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Between academic dependency and epistemic marginalization: a systematic literature review of environmental justice in post-socialist Eastern Europe

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ABSTRACT

This paper explores the academic conceptualization of environmental justice (EJ) in post-socialist Eastern Europe (EE) through a Systematic Literature Review (SLR) of 106 peer-reviewed articles from the early 1990s to 2024. The study focuses on two main directions. First, we examined knowledge production and found that EJ scholarship in EE only gained significant attention after the EU accession of countries in the region. Additionally, research on EJ issues in EE appears to be academically dependent on Western funding and expertise. Second, we investigated how authors approach EJ in EE by analysing the theoretical perspectives they adopt, the types of conflicts that receive attention, and whether there is a focus on ethnic minorities in the area. We identified a significant gap between the scholarship reviewed and EJ conflicts as reported in the Environmental Justice Atlas (EJ Atlas). This disconnect is notably evident for Roma communities, whose environmental harms are documented in activist literature but mostly overlooked in academia. Additionally, there is a disparity between the urban focus of EJ literature and the underrepresentation of rural cases. The paper underscores the epistemic marginalization of vulnerable communities, such as rural and Roma groups, and their grassroots perspectives on EJ.

KEYWORDS

Environmental justice; academic dependency; vulnerable groups; Eastern Europe; systematic literature review

Introduction

Over the past three decades, environmental justice (EJ) has evolved from a grassroots movement in the United States into a broad and influential theoretical and analytical framework that addresses the unequal distribution of environmental harms and benefits (Mohai, Pellow, and Roberts 2009; Schlosberg 2003; Schlosberg 2009). Rooted in struggles against toxic waste siting in marginalized communities (Bullard 1990) and expanded through scholarship in political ecology, urban studies, and human geography, EJ now includes a variety of concerns, from access to green spaces to the procedural inclusion of communities in environmental decision-making (Svarstad and Benjaminsen 2020). While

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most early EJ scholarship focused on the Global North, particularly the United States and the United Kingdom (Álvarez and Coolsaet 2020), and increasingly on the Global South, Eastern Europe (EE) remains a relatively underexplored region in this field. We believe that the relevance of EJ to this region is pressing, given the legacy of industrial pollution, post-socialist governance transitions, uneven development, and the rise of extractive and infrastructure-related conflicts across both rural and urban contexts.

This article systematically maps and analyses how environmental conflicts in post-socialist EE are framed within the EJ scholarship. Our analysis, based on a systematic literature review (SLR) of academic literature published between the late 1990s and 2024, examined 106 studies across Scopus and Web of Science. We identified knowledge production, dominant themes, geographic and institutional patterns of authorship, theoretical approaches, discussed conflicts, and foci of interest. To determine how well EJ scholarship reflects the situation in EE, we contrast our results with the data documented in the Environmental Justice Atlas (EJ Atlas),¹ a global collaborative database that systematically documents thousands of environmental conflicts worldwide. Because the EJ Atlas compiles cases from grassroots movements, NGOs, and local researchers, it offers a complementary, ground-level perspective that captures conflicts often absent from academic production (for details, see Temper et al. 2018), or which get academics' attention with a significant delay. This is not to say that the EJ Atlas produces a localized view of EJ, as even regional environmental conflicts are considered inherently systemic and global within the broader EJ theoretical framework and by the EJ Atlas editors themselves (Temper, Del Bene, and Martinez-Alier 2015).

Our primary objective is therefore to conduct a thorough SLR for EE, with a specific focus on a quantitative analysis of academic output. These results will then be compared with the community-sourced content available in the EJ Atlas. While some aspects of our research are qualitative, such as identifying and categorizing articles based on our coding scheme, our overall approach remains predominantly quantitative. This quantitative approach, however, does come with its own set of limitations (which we will discuss later). And although our quantitative approach may not fully capture the depth of the material, it does provide a broad overview, which is notably absent in academic literature. This serves as a starting point for future, more in-depth studies.

This paper constitutes a first step in systematically mapping how EJ is conceptualized in post-socialist EE. The review was guided by two central dimensions of research. The first one concerns knowledge production and comprises such issues as: the overall scholarly interest in EJ, funding, institutional affiliations or the geographical scope of these studies. The second deals with how the studies under review were conducted in terms of the methodologies employed, the EJ conflicts examined, their locations, and their main concepts and theoretical approaches. These questions inform not only the analytical lens of our study but also the criteria used for selecting, coding, and synthesizing the literature. To map the answers to these questions, we try to identify whether the idea that the EU has its own Global South, which is that various forms of discrimination and injustices exist within and among member states (Jaria-Manzano 2020), emerges or not from the quantitative analysis that we perform.

The article is structured as follows. It begins with a literature review, which situates our contribution within the broader field of EJ scholarship and identifies key insights from existing systematic literature reviews. We then present the methodology, detailing our

data collection procedures, coding strategies, analytical framework, and some of the limitations that we identified. What follows is the Results section. The subsequent empirical discussion centres both on the issue of academic dependency (Alatas 2003) that characterizes the EJ scholarship in EE, and on how the dominant methodologies, conceptual frameworks, conflict types, and country-level focuses of the reviewed studies contribute to the epistemic marginalization of already marginalized groups in the area. The article concludes with a discussion of the limitations of our review and a reflection on the findings and their implications for advancing EJ research in post-socialist EE.

Main concepts and related systematic literature reviews

Our main theoretical framework is environmental justice (EJ), defined as the disproportionate contamination or exposure to risk that vulnerable groups (people of colour, ethnic minorities, women, low-income communities) are experiencing (Bullard 1990; Carruthers 2008; Pellow 2000; Pulido 1996). These foundational EJ studies have shown that race, ethnicity, class and gender determine the proximity and exposure to environmental hazards and risks. The origins of EJ theory are the civil rights movement in the USA and the 1982 protests and debates about the PCB landfill. One central definition to EJ theory is that of “environment” as the “place where we live, work, play . . . and eat” (Gottlieb 2009; Novotny 2000). This is also our conceptual point of departure, while EJ is our main analytical lens for examining how different types of environmental conflicts disproportionately impact minority and low-income groups in EE and produce multiple forms of harms, loss and damage.

Our SLR analysis is based on a coding of the academic articles that follow the operationalization of the five dimensions of EJ theory, namely *distribution*, understood as equal allocation of environmental benefits and costs and their associated responsibilities (D. A. McCauley et al. 2013); *participation*, the equitable procedures that engage all stakeholders non-discriminatory (Fraser 2001; Schlosberg 2013); *recognition*, the fair representation of groups, regions and identities in society (Jenkins, Sovacool, and McCauley 2018, Levenda, Behrsin, and Disano 2021); *community capabilities*, the universally and constitutionally guaranteed rights to bodily health; bodily integrity; senses, imagination and thought; emotions; play; and control over one’s environment (Nussbaum 2000; Schlosberg and Carruthers 2010; Sen 1999).

While these dimensions often adhere to the liberal, distributive language of justice, as described by Rawls (1999), as fairness in the allocation of externalities, more critical approaches to EJ show that the dilemmas of justice are broader and deeper than the “recognition vs. redistribution” framework (Pellow 2018; Schlosberg and Carruthers 2010). Political ecology emphasizes that inequalities are produced through the specific ways in which nature is produced, as exploitation and extraction within the capitalist system (Heynen, Kaika, and Swyngedouw 2006). In an attempt to unsettle more mainstream understandings, Velicu and Kaika (2017) argue for undoing EJ: refusing the co-optation of justice into the extractivist institutional logics of neoliberalism and instead pursuing justice as a radical, egalitarian performance that disrupts the status quo and opens up space for new political subjects and imaginaries to emerge (Velicu and Kaika 2017). This perspective aligns with the idea of performative justice, which emphasizes justice as something to be enacted rather than just claimed, staged and practiced through

embodied, everyday practices that challenge hegemonic power structures and create space for alternative ways of being and knowing (Hobson 2006; Houston and Pulido 2002; Jamal and Hales 2016). *Performative EJ* is therefore the fifth EJ dimension that we used in our operationalization.

Arguing for the need of developing a critical framework in EJ research, Pellow (2018) introduces four main pillars of Critical EJ: a more intersectional perspective in EJ research, a multiscalar approach in understanding environmental conflicts, going beyond simple reformist perspectives and acknowledging the indispensability of humans and more-than-human worlds in building a more just and sustainable future. In line with Pellow's framework for a critical EJ, Malin and Ryder (2018) also argue for the need of a deeply intersectional approach in EJ that considers the multiple axes of identity and how they shape the experience of environmental violence and their capacity to resist. More recently, various authors have argued for the need of a decolonial and abolitionist perspective that can enrich the critical EJ framework by bringing to the forefront how environmental harm is deeply rooted in colonial systems of power and domination (Álvarez and Coolsaet 2020; Pulido and De Lara 2018). Abolitionist approaches aim to challenge the structure of racial capitalism that continues to marginalize communities of colour, while decolonial theory challenges the ongoing effects of colonialism, including the subjugation of non-Western knowledge systems (Quijano 2007). Following this understanding, applying Western knowledge frameworks uncritically in the Global South constitutes a form of epistemic violence, referring to the silencing and devaluing of the local system of knowledge (Spivak 1988; Vermeylen 2019). In response, scholars advocate for a more radical and place-based approach to EJ, towards transformative and restorative justice (Kojola and Pellow 2021; D. McCauley and Heffron 2018), that go beyond rights-based approaches.

A growing body of systematic literature reviews (SLRs) has shaped the EJ field by tracing its conceptual evolution, identifying empirical trends, and addressing topical concerns. For example, Sidique and Zaidi (2024) examine the historical development of EJ in India, showing it is rooted in socio-economic struggles rather than race, with pivotal events like the Bhopal Gas Disaster and a strong judiciary shaping the discourse. Neimanis, Castleden, and Rainham (2012) highlight the anthropocentric orientation of early EJ literature and call for greater inclusion of ecological integrity. Similarly, Bowen (2002) critiques the weak empirical foundations of EJ research in the U.S., arguing for a shift from advocacy-driven work to more rigorous, data-informed studies.

Building on these thematic and historical syntheses, Brondi, Chiara, and Matutini (2025) provide an overview of 40 years of EJ research, mapping its conceptual diversification and the proliferation of analytical frameworks. They trace EJ's expansion from a predominantly U.S.-centric, distributive justice orientation towards multi-dimensional approaches integrating recognition, participation, and intersectionality. The article also maps EJ's thematic broadening into areas such as climate justice, energy transitions, and urban resilience, while highlighting persistent geographical imbalances – most notably an overconcentration of studies in Global North urban contexts, a relative neglect of Global South and rural/local case studies, and limited research that connects place-based lived experiences with global-scale EJ frameworks. Methodologically, Brondi, Chiara, and Matutini (2025) emphasize the importance of mixed-method approaches that bridge quantitative exposure assessments

with qualitative accounts of lived experience, alongside greater transdisciplinary collaboration to link EJ theory with policy and practice. These identified gaps, both conceptual and geographic, provide a direct point of departure for the present review, which applies a systematic literature review approach to explore how EJ is conceptualized and operationalized in the environmental conflict literature of post-socialist EE.

In terms of empirical trends and methodological limitations, Althor and Witt (2020) provide a large-scale quantitative synthesis of environmental distributive justice (EDJ) research, revealing significant geographic and demographic imbalances. The United States dominates both authorship and study locations, while regions such as Africa, Latin America, and much of Asia remain underrepresented. Studies tend to focus on economic status, geographic location, and race or ethnicity, while marginalized groups like religious minorities and LGBTQ+ communities receive minimal attention. Most research relies on secondary data and GIS-based methods, with few linking environmental injustices to concrete human well-being outcomes. Weigand et al. (2019) also examine methodological issues through a review of remote sensing applications in EJ, noting that while these tools can document spatial patterns of harm, they often fail to incorporate participatory or community-based approaches, limiting their social impact and relevance.

Topical and applied areas of EJ research are addressed by Mullenbach and Baker (2018), who review literature on the intersection of environmental justice and public green space. Their work identifies environmental gentrification as an emerging concern, where environmental improvements like parks may inadvertently displace low-income or minority residents. This shift brings EJ discourse into dialogue with urban planning and leisure studies, emphasizing the need for policies that promote both ecological quality and social equity.

These reviews reveal an expanding EJ research agenda that is increasingly multidimensional, geographically varied, and methodologically diverse. Most importantly for us, they also show that certain areas remain underexplored where environmental conflicts intersect with legacies of political and economic post-communist transition. As Brondi, Chiara, and Matutini (2025) highlight, global EJ syntheses tend to overrepresent research from Global North urban contexts, give comparatively less attention to Global South and rural/local case studies, and rarely integrate local lived experiences into global-scale frameworks. Within this broader pattern of geographical imbalance, post-socialist EE has received little dedicated attention in the EJ literature, leaving important questions about how environmental justice is conceptualized, framed, and operationalized in these settings. Addressing this gap requires systematic research that can capture both the breadth of existing scholarship and the specificities of local contexts.

Methodology

This study uses a systematic literature review (SLR) approach to examine the relationship between the scholarship regarding environmental justice (EJ) and environmental conflicts in Eastern Europe, as reported in the EJ Atlas. The collection of the items in our SLR was conducted in two phases: the first between November 2023 and February 2024, and the second between June and July 2025.² The review aimed to identify, categorize, and synthesize relevant academic literature from journals indexed in the Scopus and Web of

Science databases. Since the aim of our SLR is to identify all the academic literature pertaining to EJ issues in EE, we did not limit our selection to a single document type (e.g. “Article”) and included the following types: article, review article, conference proceedings and book chapters.

To ensure the relevance and consistency of our sampled literature, clear inclusion and exclusion criteria were applied. The geographical scope was defined broadly, based on the historical delimitation of former socialist countries, and included the following: Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Kosovo, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovak Republic, Slovenia and Ukraine. This list of countries constitutes what we refer to as Eastern Europe (EE). However, it is important to note that, although they share a certain historical and cultural background (e.g. their similar socialist and post-socialist trajectories), there are significant differences between these countries (see Starnawski and Warren 2023, 1–7 for a detailed discussion) that tend to be obscured by such generalizations like the one adopted here, which lumps them under the label EE for operational purposes. It is also equally important to point out that although the environmental conflicts in EE countries might seem to be of local importance, they are without exception linked to broader global patterns and value chains (e.g. Csomós, Donát Kovács, and Zsolt Farkas 2025).

Thematic relevance was a key inclusion criterion: studies must address environmental justice or related issues like inequality, governance, access to environmental goods, or socio-environmental conflicts. Eligible materials include qualitative and quantitative research, case studies, and comparative analyses. A preliminary search in Google Scholar, Scopus, and Web of Science refined the search strategy by identifying patterns in terminology, keyword usage, and literature availability. Based on this scan and the research team’s expertise, a targeted keyword set was developed, including terms like “environmental justice,” “political ecology,” “recognition,” “pollution,” and relevant country names. Pilot searches informed the decision to focus on academic works that primarily use “environmental justice” as the thematic keyword and systematically review both author-supplied and automatically assigned keywords.

A search string was devised and executed in both databases, employing Boolean operators and integrating both author-assigned and database-generated keywords.³ The strategy ensured broad coverage while maintaining thematic and geographic relevance. Only publications in English were included due to translation constraints. The search covered literature published up to the end of December 2024. This restriction reflects both the linguistic competencies of the research team and the predominance of English in the EJ theoretical discourse. Duplicate records across databases were identified and removed using manual inspection and spreadsheet tools that highlighted matching titles and authors. The total number of possibly relevant papers that we identified at this point was 294.

This initial first batch of papers was consequently screened, and a selection was made in accordance with the methodology advanced by Polanin et al. (2019). First, titles and abstracts were evaluated separately by two members of the team against inclusion criteria. Second, full-text assessments were conducted for those studies deemed potentially relevant. Screening criteria were adapted from existing SLR methodologies and informed by scholarly guidance.

At the end of this process, 109 items were finally selected. Of these, three could not be fully accessed through our university's subscriptions to various academic databases, and were therefore eliminated from the analysis, only 106 studies being considered for the final analysis.

Beside the rich data provided by the scholarly databases (which includes among others: the authors affiliations or the funding organization), our team has also devised a coding scheme to capture other relevant dimensions for our study, namely country(ies), settlement type (urban/rural), theoretical framework, employed methodologies and methods, conflict type and the affected ethnic minorities (when present).

The typology of ecological conflicts employed in labelling those mentioned in the literature was borrowed from the EJ Atlas, which provides definitions for all major types of environmental conflicts.⁴ The distinction between rural and urban areas was based on a close reading of each article included in our sample. Specifically, we relied on the classification and contextual descriptions provided by the original authors. Regarding the theoretical frameworks adopted in the papers we analysed, particular attention was given to how studies conceptualized and addressed different dimensions of environmental justice, as outlined in the previous section. Finally, despite the perception of Eastern Europe as ethnically and religiously homogeneous (e.g. Poland), we argue that many countries in the area (e.g. Romania, Hungary, and Slovakia) exhibit substantial ethnic diversity. While the Roma minority is the most prominent, other minorities, such as Hungarians, are also present throughout the region. Moreover, the influx of labour and asylum seekers has even transformed countries like Poland into quite heterogeneous societies. These arguments, along with the already mentioned focus of EJ scholarship on race issues, justifies the inclusion of ethnic minorities in our coding scheme.

Before discussing our results, we acknowledge potential biases and limitations. Restricting searches to Scopus and Web of Science may have excluded regional or specialized databases, but the team's expertise suggests minimal omissions. Limiting the scope to English-language publications introduces language bias, potentially excluding relevant research in local languages. However, the novelty of the topic and the review's focus on theoretical frameworks align English language and major scientific databases with the established and emerging discourse. Choosing "environmental justice" as the primary keyword ensured conceptual clarity and alignment, though it may have excluded studies using different terminology. Subjective judgement during selection may have influenced inclusion decisions. Given the limited number of studies available for some countries, national-level patterns may reflect the research priorities of particularly active scholars or institutions rather than the full diversity of environmental justice issues present in those contexts. Furthermore, there exists a disparity between the media's reporting on environmental justice conflicts and the academic research on the subject. This discrepancy was anticipated. As the EJ Atlas methodology demonstrates (Temper et al. 2018, 577), cases are included in the atlas based on their media coverage (in addition to activist reporting and the scale of projects). Academics often lag behind in addressing these issues. Lastly, three eligible studies were inaccessible through institutional subscriptions.

Results

In this section, we present the results of our systematic review by focusing on the two dimensions of research that we detailed in the introduction, namely knowledge production and the methodological and conceptual approaches to EJ in EE.

As can be seen from [Figure 1](#), academic interest regarding EJ in EE is fairly recent and only picks pace around 2010, a period that marked the EU accession for many of the countries we included in our analysis.

A significant percent of the funding of the scholarship regarding EJ in EE actually comes from the EU. Forty-nine articles in our sample (approx. 46%) have declared receiving funding, with the EU featuring as the funding organism for 17 of those studies (16% of the total articles; approx. 35% of those funded). And while some national agencies in EE seem to be fairly interested in funding EJ research (such as the National Science Centre in Poland, which ranks second in our evaluation, after the EU), it is important to note that most of the funding for the studies included in our SLR comes from sources outside the EE (EU included). In our sample, 27 of the 49 funded articles are partially or entirely financed by organizations not based in EE, such as The Swedish Research Council for Environment, Research Council of Norway, German Aeronautics and Space Research Centre, Swedish Environmental Protection Agency, among the most frequent.

There is therefore a high-level of dependency, understood as reliance on funding for academic research regarding EJ, between countries in EE and other more affluent economies of the West or the Global North. And although 62% of the declared author affiliations in our dataset are with EE research institutions,⁵ the research output is highly dependent on funding from the EU and other funding agencies that are not local or regional. Moreover, EJ research in EE is dependent on western brain power as well. Of the 27 studies funded by organizations outside EE, 13 were

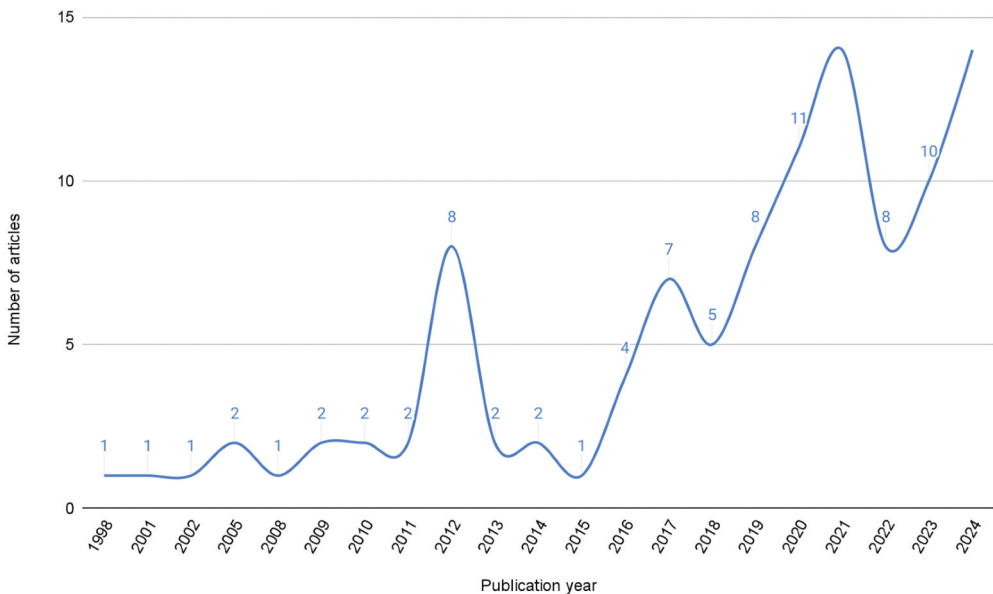


Figure 1. Chronological distribution of EJ in EE studies.

produced by mixed teams of researchers (EE and non-EE), 10 were authored by non-EE researchers, while only 4 were produced by authors or research teams affiliated exclusively with EE institutions. Therefore, in terms of EJ research, we would argue that the dependency of researchers in EE on western resources is not only financial but also academic in the terms advanced by Alatas (2003). We should however also mention that, especially after 2020, some interest in funding EJ studies has clearly been shown by research and innovation national ministries in countries such as Hungary ($n = 7$) and Romania ($n = 3$).

Another research question that prompted this study is: who are the main actors in the knowledge production concerning EJ in EE? As we have already seen, most studies in our dataset are written by authors affiliated with EE research institutions. However, a detailed look at the data shows great imbalances in this production. Host institutions from Poland, Hungary and the Czech Republic are very well represented, amassing 18%, 15% and 10% of the published studies respectively, while other countries in the area like Romania (5,26%), Bulgaria (1,5%) or Serbia (1,5%) are less present (see Figure 2). There is indeed a certain discrepancy between the amount of the EJ scholarship produced in these countries and the number of conflicts reported for the same countries by the EJ Atlas (see Table 1). For instance, although Bulgaria and Croatia are listed in the EJ Atlas with more than 20 conflicts each, in our data they receive far less research and fewer affiliations than the Czech Republic, for which the same resource indicates only three documented conflicts. Similarly, although Hungary and Slovenia are listed with almost the same number of conflicts in the EJ Atlas (12 and 11, respectively), the EJ research landscapes are markedly different. This signals the fact that researchers in EE countries that rank low in our affiliation count do not get that many research opportunities or resources to academically investigate the conflicts in their own countries. Moreover, affiliations from the United States (6.39%), the United Kingdom (6.39%) and Germany (6.02%) rank higher

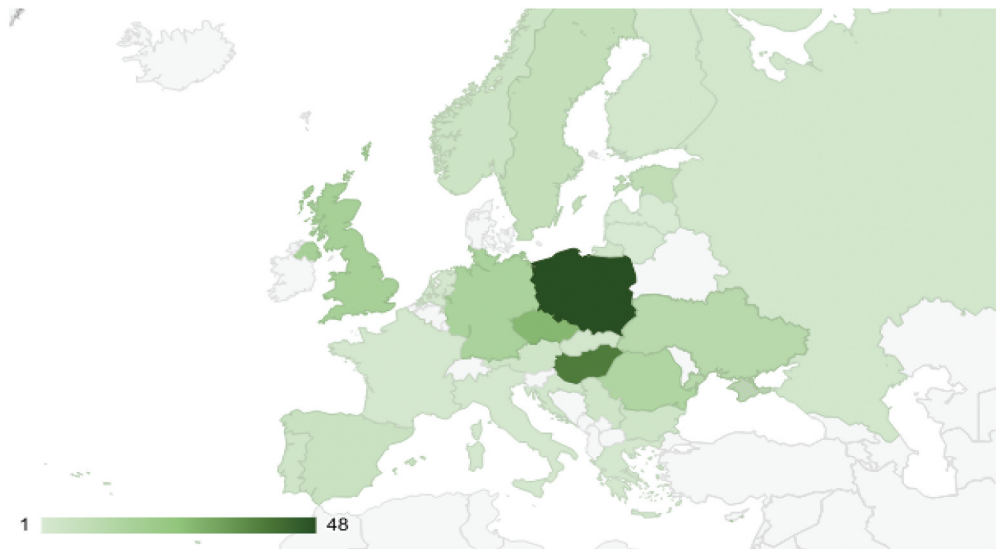


Figure 2. Geographical distribution of scholarly affiliations in Europe.

Table 1. Authors' affiliations and academically explored post-socialist countries vs. EJ conflicts reported in the EJ Atlas.

Country Name	Affiliations (SLR)	Studies (SLR)	EJ Atlas Conflicts
Albania	0	0	5
Belarus	0	1	1
Bosnia and Herzegovina	0	3	12
Bulgaria	4	9	25
Croatia	3	3	22
Czech Republic	27	16	3
Estonia	9	4	4
Hungary	39	13	12
Kosovo	0	0	3
Latvia	1	5	2
Lithuania	1	2	2
Moldova	0	0	0
Montenegro	0	1	14
North Macedonia	0	2	9
Poland	48	26	38
Romania	14	13	15
Russian Federation	3	3	77
Serbia	4	5	30
Slovakia	3	2	9
Slovenia	0	2	11
Ukraine	12	4	7

than the affiliations from all the countries in EE apart from Poland, Hungary and the Czech Republic.

As for the individual poles of knowledge production, the situation is not that different from that observed at the country level. The University of Łódź, in Poland, tops the chart with 20 studies on the matter, two universities in Hungary (The University of Szeged and Central European University, the latter being funded by non-European private funds) follow in the third and fourth places. But second in our rankings are the studies published by researchers affiliated with one of the many research institutions gathered under the same umbrella by the Helmholtz Association of German Research Centres. This once again states the importance of non-EE scholarly institutions in funding EJ research in EE.

We now turn to the actual content of the studies under review here, focusing on the manner in which EJ conflicts in EE are probed, framed and studied. In terms of the methodologies employed, most studies in our selection adopted a qualitative research approach (49%, $n = 52$), followed by quantitative (39,62%, $n = 42$) and mixed methods approaches (11,32%, $n = 11$). As for data collection, secondary data seems to be the most popular source, almost a third of the studies in our batch (31.13%, $n = 33$) relying on it to derive their conclusions. In some cases, this is another indicator of the underfunding of EJ research, as conducting interviews (14,15%, $n = 15$) or surveys (9,43%, $n = 10$) is more expensive and generally requires more personnel than relying on secondary data.

Previously, we outlined the affiliations of the authors whose studies were included in our selection and extracted some country-level statistics. However, an author's institutional affiliation does not necessarily indicate that their work focuses on the country in which they are employed. Accordingly, we also mapped the countries examined in the 106 reviewed studies.⁶ Again, environmental conflicts taking place in Poland seem to be the better explored ones in EE in terms of EJ scholarship, being referenced in 26 studies,

followed by the Czech Republic, Hungary, Romania and Bulgaria (see Table 1). Comparing our data with that reported in the EJ Atlas provides a clearer picture of the extent to which EJ conflicts are addressed in individual countries within the region. What is immediately noticeable is that, with the exception of the already mentioned countries, most EJ conflicts in the post-socialist countries in the area are understudied.

Another interesting fact that is worth mentioning at this point is that many studies maintain a geographical focus that exceeds the region under review here. Quite a few studies draw parallels with other European countries (like Italy, Greece, UK, etc.) and even with countries far away from Eastern Europe (like Vietnam, New Zealand, Sierra Leone, Iceland or the United States). These are not just mentions, but cases explored in some depth, even if they are not in the stated objectives of these studies. Nevertheless, many papers make explicit comparisons between the region studied here and other case studies world-wide, which show that EJ in post-socialist Europe is rather well-connected to the global academic conversation on the matter (see Herman and Drozda 2021; Kaufmann et al. 2021; Krause et al. 2022; Lawrence et al. 2021; Paloniemi et al. 2015; Richardson et al. 2013; Silva et al. 2018; Syrbe et al. 2021).

Another issue of interest that prompted this study was: what are the types of conflicts that are generally studied by EJ scholars in post-socialist Eastern Europe? To answer the question, we employed the typology devised by the authors of the EJ Atlas (Temper, Del Bene, and Martinez-Alier 2015), who advanced 10 such categories which cover most, if not all, the situations at the global scale.⁷ When compared with the EJ Atlas data, the situation presents itself as in Figure 3. What is immediately noticeable is the disproportionate academic interest in studying *Infrastructure and built environment* conflicts in EE, compared to other conflicts, for which interest is generally below the percentages reported in the EJ Atlas. The small percentage of studies

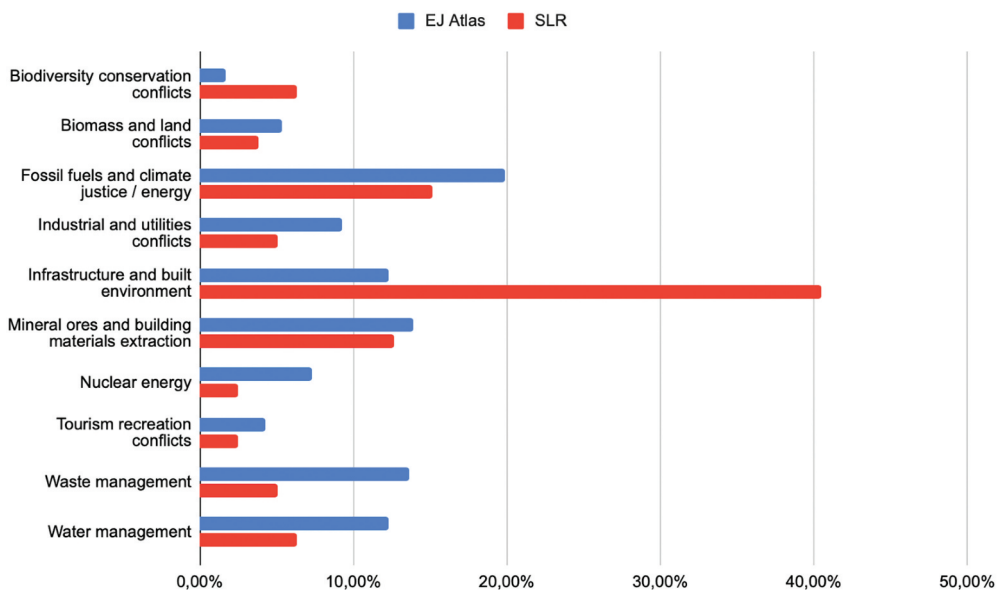


Figure 3. The distribution of the studies in our dataset by conflict type (EJ Atlas typology) and comparison with EJ Atlas data.

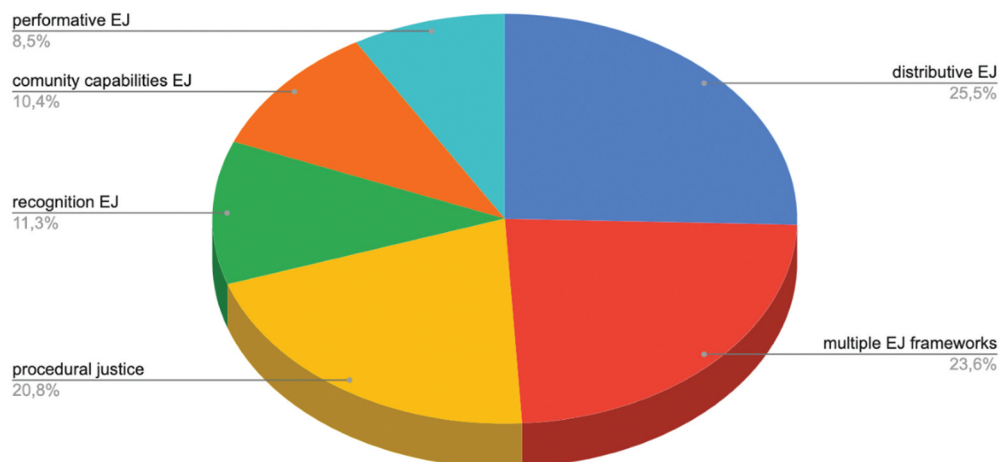


Figure 4. EJ theoretical frameworks: author stated and coder assigned.

investigating waste and water management conflicts is also striking, given the popularity of such topics in EJ scholarship generally and their frequent association with Eastern Europe, particularly regarding the conflicts involving the Roma (Filčák 2012; Steger and Filčák 2008; Steger, Filčák, and Harper 2018).

The popularity of *Infrastructure and built environment* conflicts in Eastern European EJ scholarship can be partially explained by a significant quantity of studies (a little more than 15%), mainly coming from Poland, that frame the access to urban green spaces as an issue of environmental justice. The academic preference for urban case studies is further demonstrated by the fact that most papers in our dataset (46%) investigate conflicts from urban areas (with rural areas taking 18%, while the rest is taken by country/regional-level analyses). Conversely, the data from the EJ Atlas mainly stems from rural areas (51.50%), which points towards the fact that EJ conflicts in the countryside are scholarly underexplored.

Another tenet of EJ scholarship in EE concerns, as we shall see, the disproportionate burden that environmental conflicts place on the shoulders of the region's multiple ethnic minority communities, particularly the Roma. With this in mind, we assessed how many of the studies in our selection deal with minorities and noticed that most (76,42%) do not in fact investigate conflicts where ethnic minorities are involved. The Roma are featured in 18,87% of the studies in our batch, while almost 5% discuss other minorities.

Finally, another aim of this study was outlining the theoretical directions that the studies in our review adopted, either explicitly or in a more indirect way. The results are shown in Figure 4. It is important to highlight that, while the majority of the authors considered in this discussion employ the term "environmental justice," the theoretical orientation of many studies is not explicitly articulated, but it was nonetheless possible to infer and code it accordingly. As can be seen, the more traditional/liberal definitions (*distributive* and *procedural*) still dominate the debate, while recent, more critical understandings of EJ (*recognition*, *community capabilities* and *performative*) are still in the minority, while almost a quarter of studies in our sample engage with multiple theoretical frameworks when discussing EJ.

Navigating academic dependency and deepening epistemic marginality: EJ scholarship in Eastern Europe

Our main findings demonstrate that EJ research in EE has only really taken off with EU ascension in the area, that funding is mainly dependent on the EU (but also on other agencies external to EE countries), and that there is a significant level of “academic dependency” (Alatas 2003) of the EJ scholarship in EE on western funds and expertise. In terms of the actual EJ research, we found that there is a discrepancy between the conflicts reported on the ground in the EJ Atlas and the level of scholarly interest awarded to them, with some countries being overrepresented, while others are underrepresented or not represented at all, when contrasting with the data presented in the EJ Atlas. Also, in terms of the interest shown towards the various aspects of EJ research (types of conflicts studied, ethnic minorities involved, the urban/rural divide, theoretic perspectives adopted), we observed again that there are discrepancies between the situation on the ground and academic research, but also between the stated research agenda and actual research in EE.

Our data show that only in the past decade can one truly say that EJ is being addressed in EE research. This comes quite late in the global discussion on the matter, which can be traced back to the US in the early 1990s. Interestingly, what appears to trigger the consolidation of EJ scholarship in EE is realities similar to those that prompted early U.S. EJ debates (Bullard 1990), namely racialized and ethnic inequalities. Steger and Filčák (2008) argued that the Roma minority was at the centre of emerging debates on EJ in EE and that the degradation of the living conditions of this ethnic group after the collapse of socialism in EE prompted growing scholarly interest in environmental justice. However, our results indicate that the academic interest in environmental conflicts that impact minorities in Eastern Europe is not adequately represented, even though Roma are well-represented in the EJ Atlas in our area of study.

Steger and Filčák (2008) also point towards the eastern expansion of the EU, which has come with certain obligations on the part of the new Member States to enforce environmental protection and reduce the level of environmental hazards to which their citizens were exposed. Before EU accession, EJ research did not receive the “moral, political and financial support,” as Varga, Kiss, and Ember (2002) noted in the early 2000s, while advancing the much of same arguments as Steger and Filčák (2008) for the urgency of the study of EJ in EE (post-socialist deindustrialization, ethnic minorities being disproportionately affected, etc.). Nevertheless, it is important to stress that environmental mobilization in the region predates the emergence of EJ as an analytical framework, including state socialist environmental debates in the 1970s and 1980s (Ault 2021). One such prominent environmental movement in late socialist Central and Eastern Europe concerned the planned Gabčíkovo – Nagymaros hydroelectric power plant on the Danube in the late 1980s, which catalysed cross-border environmental activism and public opposition (Deets 2009). However, these earlier approaches differ from contemporary EJ perspectives.

Our results point to the fact that most of the EJ conflicts that were mapped by the EJ Atlas are academically understudied. This could be partially explained by the aforementioned lack of funding, especially for those countries which are not part of the EU (like Serbia or Montenegro, with Ukraine as the exception). However, this does not explain why

EU member states like Slovenia and Slovakia are less involved than their immediate neighbours in researching local EJ conflicts. The low interest in studying EJ in other post-socialist countries like Belarus and the Russian Federation might also be linked to the authoritarian regimes there, which generally operate with other definitions of justice than the ones regularly adopted in EJ scholarly literature.

In terms of the theoretical scope of the studies we reviewed, we observed that, while critical approaches to EJ are notably represented, traditional perspectives continue to dominate the academic discourse. Regarding the empirical dimension, our results show that most countries in the area remain academically underexplored, when we compare the number of conflicts reported on the ground by the EJ Atlas, which is by no means exhaustive, with the number of academic studies addressing conflicts in the same countries. The uneven attention drawn by certain types of conflicts is also evidenced, with those unfolding in urban areas being overrepresented. Here, the shift of attention from rural conflicts to those taking place in an urban setting observed by Pellow (2016) is therefore confirmed. Nevertheless, when compared with the data collected in the EJ Atlas, this attention proves to be disproportionate, reinforcing the continuous invisibility of rural communities, whose environmental struggles remain absent from dominant academic narratives. The same can be also said about the ethnic communities in the area (especially the Roma) which, despite being generally invoked in the discussion on EJ in EE, are in fact less present in the actual research. Therefore, we identified an epistemic marginalization of vulnerable communities such as those in the rural areas and the Roma, and generally of grassroots' perspectives of environmental justice in EE. On the other hand, our SLR shows that there is a tendency of integrating EE case studies in the larger global discussion about EJ, mainly through comparative research.

One important feature of our approach is the use of broad categories and that the more specific dimensions of these categories do not always feature in our graphs, because they are absent from the actual academic literature. This is in fact one of our main findings. An example is the broad category of discrimination, central to the concept of EJ, that features generally in the academic literature, but rarely so in its more specific markers of race, ethnicity, class, gender, age, nationality, etc. While our starting point was to map to what extent these more differential markers of discrimination feature in EJ literature in EE, we have noticed a lack of specificity that accounts for its absence also in our graphs. The gap we identified calls for further studies to focus on the specifics of the broad category of discrimination. The empirical cases mapped by the EJ Atlas could inform and inspire a future production of knowledge of EJ in EE to focus on more specified and often overlapping forms of discrimination (e.g. social, gender, ethnic, racial, age, etc).

Conclusion

In this article, we provide a systematic overview of the academic literature concerning EJ in post-socialist EE. To achieve this, we selected and analysed a sample of 106 relevant papers by employing the SLR methodology. There were two main dimensions to our study: one that explored the mechanisms of knowledge production and another that aimed to offer an assessment of the theoretical, geographical and typological scope of the scholarship concerning EJ in EE. Our findings indicate that post-socialist Eastern European scholarship on this topic is somewhat academically dependent on funding from the EU and other Western agencies, as well as on scholars from outside

the region. Internally, we show that the EE academic landscape is not uniform, with some countries benefitting from more EJ research than others, while some are completely ignored. When compared to such a resource as the EJ Atlas, the academic production in EE shows some interesting discrepancies with on the ground data. We observed that most of the studies in our selection are oriented towards urban case studies, even though most EJ conflicts in EE are reported in rural areas, and that ethnic minorities, although generally associated with EJ, are in fact less present in academic research. We therefore argue for the significance of placing the Roma at the centre of EJ studies in Eastern Europe. Our study also identifies a literature gap in this direction, which serves as an incentive for further research on Roma EJ experiences in Eastern Europe. Regarding the theoretical directions adopted by the reviewed studies, we observed that traditional perspectives regarding EJ are still prevalent in the academic discourse, although more critical approaches are not absent. On a more general note, we consider that the methodology employed here – namely the comparative analysis of EJ Atlas data with scholarly production – is replicable elsewhere and can contribute to a more inclusive and representative research agenda for EE, but also other regions of the world.

Notes

1. This study employs the EJ Atlas dataset, which was kindly provided to us by the maintainers of the database. Although very detailed and thoroughly collected, the maintainers do warn that the data they provide is not a complete inventory of environmental conflicts and is possibly subjected to inaccuracies and bias, while information regarding some cases might be outdated. The EJ Atlas is available online at: <https://ejatlas.org/>.
2. Given the time lapse between the initial search and the final stages of manuscript preparation, and considering the increasing volume of environmental justice scholarship in the region, a second search was conducted to capture publications indexed after the first screening phase, including articles published online-first in 2024 but indexed later in Scopus or Web of Science. The same search string, databases, inclusion and exclusion criteria, and screening protocol were applied in both phases to ensure methodological consistency and replicability.
3. The search string used in two databases is: “environmental *justice” AND (“Central Europe” OR “Eastern Europe” OR albania OR belarus OR “Bosnia and Herzegovina” OR bulgaria OR croatia OR “Czech Republic” OR estonia OR hungary OR kosovo OR latvia OR lithuania OR macedonia OR moldova OR montenegro OR poland OR romania OR russia OR serbia OR “Slovak Republic” OR slovenia OR ukraine).
4. These can be found at: <https://ejatlas.org/backoffice/cms/en/definitions/>
5. We counted all the affiliations of each author, some of them stating multiple affiliations.
6. Most papers in our dataset focus on one specific case study from one country or attempt to do comparative analyses across several countries. However, in addition to these, we also included in our analysis those countries that were mentioned and explored in some depth, to get a measure of how well integrated are the countries in EE in the global discussion about EJ.
7. Additionally, to cover the situations where the academic papers in our selection dealt with multiple EJ conflicts or simply with environmental justice in general, we have coded a specific generic category, “Multiple ecological conflicts.” 25,5% of the items in our dataset fall under this category and were therefore eliminated from the comparison drawn with the EJ Atlas data.

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Data availability statement

The data associated with this work can be accessed via this link: <https://grants.ulbsibiu.ro/ecojust/systematic-literature-review-ej-in-eastern-europe/>

Generative artificial intelligence (AI) statement

Parts of this manuscript were drafted with the assistance of several generative-AI tools (ChatGPT-5, ChatGPT-4o, Apple Intelligence on MacOS Sequoia 15.7). These tools were used only to improve clarity and the level of English. The authors reviewed and revised the output thoroughly to ensure accuracy, originality and integrity, and take full responsibility for the final content.

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