as an official air quality source posted only the exceedances of the limit concentrations values, but not live information from monitoring stations. The citizen network provided a new source of data for the residents of Sofia.

As one of the interviewees points out, the media also needed more data to cover the issue as otherwise, it would not have had hard evidence when reporting on the issue of air pollution. Thus, citizen science in this case also provided a basis for more media attention and coverage of the problem. As a journalist interviewee pointed out, data access has made it easier for the media to

[2] See https://www.sofia.bg/components-environment-air

cover the issue with some evidence and without being accused of using misleading information. "When you have no basis for comparison and cannot say whether [the air] is dirtier or cleaner than last year… As a whole, there are accusations against the municipality about monitoring and reporting, and more or less [it is] glossing over the situation with the excess of pollution. And there are doubts that it has been concealed for years", says one interviewee.

According to one of the experts, the project and its publicity grew so much that the "Ministry of Environment and Sofia Municipality were forced to consider what was happening".

Two more activists, engaged with data, are mentioned in a conversation with one of the interviewees, Boyan Yurukov and Bozhidar Bozhanov. Both have blogs[3] which they use as platforms to disseminate information on air quality they gain through downloading them from institutions' websites.

Role of Media

Media attention has been pointed out by four of the interviewees as key to raising engagement levels. According to them, the media has spread the topic to the wider public. However, one interviewee highlights the fact that the media began to cover the issue more when certain societal groups became more engaged as it "follows public opinion". Another interviewee mentions that in the winter time TV channels have used visual cues when there is fog to illustrate air quality and claims that there is a possibility for misleading content in media. Two interviewees, from local government and media respectively – or both sides of the barricade - agreed that traditional media tends to portray Sofia Municipality in a rather negative light and being critical. Furthermore, two interviewees highlighted specific media outlets that were proactive in investigative journalism on the issue or interviewing air quality experts to educate the wider public.

Some of the interviewees agree that the time overlap between Save Sofia's campaign, where it placed gas masks on statues in Sofia city center to accent pollution levels, AirBG.info's launch and the European Court of Justice's decision that Bulgaria has violated its duties for air quality have altogether provided an increase of interesting viewpoints and stories through which media can cover air pollution.

[3] https://yurukov.net/blog/ and https://blog.bozho.net/

Role of European Union & Other External Factors

In April 2017 the European Court of Justice decided that Bulgaria "continues to fail to fulfill its obligations" regarding legal limits of air pollution in the European Union (European Court of Justice, 2017). The European Commission had filed a case against the country (as well as others) for not being able to comply with air quality limit values. Even though the case had been going on for a few years, when the decision came out, the news was covered by a range of media. However, it also has political value as it is an official decision and if Bulgaria continues not to fulfill its duties regarding air quality; it will be fined eventually, so policy-makers had institutional pressure. Another interviewee mentions that the EU has had a conditioning function by setting priorities and providing financing for specific causes, so it has also had a role in setting the air pollution agenda in Bulgaria.

The Volkswagen emissions scandal, called "Dieselgate", where it was revealed that the company cheated on pollution emissions tests, was briefly mentioned by one interviewee.

Evolution of Society & Internet

One interviewee emphasized the importance of the Internet and how aware individuals are of the living standards in societies beyond their own. They claimed that the development of communication and access to knowledge about other countries' lifestyles have broadened the horizons of members of Sofia communities.

Even though it will not be discussed separately, as it has been mentioned only briefly by two respondents, social media is also significant, as a platform that has allowed citizens to mobilize their efforts and communicate and share information quickly and easily. Also, social media, mainly Facebook, is used by stakeholders to engage in air pollution. AirBG.Info has largely benefited from Facebook communications as well for spreading its message.

Discussion

The observed relationship between stakeholders can be summed up as a "bottom-up" one when it comes to engagement - it is citizens and NGOs who are first to act upon the issue and media and local government follow in that order. Social media and digitalization were significant for that to happen, as the citizen science network AirBG.info relied specifically on that to achieve accessibility of data.

The absence of medical professionals as a loud voice on the topic should be mentioned. The existing literature has pointed out that they are a key group to communicate the harms of air pollution and raise awareness; however, they did not appear in the interviewees' responses. Even if there is research and experts in the field in Bulgaria, they have not been able to communicate their knowledge to a wider audience.

The Non-Governmental Sector and Civil Society Lead the Way

Strong voices in civil society most efficiently convey air pollution messages and translate them into tangible messages for society. Such examples appeared in the Results section: AirBG.info and Save Sofia stand out as significant triggers for engagement. These different members of civil society – NGOs, or activists, voluntarily spend time and effort on raising awareness on the issue through a variety of lenses. They chose legal, health, data, or visual instruments to paint an air pollution landscape for everyday citizens. A common denominator between them is their ability to communicate through a variety of methods or be creative when campaigning. Thus, civil society can be considered the most efficient, engaging actor, since it can spark interest or action in the wider public, media, or local government. provide narratives that media outlets can use to translate the relevance of air pollution to citizens. Studies, statistics, and political or symbolic acts can be especially triggering – so NGOs or people who are already aware should strive to be either creative in their approach or to find hard evidence for the problem.

Local government - a follower, not a leader

Overall, the study shows air pollution is becoming a more prevalent issue on the political agenda of Sofia municipality. It seems that the strongest stimuli for the engagement of local authorities are media and civil society initiatives, as well as external legal actions. Local governments react to the media's discussion of the topic because it puts the spotlight on its actions or inaction for all citizens, who are also potential voters, to see. This means that it is vital for journalists and editors to be engaged on the issue to see improvement in mayors' and municipalities' actions. Moreover, legal actions, like those by European institutions, have a tangible influence over policy-makers. Thus, engagement through the rule of law is necessary to see more action to be undertaken by authorities.

The fact that no interviewees mentioned a public servant or institution as a catalyst for awareness might be an indicator of two things. Firstly, Sofia Municipality has not been able to proactively

initiate public discourse on the issue. Secondly, it does not have credibility in the eyes of the constituents which is a common issue (Bickerstaff & Walker, 1999; Yearley, 2006). This might be linked to its delay in communication or its lack of thorough monitoring data. All in all, speaking openly about the issue and providing citizens with clear information on what pollution entails in the city might be efficient methods for adding credibility and relevance to local authorities as communicators of air pollution.

Numbers Are the Key

The importance of air quality data is supported by both studies in their specific ways. Research in Sofia shows how citizen science has a strong role when pollution data by public authorities is not publicly available and easily accessible. Not only that but there are examples of activists who have devoted time and energy to gain access to this data. Monitoring is a significant step in solving environmental issues (Kuklinska et al., 2015), but also in understanding them. Simply making it available can have a positive awareness impact on society (Kim, Ohkee & Kim, 2012). AirBG.info provided the quantification of the problem, which not only makes individuals more aware, but it provides journalists with information to include in articles and reportages. Without such data, no reporter can argue the extent of the problem. Again, we see civil society providing the content for media to disperse in the public realm.

Conclusion of Discussion

Engagement on air pollution in Sofia has grown between 2016 and 2018, civil society has played a vital role in pushing the issue on the agenda, and it reached the media through a variety of initiatives. Air quality data was lacking, so when the gap was filled by citizen groups, engagement became stronger. Journalists were predominantly passive, but responsive when campaigns by NGOs began. The European Union seems to have played a large role, especially with the Court of Justice's decision against the country. Local government became engaged in air pollution and started communicating after the other groups started raising awareness, being pressured by the other stakeholders.

Limitations

First, a bigger number of interviewees could have been included -a wider number of interviewees could have been included – however, saturation and receptiveness were achieved (Corbin & Strauss, 2008). Also, personal impressions may carry a distorted and not very objective

understanding of reality, so personal bias is also a vital constraint. Interviews of citizens can be carried out in further research to understand how they inform themselves and to gather even more data. Even though an initial idea was to include a survey like that in the research design, limited time and resources for this paper hindered it and further research will be produced with that method.

Conclusion

This research aimed to explore and understand the dynamics of air pollution engagement in Sofia, the capital of Bulgaria. The paper attempted to recognize the main actors, channels & and processes of air pollution communication within the cities, as well as the extent to which the general public and local government have engaged on the topic. While researching how air pollution has manifested on the agenda, this paper found that civil society is the key communicator and engagement actor for both the wider public and local government on the issue. Another significant requirement for more awareness is the presence of data which can be used both by the wider public and media to comprehend, communicate, and analyze the issue while having strong arguments when discussing it. Media also has a vital role, but for it to become a strong communicator on the topic, it needs to find a sensationalist angle to cover air pollution. Thus, civil society has another function: to provide narratives that media outlets can use to translate the relevance of air pollution to citizens. There are external events and institutions, such as the European Union (EU), which serve as engaging phenomena, but they do so more for governments than for the wider public. Local government does not initiate the conversation on air pollution. Civil society and media can put pressure on public institutions which, on their part, tend to react and place air pollution among their priorities. However, this study has not been able to evaluate if this engagement will produce effective results in alleviating pollution. Overall, this research created a roadmap for the rise of air pollution to the agenda in Eastern Europe and placed each stakeholder's role within a standardized framework.

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