

Global governance/politics, climate justice & agrarian/social justice: linkages and challenges

An international colloquium
4-5 February 2016

Colloquium Paper No. 16

Is there a Global Environmental Justice Movement?

Joan Martinez-Alier, Leah Temper, Daniela Del Bene, and Arnim Scheidel

International Institute of Social Studies (ISS)
Kortenaerkade 12, 2518AX
The Hague, The Netherlands

Organized jointly by:



ECOFAIR TRADE DIALOGUE

With funding assistance from:



Disclaimer: The views expressed here are solely those of the authors in their private capacity and do not in any way represent the views of organizers and funders of the colloquium.

February, 2016

Follow us on Twitter:

https://twitter.com/ICAS_Agrarian

<https://twitter.com/TNInstitute>

https://twitter.com/peasant_journal

Check regular updates via ICAS website: www.iss.nl/icas

Is there a Global Environmental Justice Movement?

Joan Martinez-Alier, Leah Temper, Daniela Del Bene, and Arnim Scheidel

Abstract¹

One of the causes of the increasing number of ecological distribution conflicts around the world is the changing metabolism of the economy in terms of growing flows of energy and materials. There are conflicts on resource extraction, transport, and waste disposal. Therefore, there are many local complaints, as shown in the Atlas of Environmental Justice (EJAtlas) and other inventories. And not only complaints, there are also many successful examples of stopping projects and developing alternatives, testifying to the existence of a rural and urban global movement for environmental justice. Moreover, since the 1980s and 1990s, this movement developed a set of concepts and campaign slogans to describe and intervene in such conflicts. They include environmental racism, popular epidemiology, the environmentalism of the poor and the indigenous, biopiracy, tree plantations are not forests, the ecological debt, climate justice, food sovereignty, land grabbing, water justice, among other concepts. These terms were born from socio-environmental activism but sometimes they have been taken up also by academic political ecologists and ecological economists who, on their part, have contributed other concepts to the global environmental justice movement, e.g. 'ecologically unequal exchange' or the 'ecological footprint'.

Keywords: Environmental justice, ecological distribution conflicts, collaborative research, activist knowledge, EJAtlas, environmental racism, environmentalism of the poor, climate justice, statistical political ecology

Acknowledgements

This work received funding from the EJOLT Project, Environmental Justice Organisations, Liabilities and Trade, an FP7 project supported by the European Commission, 2011-2015 [grant number 266642]; as well as by the Transformations Seed Grant [grant number T2S_PP_289] from the ISSC under the Transformations to Sustainability Programme [grant number TKN150317115354]. The Transformations to Sustainability Programme represents a contribution to Future Earth. We are very grateful to all partners in the EJOLT project and to the many outside collaborators with the EJAtlas. Also we thank Lucia Arguelles and Yakup Cetinkaya for their technical support, as well as the critical comments of two anonymous reviewers.

¹ This paper is forthcoming in the Journal of Peasant Studies. It will be soon available at: <http://dx.doi.org/10.1080/03066150.2016.1141198>

Introduction

The fundamental clash between the economy and the environment can be largely related to the changing social metabolism of industrial economies, understood as the appropriation, transformation and disposal of materials and energy by society (Fischer-Kowalski and Haberl 1997, 2007, 2015; Kraussman et al 2009; Steinberger et al. 2010; Muradian et al. 2012; Martinez-Alier et al. 2014). Energy cannot be recycled. Therefore, energy from fossil fuels and new supplies of coal, oil and gas must be obtained from constantly expanding 'commodity frontiers' (Moore 2000). Similarly, materials are recycled only in part, and therefore, even an economy that would not grow would need fresh supplies of iron ore, bauxite, copper, and paper pulp. The industrial economy is not circular; it is entropic (Haas et al. 2015). Meanwhile, renewable resources such as aquifers, timber, and fisheries are overexploited, the fertility of the soil is jeopardized and biodiversity is depleted. Thus, the changing social metabolism of industrial economies (including the excessive production of carbon dioxide) gives rise to increasing numbers of ecological distribution conflicts that sometimes overlap with other social conflicts related to class, ethnicity or indigenous identity, gender, caste and which may be further related to institutional configurations such as property regimes or territorial rights.

Ecological distribution conflicts' (Martinez-Alier 1995; Martinez-Alier and O'Connor 1996) is a term for environmental injustices employed in ecological economics. For instance, a factory may be polluting the river (which belongs to nobody or belongs to a community that manages the river – as studied by Ostrom (1990) and her school on management of the commons). Yet this damage is not valued in the market and those impacted are not compensated. The same happens with climate change, causing perhaps sea level rise in some Pacific islands or in Kuna islands in Panama. More than market failures (a terminology that implies that such externalities could be valued in money terms and internalized into the price system) these are 'cost-shifting successes' (Kapp 1950) which oftentimes lead to complaints from those bearing them. If such complaints were effective (which is not the rule), some activities could be banned, or, if we accept economic commensuration and reject incommensurability of values (Martinez-Alier et al. 1998), 'equivalent' eco-compensation mechanisms could be introduced. The economy would change accordingly.

Such ecological distribution conflicts were perceived in terms of persistent injustices towards 'people of color' in the United States, giving rise to a social movement in the 1980s when the words 'Environmental Justice' (EJ) began to be used in struggles against the disproportionate dumping of toxic waste in urban or periurban African-American areas. EJ is a powerful lens through which to make sense of many struggles over the negative impacts that changing social metabolism imposes on human livelihoods and nature conservation worldwide (Gottlieb 2009). As early as 1991, at the Washington DC People of Color Environmental Leadership Summit ties were forged so as 'to begin to build a national and international movement of all peoples of color to fight the destruction and taking of our lands and communities.'

Another concept related to EJ is the 'environmentalism of the poor' (applied to rural and indigenous populations in India and Latin America), introduced by academics and activists in the late 1980s (Anil Agarwal and Sunita Narain of the CSE in India, Hugo Blanco (1991) in Peru). Since the mid-1990s the explicit connection between the EJ movement in the United States and the environmentalism of the poor in Latin America, Africa, and Asia, was established (Martinez-Alier 1997; Guha and Martinez-Alier 1997, 1999; Varga et al. 2002) and further cemented following the deaths of Chico Mendes in 1988 fighting deforestation in Brazil and of Ken Saro-Wiwa and his Ogoni comrades in the Niger Delta in 1995 fighting against oil extraction and gas flaring by Shell. This 'environmentalism of the poor' increasingly manifests as an 'environmentalism of the dispossessed' (Temper 2014), a term referring to a politicized environmentalism cognizant of the dialectic between expanded capitalist accumulation at a global scale and environmental dispossession, and often motivated not only by local material concerns but also at broader scales by opposition to dispossession of sovereignty and self-governing authority. Such types of resistance are not limited to the poor. In the mid-1990s classical books analyzing the reasons to oppose dams (McCully 1996) and tree plantations (Carrere and Lohmann 1996) and the movements organized against them were published, while Leonardo Boff's 'Cry of the Earth, Cry of the Poor' (1995) made the connections between poverty and environmental

complaints².

There are several types of ecological distribution conflicts that can be classified along the commodity chains. There are conflicts on resource extraction, transport, and waste disposal. Therefore, there are many local complaints as shown in the new Atlas of Environmental Justice (hereafter, EJAtlas, www.ejatlasing.org) and other inventories. Since the 1980s and 1990s the global environmental justice movement developed a set of concepts and campaign slogans to describe and intervene in such conflicts, such as environmental racism, popular epidemiology, the environmentalism of the poor and the indigenous, biopiracy, tree plantations are not forests, the ecological debt, climate justice, food sovereignty, land grabbing, water justice, and so on.

In this paper, preliminary results from the new EJAtlas will be presented in an exercise towards statistical political ecology (Kousis, 1998), in order to provide evidence of the vast number of mobilizations for environmental justice, as well as to identify lines of future research on environmental justice, available thanks to the growing EJAtlas database. The EJAtlas is an inventory so far of 1600 cases (October 2015) and it is also a good source not yet explored to discover the vocabulary of the environmental justice organizations (EJOs), their actions and their networks. Following this, we provide a long list of (often interrelated) terms deployed by the global EJ movement to be further enriched with regional terms. A final section draws conclusions. The paper relies therefore on two main bodies of evidence to answer in the affirmative the question in its title. First, the mapping and research of hundreds of environmental conflicts worldwide, opposing dispossessions and local pollution that share common characteristics and linkages between them. Second, the actions of networks of EJOs at national and global scale developing their own common terms and campaign slogans that are becoming common currency.

The Atlas of Environmental Justice: an overview

The EJAtlas maps ecological distribution conflicts relying on co-production of knowledge between academics and activists.³ Based on an 'ecology of diverse knowledges' (Sousa Santos 2007), it makes visible many environmental injustices and instances of resistance that would remain hidden otherwise. It follows in the steps of the EJ movement in the United States, which was from the start a movement relying on community-led science and participatory action (Bacon et al. 2013). Such forms of engagement recognize communities as producers of knowledge in their own right, rather than being merely objects of study (Casas-Cortés et al. 2008). The EJAtlas classifies conflicts by a 'commodity' approach, with the ability to filter across over 100 fields. It resembles an old world map – while some countries in different regions, such as Colombia, Spain or Madagascar, have been mapped, many remain still to be filled. Conflicts can be sorted or filtered by commodity, by company, by country, by forms of mobilization (from blockades to local referendums), by the social actors involved, by types of environmental, social, health and economic impacts, and by outcomes, referring to different events and processes associated with a conflict, as indicated in the EJAtlas data form.

The unit of analysis is a well documented project-based campaign or place-based struggle, which sometimes results in influential national protest-events or broader campaigns. These contestations are made visible through press reports and court cases, campaigning, petitions, meetings, demonstrations, boycotts, strikes, threats, civil disobedience, collective violence, and other action forms. For each conflict, two or three pages of detailed information are available, as reported by over 100+ collaborators at present, from Environmental Justice Organizations (EJOs) or academics and graduate students working on the ground or from secondary sources around that issue. A laborious moderation process, facilitated by ICTA/UAB assures quality and consistency of each entry before being published online (for more details see Temper et al. 2015). Conflicts are classified in the first instance

² Boff is a Brazilian 'Liberation theologian', whose work is fully vindicated in the encyclical *Laudato si* of 2015, which itself calls for environmental justice in many of its paragraphs.

³ A previous article drawing on the EJAtlas has been published by L. Temper, D. Del Bene and J. Martinez-Alier in the *Journal of Political Ecology*, where we focused on the methodology (Temper et al, 2015). The coverage and analysis of the EJAtlas will be expanded counting on the new 2015-18 project "Academic-Activist Co-Produced Knowledge for Environmental Justice" (funded by the ISSC Transformations for Sustainability programme), coordinated by Leah Temper (ICTA-UAB) and Ashish Kothari of Kalpavriksh (India).

in one out of ten categories (1st level), and all relevant 2nd level classifications can be added (see Table 1). For instance, a conflict born from a project for copper mining would be classified under mineral ores (1st level) although it also involves as 2nd level ‘land grabbing’ and has consequences on water and air pollution.

Table 1: Conflict classifications in the Atlas of Environmental Justice (EJAtlas)

<i>1st level categories (mutually exclusive)</i>	<i>2nd level classification (multiple selection across categories), some examples</i>
Nuclear energy	e.g., uranium extraction; nuclear power plants; nuclear waste storage
Mineral ores and building materials extraction	e.g., mineral extraction; mineral processing; tailings; building material extraction
Waste management	e.g., e-waste and other waste import zones; ship-breaking; waste privatization; waste-pickers; incinerators; landfills; uncontrolled dump sites; industrial; municipal waste
Biomass and land conflicts	e.g., land acquisition; tree plantations; logging; non-timber products; deforestation; agro-toxics; GMOs; agro-fuels; mangroves vs. shrimps; bio-piracy and bio-prospection; intensive food production (monoculture & livestock); fisheries
Fossil fuels and climate justice/ energy	e.g., oil and gas extraction; oil spills; gas flaring; coal extraction; climate change related conflicts (glaciers & small islands); REDD/CDM; windmills; gas fracking
Infrastructure and built environment	e.g., megaprojects, high speed trains, airports, urban development
Water management	e.g., dams, water transfers, aquifers, hydro-ways, desalination
Biodiversity conservation conflicts	e.g., invasive species, damage to nature, conservation conflicts
Industrial and utilities conflicts	e.g., factory emissions, industrial pollution
Tourism recreation conflicts	e.g., establishment of tourism facilities

In some countries, a participatory process has been undertaken amongst the EJ community and scholars to choose the most relevant cases. In the US a survey was administered to over 200 EJ leaders, activist groups and scholars by collaborators at the University of Michigan's School of Natural Resources and Environment to select the 60 most influential cases in recent American history. Entering of cases in the US will continue. A similar process for selection of cases was made for the Italian sub-platform. A group of researchers at ASUD-CDCA with experience in the field since 2007, led by Marianna Sori and Lucie Greyl, conducted an extensive survey across Italy with NGOs, committees, scholars, environmentalists, journalists, etc. They identified in this way the top 24 cases of conflict in the country to be included in the global map and later expanded the coverage to 80 cases which were presented in the national platform (www.ejolt.cdca.it), and which are not yet incorporated into EJAtlas. For some countries, we rely on academic inputs (as for China). The EJAtlas must be seen as an ‘incomplete inventory’ which however is steadily growing.

In the EJAtlas we draw on ‘activist knowledge’ (Escobar 2008). Some networks (OCMAL, Oilwatch, the WRM) had been inventorying and mapping environmental conflicts, and this was a source of inspiration for the EJAtlas that now documents the expressions of EJ movements globally born from conflicts (at different scales). Most research on such conflicts is undertaken at either the case study level or sometimes at the national or regional level or sectoral level (Bebbington et al. 2007, Veuthey and Gerber 2011, Urkidi, 2010). The EJAtlas is more ambitious. From the data collected, some

interesting statistical results can be obtained in the future, aiming to develop a statistical political ecology, eventually testing correlations between conflicts and material flows, population density, water scarcity and other indicators. One academic article (in a major environmental journal) has been published analyzing 64 environmental conflict cases in Ecuador between 1980 and 2010 (Latorre et al. 2015) followed by a second article explaining the origins, the methodology, the data collection and the uses and outputs of the EJAtlas data (Temper et al. 2015). The next section provides a first general overview of the main characteristics of conflicts, their actors, and outcomes, which have been covered so far by the EJAtlas. While these preliminary results might change with a growing number of cases registered, we identify some first trends, as working hypotheses, worth to be pursued in future research.

Preliminary results from the EJAtlas

The resources in conflict and the affected population groups

Among the most represented types of conflicts covered by the EJAtlas by April 2015 (1354 cases), were those about mining (21%); industrial extraction of fossil fuels (19%); land conflicts (17%) and water management conflicts (14%), particularly hydroelectric dams. Hence, the majority of reported conflicts are located in the extraction phase of resources which are central to maintain current society's metabolism. The EJAtlas offers also information on conflicts arising from disposal of waste materials. Here we shall find also conflicts caused by excessive carbon dioxide emissions, related to REDD (Reducing Emissions from Deforestation and Forest Degradation) or Clean Development Mechanism (CDM) projects, as well as conflicts related to large-scale material waste disposal, such as in ship-breaking yards in India and Bangladesh (Demaria 2010). The EJAtlas, thus, offers insights of how environmental conflicts are created along local and global commodity chains, from cradle to grave.

By April 2015 most conflicts in EJAtlas were from rural areas (63%) while only 17% were located in urban areas, and the rest in 'semi-urban' areas. The historical EJ movement in the US was born from urban resistance to exposure to toxic waste; the EJAtlas focuses on rural conflicts in which diminished or denied access to local environmental resources, their degradation and corporate or state enclosures affect local communities and their livelihood. Many urban or 'rurban' conflicts in the EJAtlas are related to infrastructure and development projects, such as expansion of ports or airports, gentrification processes and 'renovation' of ancient neighborhoods, waste management and industrial facilities. The huge mobilization at Gezi Park in Istanbul (Özkaynak et al. 2015) exemplified the European movement against Grands Projets Inutiles Imposés. There are also many urban waste disposal conflicts.

On the companies involved in the conflicts

Global commodity chains entail a complex network of actors involved in environmental conflicts. The EJAtlas lists the frequency of conflicts in which any company was reported to be involved abroad either directly or via a subsidiary company (i.e. the number of conflicts located in a country different to the company's country of origin). Due to the current conflict coverage, companies come mainly from the fossil fuels sector (e.g. Royal Dutch Shell, Chevron Corporation; Exxon Mobil Corporation); the mining sector (e.g., BHP Billiton, Barrick Gold Corporation), or agro-industries (e.g. Monsanto Corporation). The ranking of companies associated with the conflicts reported in the EJAtlas might change, as we double the number of cases and increase the number of conflicts in under-represented areas. While network analysis, based on EJAtlas data, has been done for mining companies, as well as for EJO networks responding to mining conflicts (Özkaynak et al. 2015), there is much further research to do to better understand how global companies are involved via complex networks in environmental justice conflicts, as well as how EJOs may respond based on global collaborations.

Protesters and their forms of mobilization

The database forms include a space to list social actors mobilizing in conflicts. As shown in Figure 1, the actors that most often mobilize against projects are locally organized groups (local EJOS). Several actors can be listed simultaneously. Preliminary results show a high occurrence of cases involving indigenous and traditional communities plus ethnically discriminated groups. They are involved in

over one third of the cases documented with large regional variations. Indigenous peoples will often appeal to their territorial rights, or special protections such as the Right to Free Prior and Informed consent afforded to them through ILO 169 or, in India, adivasi forest rights.

The leading role of women in ecological conflicts is not sufficiently represented in Figure 1. How conflicts intersect with processes of gender empowerment is an important issue for research (Veuthey and Gerber 2010). In the database form we insisted in putting ‘women’ as a separate category under mobilizing actors (often a redundant question) in the hope of identifying conflicts where gender issues were key and where women took leadership roles. Research could be done on the subset of cases where women appear explicitly as actors (about 250, as of April 2015, Fig. 1).

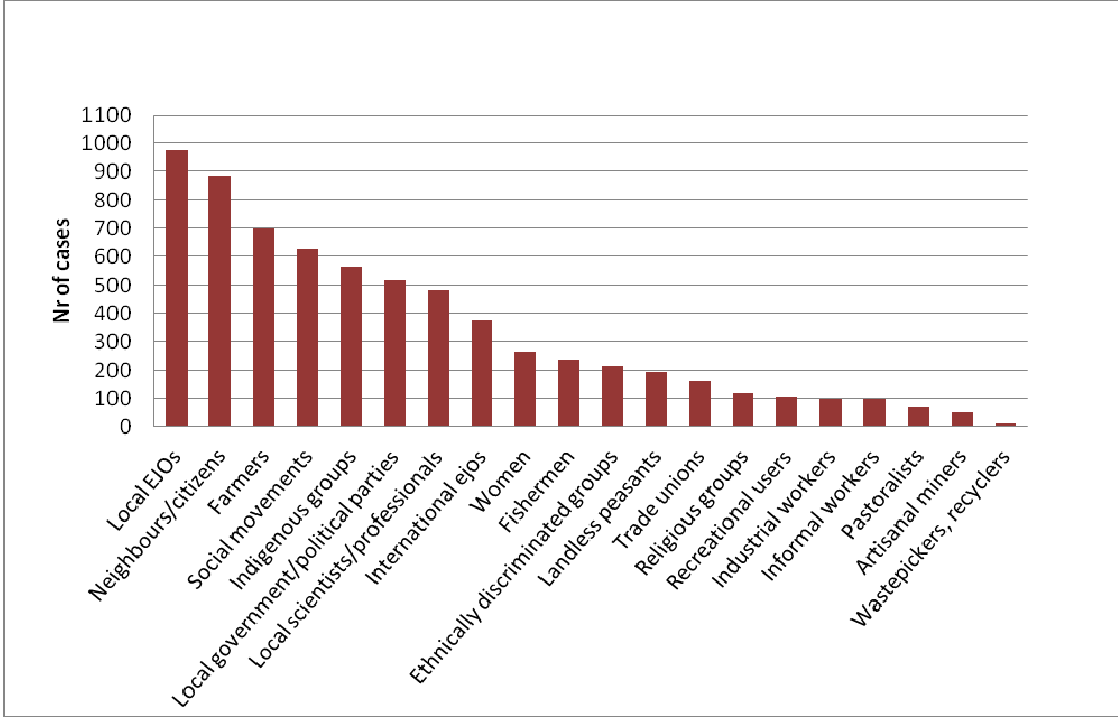


Figure 1: Frequency of actors mobilizing for environmental justice. Source: Authors’ elaboration based on data as reported in the EJAtlas in April 2015 (1354 cases).

Forms of mobilizations: strategic, tactical and discursive repertoires

Social movement theory (SMT) (Della Porta and Rucht 2002, Tarrow 2005, 2011, Giugni et al. 1999, Tilly 1978, 1993) seeks to explain why and how social mobilization occurs, how it manifests itself, and what the outcomes are. It explains how movements and organizations rely on a wide vocabulary of protest or repertoire of contention to counteract powerful actors and achieve their aims, ranging from institutional means (lobbying, public hearings, campaigns, testimonies, political pressures during elections) to direct action tactics (protest, demonstrations, boycotts, denunciations, shaming, strikes). The question of what strategies are viable in different political contexts will depend on what SMT scholars refer to as shifting ‘political opportunity structures’: the context and resources that facilitate or constrain the possibilities for collective action. In EJ, the strategic and tactical choices will further be shaped by the biophysical properties of the commodity and extraction processes. For example, blockades may be more effective when used to block access to extractive resources such as mines or logging in areas with dispersed populations and few access roads. Tree plantation resistance often entails pulling out of the saplings.

Marginalized groups negatively impacted will often build alliances or coalitions with more powerful actors that may exert more influence. At the local level, this may include local scientists, recreational users, organized NGOs or trade unions. In particular, links with sympathetic local government and political parties can help increase the leverage of contentious actors. Another important source of support entails alliances with extra-local actors such as scientific consultants who are experts, for instance, on hydrogeology, environmental chemistry or low level radiation (Conde 2014) and with

conservationist organizations from Northern countries, in temporary coalitions. We could select for study cases where local campaigns have been significantly strengthened by such alliances.

Ramachandra Guha (in Guha and Martinez-Alier 1997: 13-15) listed seven or eight forms of action of social and environmental protest in India. In the EJAtlas (April 2015), out of 60 documented cases of hunger strikes, half (30 cases of local *bhook hartal*) come from India. Also sacredness is a traditional powerful valuation language (as in the Niyamgiri Hill in Odisha, Temper and Martinez-Alier 2013) but innovation in the repertoire of contention has also proven effective in leading to desired outcomes. Recently many popular community-organized consultations or referendums appealing to local democracy have taken place across Latin America against mining projects (Urkidi and Walter 2011, Walter and Urkidi 2015). Local consultations appear so far in 98 cases in EJAtlas. Further work can establish how such action forms diffuse across locations. The ability to challenge Environmental Impact Assessments (EIAs) has improved in some countries and is widespread, with some 355 cases entailing such challenges. Financial divestment campaigns and some forms of shareholder activism have become more prevalent in recent years, yet as of April 2015, we only see this in some 40 cases registered in the EJAtlas.

Figure 2 shows the frequency of such mobilization forms. Most commonly reported forms of mobilizations include classic protest methods, such as complaint letters, public campaigns, street protests, the development of a network for collective action and furthermore, the involvement of national and international NGOs (Keck and Sikkink 1998). Gamson's (1990) Strategy of Social Protest represented an important effort to analyse different social movement strategies, however, regarding the effects of mobilizations on the final outcome of a conflict case, there is much statistical analysis to do in the future. Research from EJAtlas may help to clarify this point.

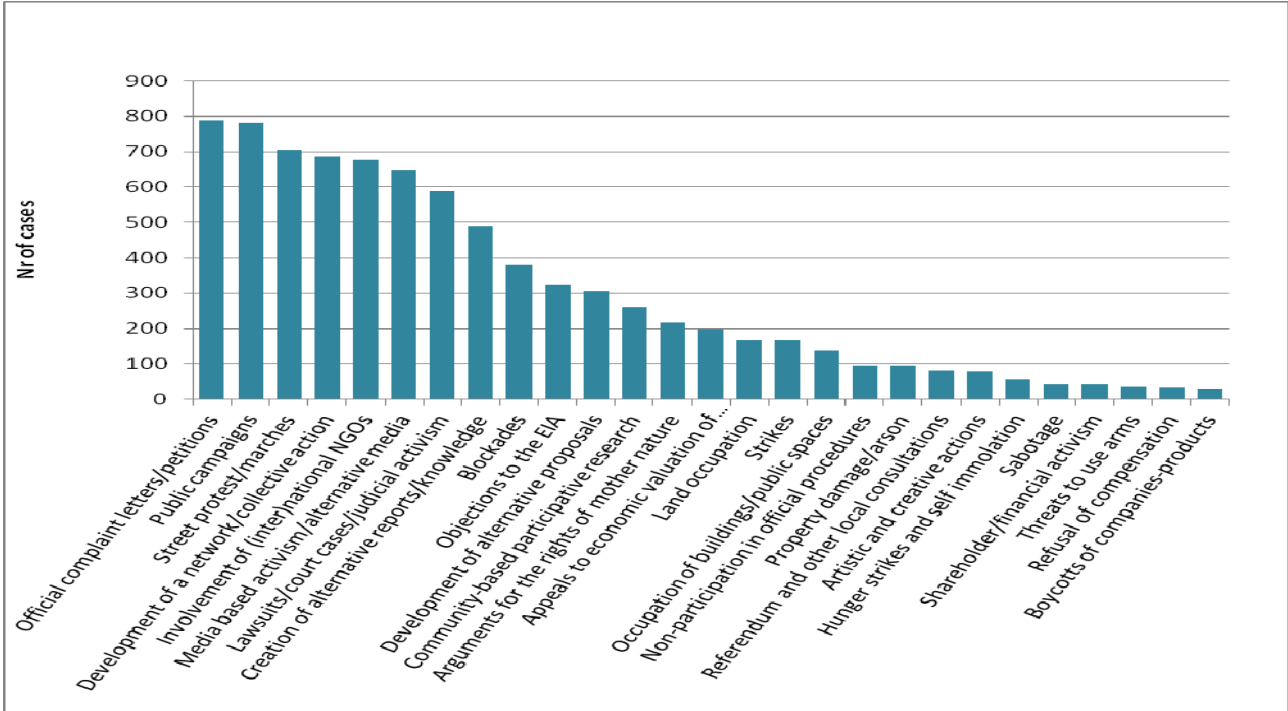


Figure 2: Frequency of forms of mobilizations for environmental justice. Source: Authors' elaboration, based on data as reported in the EJAtlas in April 2015 (1354 cases).

Conflict outcomes: processes and perceived success or failure

From the perspective of the involved local communities, we separate positive from negative outcomes, referring to different events and processes that occurred along the history of a conflict, as reported in the EJAtlas dataform. One conflict can of course have different outcomes. So far, ‘strengthening of participation’ across affected stakeholders has been observed as the most common positive outcome of environmental conflicts (419 cases), followed by compensations, where however we do not know, in how many cases compensations were perceived as adequate or not. There follows moratoria or other successful ways of stopping projects. Negotiated alternative solutions, as well as environmental improvement, representing a set of compromise responses to environmental injustice, follow. On the negative outcomes, the most common cases are displacement (297), followed by criminalization of activists (245), repression (239 cases), corruption (235 cases), violent targeting of activists (233 cases) and deaths (162 cases).

For the affected people and local EJOs, quite often, the central goal of their campaigns is to stop a project, or to impede that planning and construction moves forward. Thus, the last project status, ranging from ‘proposed’ (exploration phase), over ‘planned’ (decision taken to go ahead), ‘under construction’ and ‘in operation’, to ‘project stopped’, is a relevant variable to explain conflict outcome. The chance of stopping a project may vary with the timing of the resistance, with the type of social actors and their allies, with the type of commodity in question. While tourism and waste management projects currently appear as those most often stopped (over 30% of ‘stopped’ rate), fossil fuels (e.g. oil explorations) and water management (e.g. hydroelectric dams) projects are those that most rarely have been stopped (in less than 15% of cases). Such variations may help to reflect of the strategic interests at stake as well as the capital investment and mobility of different project types (for example point resources such as mines v. mobile projects such as factories and agricultural development).

In the EJAtlas a field offers the contributor (the one entering the conflict) the possibility to provide, either as involved actor or expert having substantial knowledge on the case, a classification of the outcome in terms of perceived EJ success or failure, accompanied by an open-ended text field in which the contributor is asked to explain his classification. Of all cases (n. 1354 by April 2015) contributors chose to answer the question with ‘not sure’ in over 34% of cases while 49% were characterized as EJ failures, in which from the perspective of the contributor, environmental justice was not served. In contrast, 17% of cases have been marked as EJ ‘successes’. Analysis of the ‘successes’ in EJ (and their contextual meaning), and the alternatives that they give birth to, are crucial topics. Nothing like this has ever been done for such large number of cases; some first attempts of analysis on a smaller set of mining conflicts can be found in Özkaynak et al. (2015), published as the 14th EJOLT report.

The vocabulary of environmental justice

Critical to the development of global EJ networks and activist movements has been the conceptual language that has arisen from particular conflicts such as those collected in the EJAtlas. We present here a set of concepts with origins outside academia and which are used by the global EJ movement (Martinez-Alier et al. 2014) linked to what Tilly called ‘repertoires of collective action’ (Tilly and Tilly 1981). Short definitions and the dates of origin of such concepts are provided in Table 2. This does not come only from the knowledge acquired through the EJOLT project (2011-15) and the compilation of the EJAtlas but from collaborative research with activists over many years (Martinez-Alier 2002; Healy et al. 2012). There are concepts of academic origin (such as ‘working class environmentalism’ (Barca 2012), ‘ecologically unequal trade’ (Hornborg 1998) or ‘ecological footprint’) that are also used or could be used by the global EJ movement. Here we focus on concepts of non-academic origin. The EJAtlas is an excellent source to discover further concepts of regional, national or international range.

Table 2: Vocabulary of the global environmental justice movement

Concept	EJOs and actors promoting it	Short description
Environmental Justice (EJ)	USA Civil Rights Movement, North Carolina 1982 against environmental injustices (Bullard 1990; 1999).	“People of color” and low-income populations suffer disproportionate harm from waste sites, refineries and incinerators, transport infrastructures.
Environmental racism	Rev Benjamin Chavis, c. 1982	The fight for EJ, against pollution in Black, Hispanic, Indigenous areas, was seen as a fight against <i>environmental racism</i> .
Ecological debt	Instituto Ecología Política, Chile, 1992, Acción Ecológica 1997	Rich countries’ liability for resource plunder and disproportionate use of space for waste dumping (e.g. GHG).
Popular epidemiology	Brown, P. , 1992, 1997	“Lay” local knowledge of illnesses from pollution may be more valid than official knowledge (sometimes absent).
Environmentalism of the poor	A. Agarwal/S. Narain (CSE, Delhi) c. 1989	Struggles by poor/ indigenous peoples against deforestation, dams, mining... ; proactive collective projects for water harvesting, and forest conservation
Food sovereignty	Via Campesina, c. 1996	People’s right to healthy, culturally appropriate, sustainably produced food. Right to define own food and agriculture systems.
Biopiracy	RAFI (Pat Mooney) 1993, popularized by Vandana Shiva	Appropriation of genetic resources (in medicinal or agricultural plants) without recognition of knowledge and property rights of indigenous peoples
Climate justice	CES (Delhi), 1991, Durban Alliance, CorpWatch 1999-2002	Radically reduce excessive per capita emissions of carbon dioxide and other GHG. “Subsistence emissions vs. luxury emissions”,
Water justice, hydric justice	Rutgerd Boelens, EJOs in Latin America (e.g. CENSAT). 2011.	Water should not run towards money, or towards power. It should go to those needing it for livelihood.
Water as human right	Pablo Solon (Bolivian envoy to UN), Maud Barlow (Council of Canadians), 2001	Human Right to Water recognized at UN level in 2011, as an independent human right.
“Green Deserts”	Brazil, network against eucalyptus plantations, <i>Rede Alerta contra o Deserto Verde</i> , 1999	Brazilian local term for eucalyptus plantations, used by networked CSO and communities, also by researchers and activists for any tree plantation.
Tree Plantations are not Forests	<i>Pulping the South</i> , 1996 by R. Carrere, L. Lohmann, World Rainforest Movement	The WRM collects and spreads information on tree plantation conflicts. It proposes a change in the FAO definition of forest, to exclude tree monocultures.
Land grabbing	GRAIN (small pro-peasant EJO), 2008	The wave of land acquisitions in Southern countries for plantations for exports, leading to first statistics on land-grabbing
Resource caps	Resource Cap Coalition, RCC Europe, c. 2010	It advocates reduction in global resource use and in poverty. It calls for a <i>European energy quota scheme</i> and the ratification of the <i>Rimini protocol</i> .

To Ogonize / Yasunize	ERA Nigeria, Acción Ecológica, Oilwatch, 1997-2007	Leave oil in the soil to prevent damage to human rights and biodiversity, and against climate change. Adopted by anti-shale gas fracking, tar sands and open cast coal mining movements.
Rights of Nature	Ecuador, Constitutional Assembly, 2008	In Constitution of Ecuador 2008, art 71, pushed by Acción Ecológica and Alberto Acosta. Actionable in court.
Corporate accountability	Friends of the Earth International, 1992-2002	At UN Johannesburg summit, FoE proposed the adoption of a Corporate Accountability Convention, against lukewarm CSR principles.
“Critical mass”, cyclists rights	San Francisco 1992 (Chris Carlsson)	International, reclaiming the streets with cyclists marching to impose cyclists’ rights.
Urban waste recyclers movements	c. 2005, GAIA against incineration and “energy valorization” of urban waste.	Unions or cooperatives of urban waste gatherers, with their positive environmental impact, including climate change (movements in Delhi, Pune, Bogota).
Urban “guerrilla food gardening”	c. 2000, started by “food justice” networks	Vacant lot food growing, permaculture, community gardening movements in cities around the world.
Toxic colonialism, toxic imperialism	BAN, Basel Action Network, c. 2000	Fighting the long-distance export of waste from rich to poor countries, forbidden by the Basel Treaty. E.g. ship-breaking in India or Bangladesh, chemical residues or nuclear waste, electronic waste.
Post-extractivism	Latin America, 2007, Eduardo Gudynas (CLAES), Alberto Acosta, Maristella Svampa	Against the reprimarization of LA economies. Transition to a sustainable economy based on solar energy and renewable materials. Impose quotas and taxes on raw materials exports.
<i>Buen Vivir, Sumak Kawsay</i>	Ecuador and Bolivia 2008	Adopted in Constitutions of both countries, inspired by indigenous traditions and by the “post-development” approach.
Indigenous territorial rights, and prior consultations	Convention 169 of ILO, 1989; adivasi forest rights in India, etc.	In conflicts on mining, oil exploitation, dams, etc., communities ask for applying legislation defending indigenous rights.
“Sand mafias”	Name given c. 2005 by environmental movement, journalists.	The illegal “mining” of sand and gravel in India in many rivers, driven by the growing building and public works industry.
“Cancer villages”	In China, popular name adopted by academics, officials (Lora-Wainwright, 2013)	Rural villages where industry has caused pollution (e.g. heavy metals), where lay knowledge of illness is relevant, and subdued protests take place.

The first concept in the list is ‘environmental justice’, born in the United States in struggles against waste dumping in North Carolina in 1982, as mentioned in the Introduction. Activist authors such as sociologist Robert Bullard but also civil rights activists with no academic affiliation and members of Christian churches, saw themselves as militants of EJ (Bullard 1990; Bryant and Mohai 1992; Agyeman et al. 2003; Pellow 2000, 2002). The fight against the disproportionate incidence of pollution in areas predominantly black, Hispanic, or indigenous was also seen as a fight against ‘environmental racism’, a concept that in the EJOs’ language means to treat badly other people in pollution or resource extraction injustices on grounds of membership of particular ethnic groups, social class or caste. In EJ conflicts, evidence of disproportionate incidence of morbidity or mortality

sometimes cannot be proven from official statistics because of the lack of doctors or hospitals in the areas concerned. Hence the rise of so-called ‘popular epidemiology’ (Brown 1992, 1997), a concept of relevance in many struggles inside and outside the United States— for instance for the plaintiffs in the Chevron-Texaco case in Ecuador (Martin Beristain et al. 2009). Popular epidemiology implies that ‘lay’ knowledge of pollution illnesses is not less valid than official knowledge. It is a concept that fits into the ‘post-normal science’ theory (Funtowicz and Ravetz 1993) and ‘street science’ (Corburn 2005). In the EJAtlas database form, one question elicits whether there are scientific disputes involved in the conflict in question, so that a subset of such cases could be selected for examination.

Reflecting the specific environmental challenges and distributional inequities of the global South, some EJOs adopted the term ‘environmentalism of the poor’ which as explained in the Introduction, is very close to the notion of EJ born in the US but applies less to urban than to rural peoples in the global South, similar to the Navajo in New Mexico who suffered from uranium mining. Although academics started to use this term in 1988–89 (drawing on research on India and Latin America), similar words had been used by Anil Agarwal, the founder of the Centre for Science and Environment (CSE) in Delhi, and editor of the first ‘citizens’ reports’ on the state of India’s environment. His successor, Sunita Narain, often uses the term ‘environmentalism of the poor’ to refer to the struggles in India against dams, deforestation, mining projects, and nuclear power stations (Narain 2008). Also in India, Shrivastava and Kothari (2012) have compiled many socio-environmental struggles and successes while putting forward a proposal for a radical ecology democracy.

The ‘environmentalism of the poor’ (and of the indigenous) is a concept opposed to the influential ‘post-materialist’ interpretation of environmentalism (and other new social movements) by Ronald Inglehart (1995). It does not envision environmental preservation as a luxury good, contrary to what Inglehart did. And in contrast to Ulrich Beck’s view of environmental risks as being impartial to social class (as might have been the case for a nuclear accident such as Chernobyl but which is not true in general—for example, for hurricane Katrina in New Orleans) (Beck 1992), the environmental movements of the poor and indigenous are place-based struggles for their own material livelihoods (Nixon 2011). In many ecological distribution conflicts, the poor are often on the side of preservation of nature against business firms and the state. This behavior is consistent with their interests and their values. Those affected may be motivated to act, in relation to other factors, such as degree of democracy, or if they are suffocated or not by fear, or violently repressed, as is often the case. In the EJAtlas, currently about 12% of conflicts report ‘deaths’ of environmental defenders.

One of the primary environmental challenges faced by populations of the global South stems from an economic system that produces ‘ecologically unequal trade’, an academic concept (Bunker 1985; Hornborg 1998, 2005; Hornborg et al. 2007). One aspect of such unequal trade was given the name of biopiracy (by Pat Mooney of RAFI in 1993, Shiva 1997). Biopiracy denotes the appropriation of genetic resources (in medicinal or agricultural plants) without any recognition of the original knowledge and ‘property rights’ of indigenous peoples. The word ‘biopiracy’ has been used in many complaints by EJOs. Even state authorities in Brazil and India have started to use this term. Academics writers and doctoral students also use it (Robinson 2010).

There are a number of other EJO concepts and policies that stem from conflicts over biomass. The many complaints against tree plantations grown for wood or paper pulp, depriving local people of land and water, gave rise 20 years ago to the slogan and movement ‘Plantations are not forests’. In Brazil, ‘green deserts’ was the spontaneous, bottom up name for eucalyptus plantations in Espirito Santo and other regions, opposed by local peasants and indigenous peoples. This was certainly a form of enclosure of forest commons. The driving force was the export of paper pulp and cellulose.⁴

Relatedly, the concept ‘food sovereignty’ was introduced in the early 1990s by Via Campesina, an international movement of farmers, peasants, and landless workers. Food sovereignty means the right of rural people (including women in particular) to grow their own food for themselves and for local markets, against corporate agriculture, particularly against agrofuel and tree plantations (Schutter 2012; GRAIN 2005). A small organization called GRAIN (which started in the 1980s in the fights

⁴ There are several monographic reports and analyses on tree plantations conflicts, Gerber, 2011; Kröger, 2011; W. Overbeek, M. Kröger, J.F. Gerber 2012; Kröger, M. 2014.

against agricultural ‘biopiracy’) introduced the term and the first statistics for ‘land-grabbing’ in 2008 for the new wave of land acquisitions often by force in Southern countries, for new plantations for exports. The term was then taken up by the *Journal of Peasant Studies* in special issues.

A term from the EJOs that has been very successful in the fights against ecologically unequal trade and climate change is that of the ‘ecological debt’ (Robleto and Marcelo 1992; Borrero 1994). There was an alternative treaty in Rio de Janeiro in 1992 on the ecological debt from North to South, and Acción Ecológica of Ecuador took the term and the struggle up in 1997, with several publications which included a definition and many examples. The ecological debt arises from the plunder of resources and also from the occupation of disproportionate environmental space by the rich countries (for example, to deposit an excessive amount of carbon dioxide in the oceans and the atmosphere, which belong to all humans equally). Some governments from countries of the South have deployed the concept of ‘ecological debt’ (or one part of it, the ‘climate debt’) in international negotiations on climate change (Bond 2010a,b). In the 2009 Copenhagen Conference of the Parties (COP), perhaps over 30 heads of government or ministers talked about the ecological debt awakening the fury of the US Ambassador, Todd Stern (Reuters 2009). The origin of the concept and many of the theoretical developments are mainly due to Latin American EJOs (Martinez-Alier 2002) and to some extent also to the international Friends of the Earth (FoE) and Jubilee South. Academics joined in later doing some calculations (Paredis et al. 2008; Srinivasan et al. 2008; Rice 2009; Roberts and Parks 2007a,b, 2009, Warlenius et al. 2015). Pope Francis’ encyclical *Laudato si* of June 2015 devotes two paragraphs (51 and 52) to the ecological debt from North to South.

Unsurprisingly, it was also EJOs that introduced and developed the concept of ‘climate justice’. An influential role in its introduction and dissemination was played by the CSE (Delhi) booklet of 1991, *Global Warming in an unequal world: A Case of Environmental Colonialism*, authored by Anil Agarwal and Sunita Narain (1991) pointing out that there were subsistence carbon dioxide emissions vs. luxury carbon dioxide emissions (Shue 1994, 1999). Then in the late 1990s came the Jubilee campaign against Northern financial bullying of the South, comparing the large ecological debt from North to South to the financial debt from South to North (Simms et al. 1999; Simms 2005). The concept of climate debt was supported by the World Council of Churches (Peralta 2007), the Third World Network, Action Aid, and Christian Aid.

A 2000 event in The Hague sponsored by the New York group CorpWatch was the first known conference based on this term (Bond 2013). CorpWatch in a document in November 1999 stated that ‘Climate Justice means, first of all, removing the causes of global warming and allowing the Earth to continue to nourish our lives and those of all living beings. This entails radically reducing emissions of carbon dioxide and other greenhouse gases. Climate Justice means opposing destruction wreaked by the Greenhouse Gangsters at every step of the production and distribution process—from a moratorium on new oil exploration, to stopping the poisoning of communities by refinery emissions—from drastic domestic reductions in auto emissions, to the promotion of efficient and effective public transportation’ (Bruno et al. 1999). Four years later, the Durban Group for Climate Justice was launched. It has made itself well-known by its campaigns against fake Clean Development Mechanism projects.⁵

The concept of water justice is associated with a university professor, Rutgerd Boelens (Wageningen University) but he has been working so closely with activists for many years that he himself would no doubt like water justice or hydric justice to be seen as concept of the EJOs (Boelens et al. 2011; Isch et al. 2012). Their favorite slogans are ‘water runs towards power’, and ‘water runs towards money’ unless stopped by civil society movements. The World Commission on Dams (WCD) was a civil society initiative that reported its conclusions in 2000 (WCD 2000). The WCD’s conclusions went directly against the unidimensional cost–benefit analysis procedures for deciding on dam building. The WCD report recommendations have not been implemented. Anti-dam movements continue to denounce water enclosures along with forced acquisition of land, diversion of rivers, and dispossession and displacement of rural and indigenous communities inhabiting territories rich in biodiversity and water sources (Rodriguez-Labajos and Martinez-Alier 2015). They include the

⁵ See also Hadden’s (2015) recent book about activist networks in the international climate change movement.

Brazilian MAB (Movement of People Affected by Dams) and the MAPDER network in Mexico. The EJAtlas provides many cases on conflicts on water in which contrasting valuation languages are deployed.

Meanwhile, another new term is appearing with greater regularity in recent years in EJ struggles: the commons movement. This sees the commons as a crucial sector of the economy which must be defended to preserve decommodified access to food, water, forests, and clean air (Di Chiro 1998). Influenced by Karl Polanyi, the movement fights against old and new enclosures. Since the late 1980s, as a reaction against Garrett Hardin's misnamed 'tragedy of the commons', authors like John Kurien defended small scale fisheries against large scale industry, using the term 'modern enclosures' or 'the tragedy of enclosures' (Martinez-Alier 1991). In municipal water management, paradigmatic movements against privatization of urban water services as in Cochabamba, Bolivia, are sources of inspiration for the defense of the commons in general (including access to information) and also for the defense of the human right to water.

Proposals to 'leave oil in the soil', also in defense of the commons, were first put forward in 1997. We now call them *Yasunizing* or *Ogonizing* and they come from Acción Ecológica Ecuador, ERA of Nigeria, and the Oilwatch network founded in 1995. The proposals apply also to tar sands, to coal ('leave coal in the hole'), shale gas. In the form of moratoria to extraction projects, they are meant for areas of great biodiversity value and where human rights are threatened. To such local reasons, climate change reasons are added, based on the thesis that there are 'unburnable fuels' if we want to stop increasing the concentration of carbon dioxide in the atmosphere (Temper et al. 2013). A new major public figure in the climate justice movement, Naomi Klein, became acutely aware of Ogonization and Yasunization movements - she calls them Blockadia, a name used by activists in Canada and the US (sometimes indigenous) stopping the construction of oil and gas pipelines.

Also in the field of energy policy, the civil society movements against nuclear energy since the 1970s gave rise to their own concepts. One of them, in Germany, was *Energiewende* (born in Weyl, c. 1980) which is now used in official public policy. Germans use sometimes a parallel term, *Wachstumwende* (growth turnaround), to translate the French *décroissance* or English 'degrowth', a movement in some Northern countries born in alternative urban or rural movements (Hess 2009; Conill et al. 2012; Chatterton and Pickerell 2010) that disengage mentally and practically from the growth economy. In Germany, *post-Wachstum* is also used. The degrowth movement might support EJ (Healy et al. 2012), for instance by asking for resource caps, meaning a policy to reduce extraction of materials. Resource caps have been discussed since the 1990s (Spangenberg 1995) in terms of calculations of 'fair shares' in the use of limited resources and limited environmental space. Degrowth is also very sympathetic to claims of an ecological debt from the South. This 'degrowth' movement has different sources (Martinez-Alier et al. 2010; Demaria et al. 2013; D'Alisa et al. 2014; Asara et al. 2015) including the proto-ecological economist Georgescu-Roegen (1971) but also the 'post-development' movement of the 1980s of Ashish Nandy, Gustavo Esteva, Arturo Escobar, Wolfgang Sachs, Serge Latouche, and Vandana Shiva (Sachs 1992). An alliance between the degrowth (or steady-state economy or *post Wachstum*) movements in the North and the global EJ movement was proposed by Martinez-Alier (2012) while in South America there are calls for a 'post-extractivist' economy (Gudynas 2012) leading to *buen vivir* instead of economic growth.

Other new concepts that are growing among the EJOs are 'energy sovereignty', 'sacrifice zones' (Lerner 2010), 'ecocide' (Zierler 2011) and the call for an international environmental crimes tribunal (complementary to demands for civil liabilities). The organization Global Witness provides statistics on the hundreds of environmentalists killed in many countries of the South. Refusing to participate in the game of corporate social responsibility, the EJOs have asked for corporate accountability (Utting 2008; Broad and Cavanagh 1999; Broad 2002). The new provision on the rights of nature (introduced in Ecuador's Constitution 2008, article 71, after an original idea from Accion Ecologica) is also popular among the EJOs that see themselves as fighting against crimes against humanity and crimes against nature.

The movement in Southern Italy denounces the eco-mafia and campaigns against waste dumping, complaining about 'biocide' (Armiero and D'Alisa 2012). There must be many other national or

regional terms of EJ the use of which we could discover through the EJAtlas. For instance, in India conflicts on sand and gravel mining from rivers or beaches are particularly acute (with people getting killed in different states), and the new label ‘sand mafias’ was given to this phenomenon. Similarly in China, in the complaints against pollution not only in urban areas but also in rural areas, the term ‘cancer villages’ began to be used in the last ten years or so (Lora-Wainright 2013). Researchers of such complaints in China appeal to the notion of ‘popular epidemiology’ born in the 1980s in the United States. In Argentina there is a growing movement against glyphosate (used for transgenic soy cultivation introduced by Monsanto), under the name *paremos de fumigar* (‘stop fumigating’). *Laudato si* (para. 135) mentions the danger to people living near fumigated fields. This links up with EJ campaigns by the Pesticide Action Network (Harrison 2011). In Brazil one term from local transport conflicts is *justiça nos trilhos*, ‘justice in the railways’ against the loss of life in accidents caused by massive iron ore transport to the export harbours (Porto et al. 2013) while in 2015 the EJ movement in the US has mapped the trajectories of what they term ‘bomb trains’ to demonstrate how in California risks from the hazardous transport of oil trains are disproportionately felt in Black or Hispanic areas.⁶

For the EJ movement of the 1980s, with urban roots, a good environment as defined by the 1991 People of Color Environmental Leadership conference in Washington DC was a safe, non-polluted place for living and making a living — environment is where we ‘live, work, and play’. Most of the world population is now urban. Inside cities, there are inter-connected movements introducing new concepts for a less unsustainable economy, such as ‘food justice’, ‘transit justice’ (Lucas 2004), cyclist and pedestrian rights (cyclists’ ‘critical mass’ movements in many cities) (Carlsson 2008), and fights against gentrification (Mitchell 2003). Such urban movements give a political meaning to squatting (Cattaneo 2011), they remake places for groups in danger of being ‘dis-placed’, re-assert traditional or new practices of land use, urban food production and water harvesting, and try to protect territory from contamination, land grabbing, gentrification, and real estate speculation (Gottlieb 2009; Gottlieb and Joshi 2010; Anguelovski and Martinez-Alier 2014).

Conclusion

Ecological distribution conflicts are largely related to growth and changes in the social metabolism, which is concomitant with economic growth, while other more proximate causes may further be related, for example, to population density, or land and water scarcity, or to institutional dimensions such as the particular behavior of different corporations, the property regimes, the financial speculation in raw materials, the degree of democracy in the country in question, or also the presence of indigenous populations. Further expansion of the EJAtlas will allow such causal links to be explored for a large number of cases.

We claim that there is a *global* movement for environmental justice, although almost all conflicts in the EJAtlas are *local* and they target specific local grievances. The movement is global because such local events belong to classes of conflicts that appear regularly elsewhere in the world (e.g. on open cast copper mining, on oil palm plantations), or because they raise the conflict issue to a global level through movements’ connections and networks and by doing so, they actually create and operate at a global scale (Sikor and Newell 2014). The actors in the conflicts are similar to some extent (the companies are sometimes the same, also the forms of mobilization are often the same), and national and international EJOs or networks (such as OCMAL, Oilwatch, WRM, GRAIN) were born from such conflicts. We claim that there is a Global Environmental Justice Movement that shares some common goals, frames and forms of mobilization, although obviously there is no single united organization in charge, no politbureau or central committee. This is also the case, for instance, in the global feminist movement.

The gains and losses of the use of the environment are often unjustly distributed not only as regards other species or future generations of humans but also among humans living today. There are many local movements expressing their grievances over such environmental injustices, although

⁶ For the full report, see <http://www.forestethics.org/sites/forestethics.huang.radicaldesigns.org/files/Crude-Injustice-on-the-Rails.pdf>

environmental injustice does not always lead to open complaints. Several groups have been producing inventories of ecological distribution conflicts (by country or by theme), such as OCMAL in Latin America on mining conflicts, or in Brazil Fiocruz and the EJ movement (Porto 2012). Our own contribution has been to build up the EJAtlas at ICTA-UAB with many outside collaborators. Although its coverage is still geographically and thematically uneven, on reaching 1600 cases by October 2015 we start to see some first trends and recurring dynamics in such conflicts, which need to be pursued further. For instance, indigenous populations appear to be involved in ecological distribution conflicts much more often than one would expect by their share in the population as a whole, perhaps because accelerated search for resources is increasingly expanding the 'commodity frontiers' to their territories, or because of increasing organization and recognition of indigenous territorial rights and correspondingly stronger movements.

Social mobilizations over resource extraction, environmental degradation, or waste disposal are not only about the distribution of environmental benefits and costs (expressed in monetary or non-monetary valuation languages); they are also about participation in decision-making and recognition of group identities. All such issues appear very regularly in the cases collected in the EJAtlas (Schlosberg 2007; Walker 2012; Sikor and Newell 2014; Urkidi and Walter 2011). EJ research encompasses issues of exclusion (Agarwal 2001) but also of the potential new leadership of environmental movements by different social actors, e.g. in the environmentalism of the poor as in EJ movements in general, it is crucial to recognize the contribution women make in poor communities both rural and urban (Agarwal 1992). Since the 1980s, EJOs and their networks have provided definitions and analyses of a wide array of concepts and slogans related to environmental inequities, and explored the connections between them. Thus, demands for 'food sovereignty' from the Via Campesina fit in with complaints against biopiracy, land grabbing and tree plantations, and also with climate change issues, as in the slogan 'traditional peasant agriculture cools down the Earth' (Martinez-Alier 2011). The protests against the World Trade Organization in Seattle in 1999 and at the World Social Forums of the 2000s certainly pushed forward the globalization of EJ (for instance, the Ecological Debt was featured in the successful alternative meetings to the WB and IMF assembly in Prague in 2000). There were earlier underpinnings in the alternative 'treaties' signed at Rio de Janeiro in 1992 and in the 1991 People of Color Environmental Justice Leadership Summit. EJ spread through organizations like FoE, which, while born in California as a 'white' conservationist movement, brought in EJOs which existed since the 1980s like CENSAT in Colombia and WALHI in Indonesia. Many other important environmental organizations such as the CSE in Delhi and Acción Ecológica in Ecuador linked the idea of environmentalism of the poor with wider notions of EJ and climate justice (FOEI 2005).

With these activist and social movement roots, the concepts of EJ were then taken up in academic research in political ecology studying Southern countries. Going beyond case studies, researchers now generate statistics on ecological distribution conflicts (Özkaynak and Rodriguez-Labajos 2012; Özkaynak et al. 2015; Latorre et al. 2015) made possible by the EJAtlas. The social sustainability sciences (human ecology, ecological economics, political ecology, environmental law, environmental sociology, ecological anthropology, environmental history, environmental politics, urban ecology, agroecology, industrial ecology) have an academic origin, with international societies, academic journals and handbooks, and professorships that go under such names. Many concepts and theories have been produced by these booming fields of science in the last 30 years. There are also grassroots concepts for sustainability introduced by EJOs which have been discussed here and which are also objects of academic research. Such concepts support the global EJ movement; at the same time they also support local rural and urban movements protecting territory and defending place-based interests and values (Escobar 2008; Anguelovski and Martinez-Alier 2014).

To conclude, the EJAtlas mapping is a means of showing not only injustices but also the instances of resistance to land and water grabbing, pollution from oil extraction, mining or waste disposal, uncertain threats from technologies like pesticide spraying or nuclear energy, demonstrating how global movements for environmental justice are spreading geographically, globalizing their claims and sharing resources and becoming increasingly networked amongst themselves. The EJAtlas collects many successes in stopping projects. The global movement for environmental justice is formed not only by these many local foci of resistance but also by intermediary rural or urban-based organizations

which have developed their own vocabulary and slogans and put forward interlinked claims at several scales. All this testifies to the existence of a rural and urban global movement for environmental justice.

References

- Agarwal, A. and Narain, S. 1991. Global warming in an unequal world: a case of environmental colonialism. New Delhi, Centre for Science and Environment.
- Agarwal, Bina. 1992. The gender and environment debate: lessons from India. *Feminist studies* 119-158.
- Agarwal, B. 2001. Participatory exclusions, community forests and gender: An analysis for South Asia and a conceptual framework. *World Development* 29 (10): 1623-48.
- Agyeman, J., R. Bullard, and B. Evans, eds. 2003. Just sustainabilities: Development in an unequal world. Cambridge, MA: MIT Press.
- Anguelovski, I. 2014. *Neighborhood as Refuge: Environmental Justice, Community Reconstruction, and Place-making in the City*. Cambridge, MA: MIT Press.
- Anguelovski, I. and J. Martinez-Alier. 2014. The 'Environmentalism of the Poor' Revisited: Territory and Place in Disconnected Global Struggles. *Ecological Economics*. 102: 167-76.
- Armiero, M. and D'Alisa, G. 2012. Rights of Resistance: The Garbage Struggles for Environmental Justice in Campania, Italy. *Capitalism, Nature, Socialism* 23(4): 52-68.
- Asara, V., Otero, I., Demaria, F. Corbera, E. 2015. Socially sustainable degrowth as a social-ecological transformation: repoliticizing sustainability. *Sustainability Science*. DOI 10.1007/s11625-015-0321-9.
- Bacon C, deVuono-Powell S, Frampton M L, LoPresti T, Pannu C. 2013. Introduction to Empowered Partnerships: Community-Based Participatory Action Research for Environmental Justice. *Environmental Justice* 6: 1-8.
- Barca, S. 2012. On Working-class Environmentalism. An Historical and Transnational Overview. *Interface. A Journal for and about Social Movements* 4(2): 61-80.
- Bebbington, A., D.H. Bebbington, J. Bury, J. Langan, and J.P. Muñoz. 2007. Mining and social movements: Struggles over livelihood and rural territorial development in the Andes. *World Development* 36 (12): 2888-2905.
- Beck, U. 1992. *Risk Society. Towards a New Modernity*. London: Sage.
- Blanco, H. 1991. El ecologismo de los pobres, La República. April 6, 1991.
<http://hugoblancogaldos.blogspot.com.es/2008/12/el-ecologismo-de-los-pobres.html>
- Boelens, R., Cremers, L., and Zwartveen, M., eds. 2011. *Justicia Hídrica. Acumulación, conflicto y acción social*. Lima: Instituto de Estudios Peruanos.
- Bond, P. 2010. Repaying Africa for Climate Crisis. 'Ecological Debt' as a Development Finance Alternative to Emissions Trading. In *Upsetting the Offset. The Political Economy of Carbon Trading*, ed. by Steffen Böhm and Siddhartha Dabhi (London: MayFlyBooks), p. 275-291.
<http://mayflybooks.org/wpcontent/uploads/2010/07/9781906948078UpsettingtheOffset.pdf>
- Bond, P. 2010. Maintaining momentum after Copenhagen's collapse: Seal the deal or "Seattle" the deal? *Capitalism Nature Socialism* 21 (1): 14-27.
- Bond, P. 2013. Climate Justice. In *Critical Environmental Politics*, edited by C. Death. London: Routledge, p. 133-145.
- Borrero, J. M. 1994. *La Deuda Ecológica. Testimonio de una reflexión*. Cali: FIPMA.
- Broad, R. and Cavanagh, J. 1999. The Corporate Accountability Movement: Lessons and Opportunities. *The Fletcher Forum of World Affairs* 23(2): 151-69.
- Brown, P. 1992. Popular Epidemiology and Toxic Waste Contamination: Lay and Professional Ways of Knowing. *Journal of Health and Social Behavior* 33: 267-81.
- Brown, P. 1997. Popular Epidemiology Revisited. *Current Sociology* 45: 137-56.
- Bruno, K., Karliner, J., and Brotsky, C. 1999. Greenhouse Gangsters vs. Climate Justice. CorpWatch.
<http://www.corpwatch.org/article.php?id=1048>.
- Bryant, B. and Mohai, P. 1992. *Race and the Incidence of Environmental Hazards: A Time for Discourse*. Westview Press, Boulder CO.
- Bullard, R. D. 1990. *Dumping In Dixie: Race, Class, and Environmental Quality* Westview Press, Boulder CO.
- Bunker, S. 1985. *Underdeveloping the Amazon. Extraction, Unequal Exchange, and the Failure of the Modern State*. Chicago: University of Chicago Press.
- Carlsson, C. 2008. *Nowtopia: How Pirate Programmers, Outlaw Bicyclists and Vacant-lot Gardeners Are Inventing the Future Today*. Oakland, CA: AK Press.
- Carrere, R. and L. Lohmann. 1996. *Pulping the South. Industrial tree plantation and the world paper economy*. London: Zed Books.
- Casas-Cortés M. I., Osterweil M., Powell D. E. 2008. Blurring Boundaries: Recognizing Knowledge-Practices in the Study of Social Movements. *Anthropological Quarterly* 81 17-58.

- Cattaneo, C. 2011. The Money-free Life of Spanish Squatters., chapter 10 in *Life Without Money*, edited by Anitra Nelson (London: Pluto Press).
- Chatterton, P. and Pickerell, J. 2010. Everyday Activism and Transitions Towards Post-capitalist Worlds. *Transactions of the Institute of British Geographers* 35: 475–90.
- Conde, M., 2014. Activism Mobilising Science. *Ecological Economics*, 105, pp. 67-77, DOI 10.1016/j.ecolecon.2014.05.012
- Conill, J., Castells, M., Cardenas, A., and Servon, L. 2012. Beyond the Crisis: The Emergence of Alternative Economic Practices. In *Aftermath: The Cultures of the Economic Crisis*, edited by M. Castells, J. Caraça, and G. Cardoso (Oxford: Oxford University Press), ch. 9.
- Corburn J. 2005. *Street Science: Community Knowledge and Environmental Health Justice* Cambridge, MA: MIT Press.
- D’Alisa, G. Demaria F. Kallis, G. eds. 2014. Degrowth: a vocabulary for a new era. Routledge, London.
- Della Porta D. and Rucht D. 2002. The Dynamics of Environmental Campaigns. *Mobilization: An International Journal* 7(1) 1-14.
- Demaria, F. 2010. Shipbreaking at Alang-Sosiya (India): An ecological distribution conflict. *Ecological Economics* 70 (2): 250-260.
- Demaria, F., Schneider, F., Sekulova, F., and Martinez-Alier, J. 2013. What is Degrowth? From an Activist Slogan to a Social Movement. *Environmental Values* 22(2): 191–215.
- Di Chiro, G. 1998. Nature as Community. The Convergence of Social and Environmental Justice. In *Privatizing Nature: Political struggles for the Global Commons*, edited by M. Goldman London: Pluto.
- Escobar A. 2008. *Territories of Difference: Place, Movements, Life, Redes*. Durham, Duke UP.
- Fischer-Kowalski, M. and Haberl, H. 1997. Tons, Joules and Money: Modes of Production and their Sustainability Problems. *Society and Natural Resources* 10(1): 61–85.
- Fischer-Kowalski, M., Haberl H eds 2007. *Socioecological Transitions and Global Change: Trajectories of Social Metabolism and Land Use*. Edward Elgar Publishing Limited, Cheltenham
- Fischer-Kowalski M Haberl H, 2015. Social metabolism: a metrics for biophysical growth and degrowth, chapter 5 in J. Martinez-Alier, R. Muradian, eds. *Handbook of Ecological Economics*, Edward Elgar, Cheltenham, 2015
- FOEI (Friends of the Earth International). 2005. *Climate Debt. Making Historical Responsibility Part of the Solution*. http://www.foei.org/en/resources/publications/climate-justiceand-energy/2000-2007/climatedebt.pdf/at_download/file.
- Funtowicz, S. O. and Ravetz, J. R. 1993. Science for the Post-Normal Age. *Futures* 25 735-755.
- Gamson, W. 1990. *The Strategy of Social Protest*, 2nd ed. Belmont, CA: Wadsworth Press.
- Gerber, J. F., 2011, Conflicts over Industrial Tree Plantations in the South: Who, How and Why?, *Global Environmental Change* 21(1): 165–78.
- Georgescu-Roegen, N. 1971. *The entropy law and the economic process*. Cambridge, MA: Harvard Univ. Press.
- Giugni, M., M Adam, D., Tilly, C. 1999. *How social movements matter*, University of Minnesota Press, Minneapolis.
- Gottlieb R. 2009. Where We Live, Work, Play . . . and Eat: Expanding the Environmental Justice Agenda. *Environmental Justice* 2: 7–8.
- Gottlieb, R. and Joshi, A. 2010. *Food Justice*. Cambridge, MA: MIT Press.
- GRAIN. 2005. Food Sovereignty: Turning the Global Food System Upside Down. *Seedling*. <http://www.grain.org/article/entries/491-food-sovereignty-turning-the-global-food-system-upside-down> (accessed March 28, 2013).
- Gudynas, E. 2012. Estado compensador y nuevos extractivismos. Las ambivalencias del progresismo sudamericano. *Nueva Sociedad* 237: 128–46.
- Guha R., and Martinez-Alier J., 1997. *Varieties of environmentalism. Essays North and South* Earthscan, London.
- Guha, R., Martinez-Alier, J., 1999. Political ecology, the environmentalism of the poor and the global movement for environmental justice. *Kurswechsel* 3, 27–40.
- Haas, W., Krausmann, F., Wiedenhofer D., Heinz, M. 2015. How Circular is the Global Economy?: An Assessment of Material Flows, Waste Production, and Recycling in the European Union and the World in 2005. *Journal of Industrial Ecology*, DOI: 10.1111/jiec.12244
- Hadden, J. 2015, *Networks in Contention: The Divisive Politics of Global Climate Change*, Cambridge U.P., Cambridge.
- Harrison, J. L. 2011. *Pesticide Drift and the Pursuit of Environmental Justice*. Cambridge, MA: MIT Press.
- Healy, H., Martinez-Alier, J., Temper, L. Walter, M., Gerber J.F. eds. 2012. *Ecological economics from the ground up*, Routledge, London.
- Hess, D. J. 2009. *Localist Movements in a Global Economy: Sustainability, Justice, and Urban Development in the United States*. Cambridge, MA: MIT Press.

- Hornborg, A. 1998. Towards an Ecological Theory of Unequal Exchange. Articulating World System Theory and Ecological Economics. *Ecological Economics* 25, 127–136.
- Hornborg A. 2005. Footprints in the cotton fields: The Industrial Revolution as time–space appropriation and environmental load displacement. *Ecological Economics* 59 74–81.
- Hornborg, A., McNeill, J. R., and Martinez-Alier, J., eds. 2007. *Rethinking Environmental History, World-system History and Global Environmental Change*. Lanham MD: Atamira Press.
- Inglehart, R. 1995. Public Support for Environmental Protection: Objective Problems and Subjective Values in 43 Societies, *PS: Political Science and Politics* 28(1): 57-72.
- Isch, E., Boelens, R., and Peña, F. eds. 2012. *Agua, Injusticia y Conflictos*. Lima: Instituto de Estudios Peruanos.
- Kapp, K.W. 1950. Social costs of business enterprise. London: Asia Publishing House.
- Keck, M., Sikkink, K. 1998. Activists beyond borders: advocacy networks in international politics, Cornell U.P., Ithaca, N.Y.
- Kousis M., 1998. Protest-Case Analysis: A Methodological Approach for the Study of Grassroots Environmental Mobilizations. Working Paper No.570, Center for Research on Social Organization, Department of Sociology, University of Michigan.
- Krausmann, F., S. Gingrich, N. Eisenmenger, K.H. Erb, H. Haberl and M. Fischer-Kowalski. 2009. Growth in global materials use, GDP and population during the 20th century. *Ecological Economics* 68 (10): 2696-2705.
- Kröger, M. 2011. Promotion of contentious agency as a rewarding movement strategy: evidence from the MST-paper industry conflicts in Brazil. *Journal of Peasant Studies* 38(2), 435-458.
- Kröger, M. 2014. The political economy of global tree plantation expansion: a review. *Journal of Peasant Studies* 41:2, 235-261.
- Latorre, S., Farrell, K., Martinez-Alier, J. 2015. [The commodification of nature and socio-environmental resistance in Ecuador: An inventory of accumulation by dispossession cases, 1980-2013](#). *Ecological Economics*.116: 58-69.
- Lerner, S. 2010. *Sacrifice Zones. The Front Lines of Toxic Chemical Exposure in the United States* (preface by Phil Brown), MIT Press, Cambridge MA.
- Lora-Wainright, Anna. 2013. *Fighting for Breath: Living Morally and Dying of Cancer in a Chinese Village*. Honolulu: University of Hawai Press.
- Lucas, K. 2004. *Running On Empty: Transport, Social Exclusion and Environmental Justice*. Bristol: The Policy Press.
- Martin Beristain, C., Paez, D., and Fernandez, I. 2009. *Las palabras de la selva: Estudio psicosocial del impacto de las explotaciones petroleras de Texaco en las comunidades amazónicas de Ecuador* (Bilbao: Hegoa).
- Martinez-Alier, J. 1991. Ecology and the Poor: A Neglected Dimension of Latin American History. *Journal of Latin American Studies* 23(3): 621–39.
- Martinez-Alier, J. 2011. The EROI of agriculture and its use by the Via Campesina. *Journal of Peasant Studies* 38(1): 145-160.
- Martinez-Alier, J. 1995. Distributional issues in ecological economics, *Review of Social Economy* 53, 511–28.
- Martinez-Alier, J. 1995. The Environment as a Luxury Good or "Too Poor to Be Green", *Ecological Economics* 13: 1-10.
- Martinez-Alier J., O'Connor, M. 1996 Economic and ecological distribution conflicts, in R. Costanza, O. Segura and J. Martinez-Alier eds, Island Press, Washington DC.
- Martinez-Alier, J., Pascual, U., Vivien, F., and Zaccai, E. 2010. Sustainable De-growth: Mapping the Context, Criticisms and Future Prospects of an Emergent Paradigm. *Ecological Economics* 69(9): 1741–7.
- Martinez-Alier, J., Temper, L., and Demaria, F., 2014. Social Metabolism and Environmental Conflicts in India. *Indialogs* 1: 51–83.
- Martinez-Alier, J., Anguelovski, I., Bond, P., Del Bene, D., Demaria, F., Gerber, J.-F., Greyl, L., Haas, W., Healy, H., Marín-Burgos, V., Ojo, G., Firpo Porto, M., Rijnhout, L., Rodríguez-Labajos, B., Spangenberg, J., Temper, L., Warlenius, R., and Yáñez, I. 2014. Between Activism and Science: Grassroots Concepts for Sustainability Coined by Environmental Justice Organizations. *Journal of Political Ecology* 21: 19–60.
- Martinez-Alier, J. 2002. The environmentalism of the poor: A study of ecological conflicts and valuation. Cheltenham: Edward Elgar.
- Martinez-Alier, J. 2012. Environmental Justice and Economic Degrowth: an alliance between two movements. *Capitalism, Nature, Socialism*, 23(1): 51-73.
- Martinez-Alier, J. 1997. Environmental Justice (Local and Global). *Capitalism, Nature, Socialism* 8(1) 91-107.
- Martinez-Alier, J., G. Munda, and J. O'Neill. 1998. Weak comparability of values as a foundation for ecological economics. *Ecological Economics* 26 (3): 277-286.
- McCully, P. 1996. Silenced rivers: The ecology and politics of large dams. London: Zed Books.
- Mitchell D. 2003. *The Right to the City: Social Justice and the Fight for Public Space*. New York and London: The Guilford Press.

- Moore, J.W. 2000. Sugar and the expansion of the early modern world-economy: Commodity frontiers, ecological transformation, and industrialization. *Review: A Journal of the Fernand Braudel Center* 23 (3): 409-433.
- Muradian, R., Martinez-Alier, J., Walter, M. 2012. Hegemonic Transitions and Global Shifts in Social Metabolism: Implications for Resource-rich Countries. *Global Environmental Change* 22: 559–67.
- Narain, S. 2008. Learn to Walk Lightly. *Business Standard* (August 1, 2008).
- Nixon, R. 2011. *Slow Violence and the Environmentalism of the Poor*. Cambridge: Harvard University Press.
- Ostrom, E. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge University Press, Cambridge.
- Overbeek, W., Kröger, M., Gerber, J.F. 2012. An overview of industrial tree plantation conflicts in the global South. Conflicts, trends, and resistance struggles. EJOLT report n. 3.
- Özkaynak, B., Rodriguez-Labajos, B., et al. 2012. Mining Conflicts Around the World: Common Grounds from an Environmental Justice Perspective. EJOLT Report n. 7.
- Özkaynak, B., Aydın, C.I., Ertör-Akyazı, P. and Ertör, I. 2015 The Gezi Park Resistance from an Environmental Justice and Social Metabolism Perspective. *Capitalism, Nature, Socialism* 26(1): 96-114.
- Özkaynak, B., Rodriguez-Labajos, B., Aydın, C.I., Yanez, I., Garibay, C., 2015. Towards environmental justice success in mining conflicts: An empirical investigation, EJOLT Report 14, 96 p.
- Paredis, E., Goeminne, G., Vanhove, W., Maes, F., and Lambrecht, J. 2008. *The Concept of Ecological Debt: its Meaning and Applicability in International Policy*. Gent: Academia Press.
- Pellow, D. N. 2000. Environmental Inequality Formation: Toward a Theory of Environmental Justice. *American Behavioral Scientist* 43: 581–601.
- Pellow, D. N. 2002. *Garbage Wars: The Struggle for Environmental Justice in Chicago* Cambridge, MA: MIT Press.
- Peralta, A. K., ed. 2007. *Ecological Debt. The Peoples of the South are the Creditors. Cases from Ecuador, Mozambique, Brazil and India*. Geneva: World Council of Churches, 145.
- Porto de Souza, M. F., Pacheco, T., Leroy, J. P., eds. 2013. *Injustiça ambiental e saúde no Brasil. O mapa de conflitos*. Rio de Janeiro: Fiocruz.
- Porto de Souza M.F. 2012 Movements and the Network of Environmental Justice in Brazil. *Environmental Justice*, 5(2) 100-104.
- Reuters. 2009. “U.S. Will Pay into Climate Fund, but Not Reparations: Todd Stern.” <http://www.reuters.com/article/2009/12/09/us-climate-copenhagen -sternidUSTRE5B82R220091209>
- Rice, J. 2009. North South Relations and the Ecological Debt: Asserting a Counter-Hegemonic Discourse. *Critical Sociology* 35: 225–52.
- Roberts, J. T. and Parks, B. C. 2007a. *A Climate of Injustice: Global Inequality, North- South Politics, and Climate Policy*. Cambridge, MA: MIT Press.
- Roberts, J. T. and Parks, B.C. 2007b. Fueling injustice: Globalization, ecologically unequal exchange and climate change. *Globalizations* 4 (2): 193-210.
- Roberts, J. T. and Parks, B. C. 2009. Ecologically Unequal Exchange, Ecological Debt, and Climate Justice. The History and Implications of Three Related Ideas for a New Social Movement. *International Journal of Comparative Sociology* 50: 385–409.
- Robinson, D. F. 2010. *Confronting Biopiracy. Challenges, Cases and International Debates* London: Earthscan, 191.
- Robledo, M. L. and Marcelo, W. 1992. *Deuda ecológica*. Santiago de Chile: Instituto de Ecología Política.
- Rodríguez-Labajos, B., and J. Martinez-Alier. 2015. Political ecology of water conflicts. *Wiley Interdisciplinary Reviews: Water* (2015).
- Sachs, W. ed. 1992. *The Development Dictionary: A Guide to Knowledge as Power*. London: Zed Books.
- Schlosberg, D. 2007. *Defining Environmental Justice. Theories, Movements and Nature*. Oxford: Oxford University Press.
- Schutter, O. de. 2012. *From Food Security to Food Sovereignty*. <http://www.eesc.europa.eu/resources/docs/de-schutter.pdf> (accessed March 28, 2013).
- Shrivastava, A. and Kothari, A. 2012. *Churning the Earth. The Making of Modern India*. New Delhi: Penguin Viking.
- Shiva, V. 1997. *Biopiracy: The Plunder of Nature and Knowledge*. Boston: South End.
- Shue, H. 1994. Subsistence Emissions, Luxury Emissions. *Law & Policy* 15: 39–59.
- Shue, H. 1999. Global Environment and International Inequality. *International Affairs* 75: 531–45.
- Sikor, T. and Newell, P. 2014. Globalizing Environmental Justice? *Geoforum* 54: 151–7.
- Simms, A. 2005. *Ecological Debt. The Health of the Planet and the Wealth of Nations*. London: Pluto Press.
- Simms, A., Meyer, A., and Robins, N. 1999. *Who Owes Who? Climate Change, Debt, Equity and Survival*. London: Christian Aid. <http://www.ecologicaldebt.org/Whoowes-Who/Who-owes-who-Climate-change-debt-equity-and-survival.html>

- Sousa Santos B. 2014. *Epistemologies of the South. Justice against Epistemicide*, Paradigm Publishers, Boulder/London
- Spangenberg, J., ed. 1995. *Towards Sustainable Europe. A Study from the Wuppertal Institute for Friends of the Earth Europe*. Luton/Brussels: FoE Publications Ltd.
- Srinivasan, U. T., Carey, S. P., Hallstein, E., Higgins, P. A. T., Kerr, A. C., Koteen, L. E., Smith, A. B., Watson, R., Harte, J., and Norgaard, R. B. 2008. The Debt of Nations and the Distribution of Ecological Impacts from Human Activities. *PNAS* 5: 1768–73.
- Steinberger, J. K., Krausmann, F., Eisenmenger, N. 2010. “Global Patterns of Materials Use: A Socioeconomic and Geophysical Analysis.” *Ecological Economics* 69: 1148–58.
- Tarrow, S. 2005, *The New Transnational Activism*, Cambridge U.P., Cambridge.
- Tarrow, S. 2011, *Power in Movement. Social Movements and Contentious Politics*, Cambridge U.P., Cambridge (3rd ed.).
- Temper, L. and Martinez-Alier, J. 2013. The god of the mountain and Godavarman: Net Present Value, indigenous territorial rights and sacredness in a bauxite mining conflict in India. *Ecological Economics* 96: 79-87
- Temper, L., Yáñez, I., Sharife, K., Ojo, G., Martinez-Alier, J., CANA, Combes, M., Cornelissen, K., Lerkelund, H., Louw, M., Martínez, E., Minnaar, J., Molina, P., Murcia, D., Oriola, T., Osuoka, A., Pérez, M. M., Roa Avendaño, T., Urkidi, L., Valdés, M., Wadzah, N., and Wykes, S. 2013. *Towards a Post-Oil Civilization: Yasunization and Other Initiatives to Leave Fossil Fuels in the Soil*. EJOLT Report No. 6.
- Temper, L. 2014, *Environmentalism of the dispossessed: Mapping ecologies of resistance*, Doctoral thesis, ICTA, Universitat Autònoma de Barcelona.
- Temper, L., Del Bene, D., Martinez-Alier, J. 2015. Mapping the Frontiers and Frontlines of Environmental Justice: The EJAtlas. *Journal of Political Ecology* 22: 255-278.
- Tilly, L. and Tilly, C. 1981. *Class Conflict and Collective Action*. Beverly Hills: Sage.
- Tilly, C. 1978. *From Mobilisation to Revolution*, Addison-Wesley, Reading MA.
- Tilly, C. 1993. Contentious Repertoires in Great Britain, 1758-1834 *Social Science History* 17(2) 253-280.
- Urkidi, L. 2010. A global environmental movement against gold mining: Pascua-Lama in Chile. *Ecological Economics* 70 (2): 219-227.
- Urkidi, L. and M. Walter. 2011. Dimensions of environmental justice in anti-gold mining movements in Latin America. *Geoforum* 42 (6): 683-695.
- Utting, P. 2008. “Social and Environmental Liabilities of Transnational Corporations. New Directions, Opportunities and Constraints.” In *Corporate Accountability and Sustainable Development*, edited by J. Clapp and P. Utting. Delhi: Oxford University Press.
- Varga, C., Kiss, I., and Ember I. 2002. “The Lack of Environmental Justice in Central and Eastern Europe.” *Environmental Health Perspectives* 110: 662–3.
- Veuthey, S. and J. F. Gerber. 2010. Logging conflicts in southern Cameroon: A feminist ecological economics perspective. *Ecological Economics* 70 (2): 170-177.
- Walker, G. 2012. *Environmental Justice: Concepts, Evidence and Politics*. London: Routledge.
- Walter, M. Urkidi L. 2015 Community mining consultations in Latin America (2002–2012): The contested emergence of a hybrid institution for participation, *Geoforum*, doi:10.1016/j.geoforum.2015.09.007
- Warlenius, R. Pierce, G. Ramasar, V. 2015 Reversing the arrow of arrears: The concept of “ecological debt” and its value for environmental justice. *Global Environmental Change*, 30: 21-30.
- WCD (World Commission on Dams). 2000. *Dams and Development: A New Framework for Decision-making: the Report of the World Commission on Dams*. Earthscan.
- Zierler, D. 2011. *The Invention of Ecocide: Agent Orange, Vietnam, and the Scientists Who Changed the Way We Think About the Environment*. Athens: University of Georgia Press.