The EJAtlas: co-production of knowledge for engaged research to support environmental justice movements, education, and policy-making

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Introduction

This chapter focuses on the world's largest database of environmental justice conflicts: the Environmental Justice Atlas (EJAtlas). As of November 2023, the EJAtlas has collected information on nearly 4,000 environmental conflicts around the world. The rationale for the creation of the EJAtlas was to document struggles over environmentally unjust socio-environmental activities and regulations, their actors, strategies, and outcomes, and to study the role of environmental justice groups and movements in transformations to sustainability and justice (Temper et al., 2018). The EJAtlas is therefore closely linked to political ecology approaches, in that it shows how political, social, and economic aspects account for the uneven distribution of costs and benefits in environmental conflicts; vice versa, it also illustrates how such unevenness has political implications and results in altered power relationships (Robbins, 2019). As we will show in the next sections, the current state of the EJAtlas is the result of trans-sectoral collaborations, notably between engaged researchers and social, on-the-ground movements.

The process for data collection itself is collaborative: data is gathered in database forms and is then revised and moderated before publication. It can be updated, should new knowledge emerge, and new sources can be added along the evolution of each conflict. As such, the EJAtlas is a dynamic database, whose extension is not only geographical but also diachronic: it is a map, a news feed source, and an archive at the same time. Its bottom-up background should be highlighted: in the words of its founders, Leah Temper and Joan Martínez-Alier - who co-directed the Atlas from 2011 to 2021 and managed it along with the Direction and Coordination Group, before a collegial Direction Group was established in 2022: "The EJAtlas may be considered a contemporary environmental history from below" (Temper et al., 2018: 576). Co-creation of knowledge and the consideration of an "ecology of diverse knowledges" (Santos, 2014) have been fundamental aspects of the EJAtlas (Temper and Del Bene, 2016), whose strength comes, amongst other things, precisely from the pluriversal viewpoint(s) expressed in its narratives (Demaria et al., 2023).

The path leading to the Atlas's current state has been the object of several publications: Temper et al. (2015), Martínez-Alier (2016, 2021, 2023), Temper and Del Bene (2016), and Del Bene and Ávila (2023) describe in detail how the project was conceived and co-designed, and how it evolved and changed; and assess its outcomes and contribution for activism, advocacy and scientific knowledge. Therefore, the EJAtlas's chronology is not analyzed in this chapter. Suffice it to say here that through its more than decade-long history – it was created in 2012 – the EJAtlas has not only offered a systematic evidence-based inquiry into the politics, power relations, and socio-metabolic processes surrounding environmental justice struggles locally and globally. It has also fostered cross-collaboration and alliances between social movements from different areas of the world; it has been a precious source of materials for scholar activism and has been mobilized in education and policy-making actions and campaigns. It is to all these aspects that we now turn to, starting from one of the most widely used tools of the EJAtlas: featured maps.

Featured maps

Featured maps, a visual approach to translate data into a visual representation, are among the EJAtlas' tools for data analysis: they help cluster conflicts by country, commodity, or other criteria. These maps were made possible by the availability of spatial information and software (such as GIS), which provided new tools for analyzing and establishing the legitimacy of claims (Elwood and Leszczynski, 2013). As of December 2023, the EJAtlas includes 19 featured maps[1]: these assist in explaining the interlinkages among several cases, thus providing linking narratives. Explanatory texts are produced along with the maps to provide an overview of their contents. Featured maps have often served as an asset for communities and NGOs (e.g., Walter, et al., 2023); they have been used as a tool to identify alliances, emphasize common patterns of influence among countries, and pinpoint geo-spatial dynamics of specific classes of conflicts.

Examples include maps of conflicts that look at specific corporations, such as the Brazilian Vale (Saes et al., 2021). These maps draw attention to the repeated transgressions committed by companies in different locations, and to the environmental and social impacts caused by company operations (Scheidel et al., 2023). They also highlight companies' use of violence to repress people's claims and the legal impunity they frequently enjoy. The EJAtlas also features studies on industrial activities typically framed as 'green' (Cook et al., 2012), such as eco-modernist solutions based on renewable energy or REDD+ (Reducing emissions from deforestation and forest degradation). The *Mining Impacts and Conflicts of the Energy Transition in the Americas Map* (Deniau et al., 2021) and the *Rare Earth Elements Impacts and Conflicts Map* (Walter et al., 2023) both highlight social and environmental inequalities originating from mining supply chains. The *Conservation Conflicts inside India's Protected Areas Map* (Fanari, 2022) highlights how policies designed to mitigate the harm caused by extractivism endanger the livelihood of the inhabitants of conservation priority areas. Other maps focus on different aspects of environmental injustice: for example, the *Global Waste*

[1] https://ejatlas.org/featured

Pickers Map shows how new waste management policies undermine the informal recycling sector in the Global South (Schindler and Demaria, 2019).

Most of these maps were created through a collaborative process that involved local communities, partner organizations, and international institutes. Such collaboration strengthened mutual understanding and fostered the EJAtlas's networking efforts. Frequently, the inspiration for a map originated from the need to promote a cause on a national and/or worldwide scale. On these occasions, the EJAtlas team has mostly been assisting the organization partners throughout the entire map-making process. In other instances, the maps represent academic attempts to analyze a particular issue more thoroughly and present it on a global scale. In either case, the maps are a result of multi-actor collaboration: such collaboration has often resulted in the establishment of networks and alliances, as we explain in the next section.

Weaving networks of resistance

Political allyship brings power to movements through the organization of larger networks that mobilize more people in diverse contexts and influence processes at a global scale (Roberts, 2007). Coalitions bridging Global North with Global South resistances have a specific transformational potential that reframes political ecology debates. Through North-South coalitions, frontline activists have a platform to voice their demands for dignified livelihoods threatened by an intensification of extraction in Western consumer societies. North-South alliances also offer frontline communities the opportunity of holding to account the corporations threatening their way of life in their home jurisdiction (Faber, 2005).

Global environmental justice (EJ) coalitions are created based on common political threats or demands. These can have a material root, with global networks coalescing around commodities like water, gold, liquefied natural gas, or specific activities such as fracking, or tourism intensification. They can have institutional links with movements united to struggle against a corporation, an international treaty, or a multilateral institution (Faber, 2005); or they can be united by a common political philosophy and ideal, such as those discussed in the fields of post-development, degrowth, Indigenous autonomy or eco-anarchism. Since the EJAtlas collects information both on mobilized groups and on their websites, EJ activists can identify politically aligned groups globally to weave alliances and further their cause.

A case in point is the network of EJ movements against lithium mining: these movements signed the Jadar declaration, which the EJAtlas has endorsed (Todorović, 2022). The network appeared in response to the global intensification of lithium mining due to the demand for more lithium-containing batteries in the electrification of the economy. Another example is the Fossil Free Careers campaign by People and Planet in the UK (https://peopleandplanet.org/fossil-free-careers/targets). Together with the London Mining Network, the EJAtlas was used to identify the companies involved in environmental conflicts related to mining of critical minerals for energy transition. These companies were included in

a black list that UK-based students demanded their universities to ban from recruitment events on their campuses.

The previous section detailed how EJAtlas featured maps are used by EJ organizations. A particularly relevant use of these maps is to actively support the creation of networks. One example is the map on the resistance to airport construction and expansion that the Stay Grounded network leads (https://ejatlas.org/featured/airport-conflict-around-the-world). Through the documentation of airport conflicts, the network identifies local organizations sharing a global cause to reduce aviation and its impacts. The featured maps also serve to denounce the impacts of the industry, and highlight the strategies and tactics used by local movements to stop projects, which can inspire similar action elsewhere. Not only has the Atlas helped weave networks of resistance; but it has also supported much research conducted within the paradigm of scholar activism, as we now show.

Scholar activism and engaged political ecology research

Borras and Franco (2023: 7) define scholar activism as the pursuit of "academic work that aspires to interpret the world and to change it into something better, kinder, and more just, and where the scholar-activist unapologetically aligns with particular social movements and/or political projects". Three central characteristics of the EJAtlas make it particularly relevant for scholar activists.

First, the EJAtlas draws on the idea of knowledge co-production between academics and activists, which is reflected in both the platform development and the case data collection (Temper et al., 2015; Temper and Del Bene, 2016). Knowledge co-production supports the collection of situated evidence of conflict dynamics from the perspective of affected actors and produces knowledges (in the plural) favoring disadvantaged groups in their struggles to diminish injustices (Conde, 2014; Hunsberger et al., 2017). EJAtlas-based research may enable scholar activists to support epistemic justice by bringing to the fore a narrative on development from the perspective of affected communities.

Second, EJAtlas' global scope and the multi-thematic approach enables to understand specific environmental conflicts within a larger regional and sectoral perspective, showing that many injustices caused by specific projects are not simply isolated, singular cases of "bad project management", which would imply such injustices could be addressed by better project governance and safeguards. The frequency and consistency of patterns of environmental injustices, rights violations, and livelihood impacts observed in the EJAtlas across different sectors indicate that these are rather systematic features of the global industrial way of life and of how the world economy functions (Scheidel et al., 2023).

Third, the EJAtlas allows academics and activists alike to harness the political power of quantitative data to influence environmental policy and governance toward more just outcomes. While historically, quantitative approaches tended to have more significant impacts in policy circles (Porter, 1995), they have recently received some interest in Political Ecology too (Scheidel et al., 2020). Hesitations to use quantitative data in Political Ecology

can be explained partly due to the colonial history of statistics (e.g., Hayward et al., 2021), as well as because of epistemological frictions with positivist research traditions in which quantitative environmental sciences have emerged (Zimmerer, 2015). Aware of these potential pitfalls and frictions, the EJAtlas project has learned much from activist projects that systematized information on environmental injustices caused by extractive industries based on local knowledge sources (such as the OCMAL initiative - *https://www.ocmal.org/*). The EJAtlas aims to present powerful yet rigorous quantitative data to interpret the world and seek more just futures based on local activist and academic knowledge.

Concrete examples of EJAtlas research aligning with some of the ideas of scholar activism are for example academic studies that informed and accompanied featured maps used in advocacy and activism (e.g. Fanari, 2021; Saes et al., 2021); or quantitative studies addressing diverse injustices globally, such as the social-environmental impacts of large dams (Del Bene et al., 2018); consequences of the exploitation of new extractivist frontiers such as the Arctic (Hanaček et al., 2022); violence and murder committed against women environmental defenders (Tran and Hanaček, 2023); or Indigenous rights violations caused by extractive industries (Scheidel et al., 2023). Besides its mobilization in terms of scholarly activism, the EJAtlas has also been used as an educational tool, as the next paragraph explains.

Impact on education

According to a survey of EJAtlas users (600 responses), over 37% of respondents report using the Atlas for teaching and presentations, which represents the most common use of the Atlas by occasional users. We have documented the use of the Atlas in the context of undergraduate and graduate courses in a wide range of countries in all continents bar Antarctica. The platform is used in courses related to the environmental social sciences, sustainability, ethics, human rights, political economy, and public administration (Walter et al., 2020).

Educators report that the EJAtlas provides a large and diverse database of detailed environmental conflicts; teachers can then choose cases or create tailored maps to explain concepts and illustrate ongoing trends, and/or build practical exercises to guide students in the exploration and comparison of struggles at national and international levels, as well as with diverse thematic foci (e.g., mining, land-grabbing, oil, plantations, etc.). The task of adding/updating an EJAtlas case was also given in different courses. This assignment is labor-intensive for teachers, students, and the EJAtlas moderation team alike; however, it motivates students that feel that their classwork published online with their name as the author has a real-world impact and contributes to making a struggle visible (Walter et al., 2020).

Examining their teaching experience in China, Scheidel et al. (2018: 5) notice that:

> [The EJAtlas] proved to be a useful teaching tool to provide concrete empirical cases, on the basis of which theoretical concepts of political ecology and political economy

> were discussed. […] [S]tudents became aware of the connections between society's use of matter and energy and the often unequal distribution of environmental benefits and burdens among different actors and scales. Thanks to the EJAtlas, they were also able to see that some environmental problems […] are a systemic characteristic of places on the planet where resource extraction and processing are intensive.

However, their experience also suggests that the deep examination of concepts and real cases of environmental injustice can also generate feelings of despair. In this vein, they point to the need to counterbalance the examination of the negative trends and sad stories with the positive processes of social mobilization and the transformations these produce.

The EJAtlas has not only the potential to raise awareness on environmental sustainability among students but also to address key concerns regarding the demotivating 'remoteness' students might feel for geographically distant issues and activism, and the limited range of perspectives found in course material (particularly those from the frontline of environmental injustices and resistance movements). The EJAtlas offers a platform that students and educators can use to help bridge these gaps by providing a way for students to tangibly engage with important environmental resistance movements, improve the visibility of diverse, frontline voices and experiences, and connect theoretical to practical aspects via a range of opportunities for promoting EJ work outside of the classroom including advocacy, documentation, networking, and solidarity-building (Walter et al., 2020).

Impact on policies

The use of the EJAtlas has also stretched beyond academia and the education sector, engaging multiple actors and institutions with the database and its methodology. The EU Joint Research Centre, for example, included information on conflicts around bauxite mining in its report on sustainability in the aluminum industry (Georgitzikis et al., 2021). The EJAtlas was an important source to track impacts that are usually excluded from other sustainability reports or corporate impact assessments, and to include (excessively lenient, in our opinion) recommendations to "ensure responsible sourcing of materials in the process of EU decarbonisation" (p. 91). In South America, researchers at the United Nations Economic Commission for Latin America and the Caribbean (CEPAL) used the EJAtlas database to draw regional trends of the copper mining sector and its related local impacts, aiming to improve local participation and governance (Poveda Bonill, 2021).

In Central America, the CEPAL-led State of the Nation Program in Sustainable Human Development has also used EJAtlas data for a report on sustainability issues in the country (PEN, 2021). The outcome of EJAtlas global database analysis, and the results of a 2020 study on violence against environmental defenders in particular (Scheidel et al., 2020), have also proved to be influential information for lobbying legislative officers. For example, in the Philippines the online event *Global Insights in Defending Environmental Defenders*, organized by the Kalikasan People's Network for the Environment and the Centre for Environmental Concerns presented the results of that study to the Congress and Senate, as well as to representatives of executive agencies and civil society groups, to promote policy

reforms intended to recognise, support, and defend environmental activists. That also included promoting an environmental defense bill. The EJAtlas was also used as the starting dataset to identify key case studies - on large dams and mining, in particular - to be included in the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services' Values Assessment report (IPBES, 2022; Lele et al., 2023).

Most recently, at a side event of the European Commission-organized Raw Materials Week, held in Brussels in November 2023, the Debt Observatory in Globalization (ODG), the EJAtlas, the Institute for Policy Studies (US), and CRAAD-OI (Madagascar) presented a featured map documenting 28 socio-environmental conflicts related to the supply chain of rare earth elements. This collaborative mapping effort aimed to show the environmental, social, and human rights injustices and abuses that are taking place along the chain, and how local communities are resisting. The map was disseminated to the event participants and to the Raw Materials Coalition, a network of organizations struggling against the accelerated expansion of extractive frontiers in the name of the transition to less carbon-intensive technologies (see Walter et al., 2023).

Conclusion

As we have shown in this chapter, the EJAtlas has been an extremely versatile tool. In its ten years of life, not only has it contributed to advance research on environmental justice; but it has also been mobilized by diverse non-academic sectors. Its role in weaving networks of alliances, linking commodity struggles across countries and continents, strengthening engaged research and environmental justice activism, as well as its use in education and policy-making is making it a powerful and empowering instrument. Moreover, the co-production of knowledge dynamics on which it has been based has allowed a constant dialogue between academics, activists, and practitioners, as well as global cross-fertilization of pluriverses. The EJAtlas has represented one of the most impactful materializations of political ecology theorization, not only by constantly emphasizing the mutual influence of the environment and power relations, but especially through its function as a living archive of empirical materials to be mobilized both for practical aims–in environmental and ecological struggles—and in academic reflection, as witnessed by the numerous articles it has contributed to generate. The work is ongoing, and new opportunities and challenges are certainly to come.

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