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Ecological debt

History, meaning and relevance
for environmental justice

Rikard Warlenius (coord.) with contributions from

Gregory Pierce, Vasna Ramasar, Eva Quistorp, Joan Martínez-Alier,
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Abstract

The ecological debt concept emerged in the early 1990s from within social movements driven by rising environmental awareness, emerging consciousness of Western responsibility for past colonial subjugations, and a general sense of injustice during the third world debt crisis. First developed organically, mainly in locally-scaled, civil contexts, ecological debt has since gained attention in academia and international environmental negotiations.

The concept of ecological debt requires further elucidation and elaboration, especially in light of its historical interconnection with environmental justice. In this paper, the development of the concept of ecological debt in both activist and academic circles is described, theoretical building blocks for its operationalisation are discussed and three brief cases illustrating its recent utilisation are presented. Drawing on these building blocks, the concept of ecological debt has been used as a biophysical measure, a legal instrument and a distributional principle. In theory and in practice, it has much to offer to the global environmental justice movement. We conclude by reflecting on some of the pros and cons of the ecological debt concept as a tool to be used in fulfilling some of the goals of environmental justice movements in the world today.

Keywords

Ecological debt	environmental movements
Climate debt	ecological economics
Carbon debt	biophysical measures
Environmental Justice	Climate ethics
sustainable development	human rights
debt cancellation	world economy

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Acronyms

ATCA	US Alien Tort Claims Act
AE	Acción Ecológica
ALBA	Bolivarian Alliance for the Americas
CBD	Convention on Biological Diversity
CBDR	Principle of common but differentiated responsibilities
CO ₂	Carbon Dioxide
COP	Conference of the Parties
EJOLT	Environmental Justice Organisations, Liabilities and Trade
EJO	Environmental Justice Organisation
ENRED	European Network for the Recognition of the Ecological Debt
EPA	Environmental Protection Agency
FOEI	Friends of the Earth International
GNP	Gross National Product
IMF	International Monetary Fund
KP	Kyoto Protocol
LDC	Least Developed Countries
MEA	Multilateral Environmental Agreements
NGO	Non-Governmental Organisation
OECD	Organisation for Economic Development and Co-operation
PPP	Polluter Pays Principle
SAP	Structural Adjustment Program
SPEDCA	Southern People's Ecological Debt Creditors Alliance
TWN	Third World Network
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WWC	World Council of Churches

Foreword

Conflicts over resource extraction or waste disposal increase in number as the world economy uses more materials and energy. Civil society organizations (CSOs) active in Environmental Justice issues focus on the link between the need for environmental security and the defence of basic human rights.

The EJOLT project (*Environmental Justice Organizations, Liabilities and Trade*, www.ejolt.org) is an FP7 Science in Society project that runs from 2011 to 2015. EJOLT brings together a consortium of 23 academic and civil society organizations across a range of fields to promote collaboration and mutual learning among stakeholders who research or use Sustainability Sciences, particularly on aspects of Ecological Distribution. One main goal is to empower environmental justice organizations (EJOs), and the communities they support that receive an unfair share of environmental burdens to defend or reclaim their rights. This is done through a process of two-way knowledge transfer, encouraging participatory action research and the transfer of methodologies with which EJOs, communities and citizen movements can monitor and describe the state of their environment, and document its degradation, learning from other experiences and from academic research how to argue in order to avoid the growth of environmental liabilities or ecological debts.

Thus EJOLT will increase the capacity of EJOs in using scientific concepts and methods for the quantification of environmental and health impacts, increasing their knowledge of environmental risks and of legal mechanisms of redress. On the other hand, EJOLT is enriching research in the Sustainability Sciences through mobilising the accumulated ‘activist knowledge’ of the EJOs and making it available to the sustainability research community. Finally, EJOLT is also helping to translate the findings of this mutual learning process into the policy arena, supporting the further development of evidence-based decision making and broadening its information base. We focus on the use of concepts such as ecological debt, environmental liabilities and ecologically unequal exchange, in science and in environmental activism and policy-making.

The overall aim of EJOLT is to improve policy responses to and support collaborative research on environmental conflicts through capacity building of environmental justice groups and multi-stakeholder problem solving. A key aspect is to show the links between increased metabolism of the economy (in terms of energy and materials), and resource extraction and waste disposal conflicts so as to answer the driving questions:

Which are the causes of increasing ecological distribution conflicts at different scales, and how to turn such conflicts into forces for environmental sustainability?

Among the different topics addressed in EJOLT, ecological debt represents one of the most important cross-cutting issues. Not only does the project generate new empirical evidence of North-South inequalities through activist research, but it also reunites some of the organisations that have been particularly active in developing this notion and in achieving its current influence on social movements and public policies.

In particular, EJOLT has contributed to explore the legal implications of ecological debt, by applying the principles of international environmental law and making proposals to develop frameworks of international regimes for this purpose (EJOLT report 11, Pigrau et al 2014). In March, 2014, a workshop on ecologically unequal exchange and ecological debt took place in Lund, Sweden, Human Ecology Division at the Lund University. Among other objectives, the participants discussed possible policies for ameliorating asymmetries in the international trade in ecological resources.

Now this EJOLT report 18 aims at bringing together these different voices, pursuing several purposes. First, the contributors provide an overview of the events in the short history of the ecological debt concept. Second, they summarise the different perspectives the intellectual and practical application of the notion of ecological debt. Third, and most importantly, they emphasize the prevailing validity of the discussion, in face of the increasing pressures suffered by communities in the Global South due to the socio-metabolic demands of the global economic system.

Beatriz Rodríguez-Labajos

Series editor

1

Introduction

At least two reports on ecological debt were published in 1992: “Deuda ecológica” (Robleto & Marcelo 1992) and “Miljöskulden” (Jernelöv 1992). The authors of these reports, from Chile and Sweden respectively, were most likely unaware of each other and their reports are quite different in approach and content. Robleto and Marcelo's report was an interjection into the global environmental negotiations going on in Rio at the time from a critical NGO, while Jernelöv's report was written for the Swedish Environmental Advisory Council and largely intended for a national audience.

The Chilean report reflected an ongoing debate on ecological debt that had started in Latin America in the late 1980s and had intensified in the run-up to the 1992 Rio Earth Summit (Gudynas 2008)¹. Although it presented ecological debt specifically in the context of ozone depletion and the resulting costs to health in Southern Chile, the concept was also generalized as, according to Robleto and Marcelo, “*el patrimonio vital de la naturaleza . . . que ha sido consumido y no restituido a ella*” [“*the vital heritage of nature . . . that has been consumed and not returned to it*”; our translation].

The Swedish report, the title of which is translated as “The Environmental Debt”, was, on the other hand, intended as a first attempt to calculate Sweden's debt to future generations². In it, ecological debt was defined as “*the restoration costs for techno-economic environmental harms and the capital required to pay for recurring repair efforts*” (Jernelöv 1992:11, our translation). While Robleto & Marcelo's report is often identified as seminal in campaigns calling for the recognition of ecological debt, Jernelöv's conceptualisation of debt has had little significance in international debates on the issue over the last twenty years, though it is still occasionally referred to in Swedish research on sustainability.

¹ According to Martinez-Alier (2002: 212), the first mention of ecological debt was, however, made by German ecofeminist Eva Quistorp, a founding member of the Green Party (see **Box 1**).

² In the report, Sweden's 1990 environmental debt is assessed to ~SEK 260 billion, (roughly USD 40 billion), rising annually at a rate of ~SEK 6.6 billion, or USD 1 billion (at 2012 exchange rates) (Jernelöv 1992:7-8).

Box 1 The concept of ecological debt, back in the 1980s

by Eva Quistorp

Within the preparations for Nairobi UN women's conference in 1985, I organised a feminist working group on so-called development politics, a topic that generated big debates in the left and alternative groups and greens and churches in Germany at that time. I had developed an ecofeminist view on many problems of the world in the anti-nuclear energy movement and the feminist movement since the early 70s. I wanted to change some of the world views and debates within the left and the academia towards a more ecological direction, putting into question not only the capitalist model but the models of progress and technologies and consumer life styles too.

Then maybe I had some different thoughts on debt, because I am a theologian and not an economist and not a Marxist. My influences come from the early philosophical Marx, and Simone Weil, and Francis of Assisi, and Rachel Carson, and Wanghaari Mathai, and my sisters in the global women's and ecology movement and from those small farmers women, and those like my grandmothers gardening and looking for livelihoods, who never used an airplane or a refrigerator, or a car, or a cellular phone.

So I invented the term ecological debt as complementary to the debated financial debts and financial demands. I do not like so much, that the term is now often used in the same sense as financial demands and less in political and cultural and mental restructuring and changing life, consumption and production and reproduction patterns.

I was very happy, when my friend Christel Neusüss, who wrote the book "To put Lenin on his feet", and who had been a left political professor, immediately understood my new term and accepted it, with her more scientific view, as well as my friend Helga Satzinger, a biologist and feminist writing a lot against genetic engineering too. So we included the term with a text in a yellow booklet with the title "Women in movement". We brought it to Nairobi, and it was edited by the Green Group in the German Bundestag in 1985.

As a follow up of the brochure I offered a workshop in Nairobi on women, peace and ecology. It was the first one in that direction at a UN Women's Conference beside one Workshop of UNEP on environmental education. With the term ecological debt I wanted women to get into strategic questions and look into our common ecological history of the world, into our common goods (such as forests, and seas, and soil, and water), and not to degrade creation and our common goods, or goods of the indigenous communities, or of land which should be owned by the women farmers into 'resources', which is a technical, abstract, economic term. I did not want to use the term ecological debt only for the old questions of who is guilty of colonialism, but look into the contradictions of societies too, within the North and the South, because not all people misuse common goods and nature and atmosphere in the same way...

Partly in the Rio Conference in 1992 and in the 1995 Beijing conference the Women's tent and the women's agenda integrated some of the issues and I am happy that Ecuador and researchers took up the term and it is going around the world now. But I hate it, when the Chinese or Indian or Brazilian government elites are misusing it only to hide, what they are doing with their coal mines, and forest killing and nuclear arms and so on.

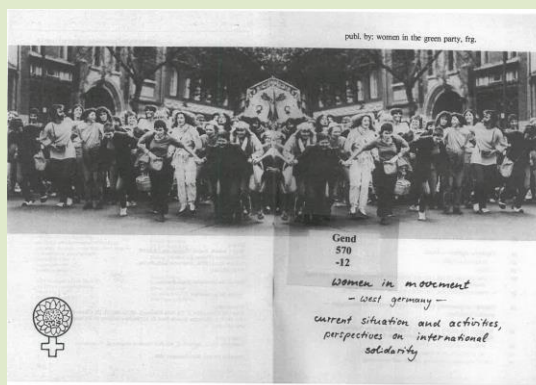
Figure 1

Cover page of "Women in movement"

"We are the ones who are supposed to pay the debts of an economic system that is increasingly being exposed as incapable of guaranteeing the existence of human beings and other living organisms on this earth. The debts we are to pay are numerous: (...) *ecological debts*, caused by the plundering, pollution, and irreversible destruction of our natural resources and making it ever more difficult for women to secure the existential basis for their lives and those of their children."

Source: Laubach et al. 1985: 2

Picture: courtesy of E. Quistorp



The point in mentioning them together here is that they illustrate well the scope of debates on the concept of ecological debt over the past twenty years. Indeed, since 1992 the breadth and number of as yet unresolved questions relating to the concept seem only to have grown: Should ecological debt mainly be expressed in symbolic terms, or should it be quantified and monetized? Is it essentially a moral, a political or an economic concept? Should it be applied mainly to the North-South divide as a compensation for historical and ongoing injustices and inequalities, or should it mainly be framed as an intergenerational debt owed to future world citizens—or should it be a combination of the two? Should it be repaid, and how? From whom, to whom?



This brief listing should by no means be considered comprehensive, and this report does not pretend the impossible in attempting to definitively answer these or other similarly difficult questions that continue to propel ongoing debates over ecological debt. Rather, this report more modestly aims to provide an overview of the development of the concept and to discuss some of the fields where it has been or is currently being applied, especially in terms of the goals of the EJOLT collaborative research project.

One of the primary goals of EJOLT, the Environmental Justice Organisations, Liabilities and Trade research project, is to empower Environmental Justice Organisations (EJOs) by elucidating scientific concepts and methodologies of relevance to the often context-specific activities of such organisations. EJOLT's 2010 Proposal to the EU Commission makes this goal clear: *“There is a demand from international EJOs and also from government officials for the instruction of the methodology of such [academic] calculations in terms that activists and citizens can understand”* (EJOLT 2010:20).

Box 2 The relation between Environmental justice and Ecological debt

Source: Own elaboration

Environmental justice is a broader concept than Ecological debt, focusing more generally on the unequal distribution of ecological burdens and benefits. It has its origin in struggles against the dumping of toxic waste in minority (mainly African-American) communities in the US in the early 1980s, and was therefore originally aligned closely with environmental racism). Since that time, environmental justice has spread beyond the US contexts of its origin and is now widely used by activists and academics alike to call attention to how the distribution of ecological burdens follows general patterns of power distributions (for a recent overview, see Martinez-Alier et al. 2014).

Ecological debt, on the other hand (and as focused on in this paper), is more often used as an indicator of the cumulative, or net sum, of historical environmental injustices. Although not a defining condition of its usage, it primarily focuses on historical geographical inequalities, as between specific countries or more generally between the global North and South. Environmental justice can also be geographically oriented but is more likely to focus on categories such as race, gender or class.

Readers of this report should not only find themselves introduced in a general sense to the concept of ecological debt but should also find inspiration in reflecting on how the concept is already used or might be of use in their ongoing struggles

The aim of this report is therefore directly linked to the context within which it has been drafted, as ecological debt (including climate debt) has been identified as a key EJOLT concept, one that is in need of better elucidation if EJOs are to operationalise its possibilities in their ongoing activities. Readers of this report (and especially EJO activists) should in this way not only find themselves introduced in a general sense to the concept of ecological debt but should also find inspiration in reflecting on how the concept is already used or might be of use in their ongoing struggles against inequality and injustice wherever they work in the world. As such, the action research that EJOLT represents, which aims at greater reciprocity and collaboration between academic theorisation and civil practice, is further developed and normalised through the present text.

We believe that this aim of action research can also be better met by making the ‘activist knowledge’ practitioners in their work generate knowledge that is unfortunately seldom recognised as such (and even less in demand) by academia, more available as empirical data to more research-oriented activists. Such academics, for their part, can in turn continue to work to develop and validate more standardised methodologies and theoretical understandings based on this



often place- and context-based activist knowledge in order to, hopefully, distil that knowledge and make it available to a wider array of practitioners who struggle for justice and equality within their own specific contexts around the world. By utilising this distilled knowledge in those contexts, these activists can then generate further sets of empirical data. And the cycle can continue.

Our hope is that the framing of this paper thus dialectically will initiate a more enduring and fluid correspondence between activist and academic knowledge that will continue into the future in building a collaborative framework for these two different approaches to knowledge generation to achieve the shared goal of environmental justice. We also believe that the development of such a framework might provide a solid basis for moving forward in achieving the broader goals of the EJOLT research project.

This report is organised into three main sections. After this introduction, the second section gives an overview of the development of the concept of ecological debt and the social movements that have brought it to the forefront. The third section provides a glimpse at the current state of both activist and academic knowledge types in terms of their claims for the concept, as well as theoretical building blocks on which a foundation for operationalising ecological debt might be formed. Thereafter, in the fourth section, three cases in which ecological debt has been or can be utilised effectively in specific areas—as a biophysical measure within sustainability science and ecological economics, as a legal tool within international environment law and as a distributional principle within political theory—are presented. Finally, we discuss some of the pros and cons of the concept as a tool for fulfilling the goal of environmental justice in the world.

2

Historical overview of the concept of Ecological Debt

2.1 1992: The cradle of a concept

In the early 1990s, with the convergence of three important historical drivers—rising environmental awareness, emerging recognition of responsibility for colonial subjugation, and unease during the debt crisis—the concept of ecological debt was in the air³. The 1992 Rio Earth Summit, a follow-up to the first international summit on the environment in Stockholm (1972), garnered a lot of media attention for environmental and development issues, which in turn led for the first time to the mobilisation of broad civil society on such issues. The Rio Summit was also the event at which several struggles at different political and social scales that first emerged in the 1960s and that had become significant issues around the world in the 1970s and 1980s culminated. By the time of Rio, for example, many nations had already acknowledged the impacts of emerging environmental issues and had begun to take state-level measures to address them that had seldom before been imagined possible. The founding of the US Environmental Protection Agency, which was established in 1970 by the conservative Nixon administration, is an illustrative example of the broad-based support for such initiatives.

Concurrent with these state-level political actions was the growing recognition in social research of what in 1988 was termed by Peruvian historian Alberto Flores Galindo ‘the environmentalism of the poor’. Because this form of environmentalism grows out of “*local, regional, national and global distribution conflicts caused by*

³ Colombia's president at the time, Virgilio Barco, used the concept in a speech in 1990. Fidel Castro of Cuba used it in the Rio conference 1992 (Martinez-Alier 2002: 213).



economic growth and social inequalities" (Martinez-Alier 2002:14), the primary actors in these conflicts—"the poor"—tend not to regard themselves as environmentalists per se, but rather as individuals and communities engaged in a struggle to defend their very livelihoods. As ecological economist Joan Martinez-Alier (2002:11) asserts:

[T]he main thrust of this . . . [environmental] current is not a sacred reverence for Nature but a materialist interest in the environment as a source and a requirement for livelihood; not so much a concern with the rights of other species and of future generations of humans as a concern for today's poor humans . . . Its ethics derive from a demand for contemporary social justice among humans (Martinez-Alier 2002:11).

The 1992 Rio Earth Summit should be seen here as illustrative of this point. Perhaps the best known outcome of Rio are the conventions—on climate change, biodiversity and desertification—that were adopted by the world's state governments.

Less well-remembered from the meeting, however, is that NGOs and grassroots organisations also adopted a number of treaties of their own. Particularly relevant within the context of this report was the adoption of the Debt Treaty, which frankly stated that the *"planetary ecological debt of the North . . . is essentially constituted by economic and trade relations based on the indiscriminate exploitation of resources, and its ecological impacts, including global environmental deterioration, most of which is the responsibility of the North"* (qtd. in Paredis et al. 2008:3). The Treaty also demanded that pressure be put *"on international organisations for the establishment, by the end of 1995, of a system of accounting of planet Earth in order to quantify the cumulative debt of the Northern countries which results from the resources they have levied and the destruction and waste produced in the course of the last 500 years"* (Ibid:25).

Less well-remembered than the governmental conventions from the 1992 Rio meeting, is that NGOs and grassroots organisations also adopted a number of treaties of their own, such as the Debt Treaty

Figure 2

The UN Earth Summit in Rio de Janeiro, 1992

Several environmental conventions adopted during the Summit were criticised for being toothless. Greenpeace protested with a banner "SOLD" hanging from the side of Sugar Loaf Mountain. But in Rio, also NGO's and grassroots organisations adopted documents such as the Debt Treaty.

Photo credit: Greenpeace / Steve Morgan





To be sure, the irony of 1992, which marked the 500-year anniversary of the ‘discovery’ of the Americas by Columbus in 1492, was lost on neither the framers of the treaty nor on others at the meeting. While Columbus’ landing in what would become the West Indies was celebrated by some as auspicious in the shaping of the modern world, others chose instead to celebrate 500 years of indigenous resistance and commemorate the victims of a half millennia of colonialism and oppression, of so many centuries of plunder and resource extraction in the Americas in historical accrual by the Western architects of the modern state system of an as yet unpaid ecological debt.

The early 1990s gave rise not only to such solemn remembrances of this history of accrual, however, but also to growing acknowledgment of its persistence even into the late-20th century, especially with the focus at the time on the debt crisis that had by then all but consumed the global South. Briefly⁴, in the 1970s international bankers, searching for lucrative capital investments after the stagnation of industrialised state economies that resulted from oil price shocks, began to offer cheap loans to developing countries, whose governments borrowed heavily—at times in earnest response to growing international pressures to develop, at others to satisfy decidedly less savoury compulsions. Responding to this industrial stagnation and concerned over rising inflation, however, U.S. Federal Reserve Chairman Paul Volcker resolved early in Reagan’s first term to shift from Keynesian to monetarist policies in an effort to break this stagflationary impasse. Volcker’s move, which steeply raised the federal funds rate from an average of 11.9 per cent in 1979 to 20 per cent in 1981, succeeded in controlling inflation, but at the same time it put heavily indebted third world countries in an impossible situation in regards to debt repayment.

Faced with default, countries saddled with these heavy external debts found themselves at the mercy of the World Bank and the International Monetary Fund (IMF), which set conditions for bail-out or further funding that mandated ‘structural adjustments’ to liberalise national economies and governance structures. Such adjustments, which led to the demise of the Keynesian state as a governance framework around the globe, included massive cuts in public expenditures, removal of state price controls and subsidies, comprehensive privatizations of state-owned companies, currency devaluations and trade liberalisation. Concurrent across the global South with the introduction of such economic adjustment measures was as a direct result of those measures the rise of grave social consequences, from reductions in health and education spending, to growing malnutrition, to increased unemployment, to disposessions of land and tenure rights, etc. As standard practice, such structural adjustment programs also tellingly forced developing countries to refocus their economic activities on increasing exports of primary products through intensified resource extraction.

What made the concept of ecological debt so brilliant was that it suddenly made it possible for the developing South to turn tables against financial creditors in the North

⁴ See George (1988) for a detailed history.



By the early 1990s, the ecological and social degradations that had at that point already resulted from this mandated intensification of extractive activities lent even further authority to the emergence of ecological debt as a concept that could account for both historical and ongoing injustices levied on the peoples of the global South by the seemingly unappeasable rapaciousness of the North. Recognising the place of this contemporary injustice in history at least since Columbus, one key paragraph of the 1992 Debt Treaty states that foreign debt is only “*the most recent mechanism of the exploitation of Southern peoples and the environment by the North*” (qtd. in Paredis et al. 2008:3).

What made the concept of ecological debt so brilliant in this context was that it suddenly made it possible to turn tables against creditors in the North; while the developing South had to this point in modern history always been framed as indebted to the industrial North, that is, the concept of ecological debt effectively reversed the direction of the arrow of arrears. Framed through an ecological debt discourse, degradation of both environmental and social ecologies of the South constituted an unpaid account of ongoing Northern accrual. The global North, in other words, became historically reprobate, a delinquent debtor.

The development of the conception of ecological debt has been a bottom-up, inductive process of reasoned knowledge generation through which original ideas and novel practices have continued to emanate

2.2 ‘Organic growth’: the build-up of a movement

Paredis et al. (2008:23) aptly describe the development of the concept of ecological debt since the early 1990s as a process of ‘organic growth’. Surfacing originally within different civil, locally-scaled contexts and even to this day not having a standardised definition or truly anchoring personality, place or approach, the concept has remained rather amorphous and flexible in its characterisations, methodologies and practical applications. On this count, it deviates from similar concepts such as ecological footprints and environmental space that were conceived of by academic researchers and had already garnered restricted definitions and unified methodologies before subsequently being adopted by NGOs and other civil society activists and practitioners.

Indeed, only the Catalan ecological economist Joan Martínez-Alier (see **section 3**) has been recognised as the exception to the general rule of the disconnection between academic and civil society treatments of the ecological debt concept. In referencing its ‘organic growth’, therefore, Paredis et al. rightly suggest that the development of the conception of ecological debt has been a bottom-up, inductive process of reasoned knowledge generation through which original ideas and novel practices have continued to emanate and flow out of the ground-level, place-based experiences and concerns of campaigners and practitioners actively pursuing ecological equity and justice in the world.

In the years directly following the 1992 Earth Summit, the concept of ecological debt gestated within the context of then-prevalent campaigns for external debt cancellation, growing through side events and networking opportunities at conferences and through mention in publications calling for cancellation of the global South’s external debt. A key actor in this period was the Ecuadorian NGO and EJOLT partner Acción Ecológica (AE), which presented the statement “No

More Plunder: They Owe Us the Ecological Debt” in Johannesburg in 1999 (AE 2000). That same year, representatives of Friends of the Earth International (FoEI), while gathered in Quito, launched a campaign on ecological debt (FOEI 2003). Together, AE and FOEI organised a network of NGOs in founding the Southern People's Ecological Debt Creditors Alliance (SPEDCA), the aim of which was to push for the “*international recognition of the ecological debt, historical and current*” (Paredis et al. 2008:4). Soon after, an alliance of ecological ‘debtors’ sympathetic to arguments for recognition of the concept of ecological debt, the European Network for the Recognition of the Ecological Debt (ENRED), was also formed (e.g. WCC 2002).⁵



Figure 3

The campaign on ecological debt

Thanks to the support of FoEI in Prague in 2000, the campaign on ecological debt made a qualitative leap, founding the Southern People's Ecological Debt Creditors Alliance

Photo credit: Acción Ecológica

Then, in 1999, at the peak of the Jubilee 2000 Debt Campaign, the brochure “Who owes who?: Climate change, debt, equity and survival” (Simms et al. 1999) was distributed. The brochure, which included an attempt to quantify the historical carbon debt of the North in comparison to the external debt facing the South, was one of the first publications in which the idea of a carbon (later climate) debt was formulated, resembling the historical responsibility approach that had been proposed by Brazil and included in the 1997 UNFCCC negotiations. In the debate sparked by this idea of historical responsibility, as Roberts and Parks (2007) explain, the notion of carbon debt was referred to by representatives from several developing countries. The brochure also, importantly, marked a shift in focus from the concept of ecological to that of climate debt, which provided the debt concept with greater exposure and legitimacy in mainstream discussions at the time.



Figure 4

In December 2009, 100,000 people marched in Copenhagen for a climate deal

A great deal of the protests evolved around the concept of climate debt

Photo credit: Benno Hansen / Wikimedia

⁵ While SPEDCA seems to be active as of the writing of this paper insofar as regular updates are made on their web page (<http://www.deudaecologica.org>), a glance at the ENRED site (www.enredeurope.org) gives the impression that it, after an ambitious start at the European Social Forum in Paris in 2003, ceased to be active in 2004.



Box 3 The concept of climate debt

Source: Patrick Bond, interviewed by Chandra Kumar (2010)

In an interview with Chandra Kumar (2010) – partially reproduced next - , Patrick Bond, from the Centre for Civil Society at the University of KwaZulu-Natal, in Durban, explains the origins of the climate debt concept and how it can be operationalized.

“Chandra Kumar: Climate talks broke down at Copenhagen. The G-77, representing 130 countries, suspended talks because they felt the countries of the North – with the US and Canada being the most glaring culprits – were unwilling to accept responsibility for their emissions. We heard the phrases ‘climate debt’ and ‘climate justice’ coming from representatives of the South. What do these concepts refer to and how do you think activists in countries like Canada should take them up?”

Patrick Bond: ‘Climate justice’ is the phrase that was popularized as a movement slogan at the December 2007 launch of the network Climate Justice Now! in Bali. The idea of climate justice brings together radical environmentalism with global justice currents such as those forged by Zapatismo, and by the protests in Seattle, Quebec City, Soweto, Bhopal, the Narmada Valley, and several other cases of recent Indigenous activism and anti-capitalism. The indigenous, small island, African, and Andean leadership we’ve seen is vital given this movement’s need to take direction from those most adversely affected. [...]

Another great boost for these efforts came from the research and eloquent reportage of Naomi Klein who in late 2009, assisted many in the North to realize how much they owe the South in damages for taking up too much environmental space: that is ‘climate debt’. The phrase is most closely associated with Quito-based Acción Ecológica and its advisor Joan Martínez-Alier of Barcelona, but Jubilee South chapters from Manila to Buenos Aires have also made this a campaigning issue.

Last April, in an inspiring statement to the UN General Assembly, the Bolivian government played a leading role in putting climate debt on the UN’s agenda. In September the World Council of Churches endorsed the idea despite the opposition of some Northern members. But the big breakthrough in the last half of 2009 was the willingness of the Ethiopian tyrant, Meles Zenawi, to demand a Copenhagen commitment to Africa of up to \$100 billion per year by 2020, without which the Africans would walk out. They even did a November dress rehearsal at a preparatory meeting in Barcelona. [...]

As for the climate debt demand, some of us (including me) were naive to believe Zenawi, who detoured to Paris on his way to Copenhagen and, with the enthusiastic support of Nicolas Sarkozy, promptly cut his demands in half by accepting lower financial transfers and removing the walk-out threat. But now that the climate debt genie is out of the bottle, US officials – in denial of course, refusing to acknowledge the concept – and Europe will continue to be badgered to pay by CJ activists. So will South Africa, which owes the continent a vast amount, given that we emit 42 percent of Africa’s greenhouse gases but have less than 8 percent of its population.

One of the nuanced debates is whether the debt should take the form of individualized and potentially commodifiable ‘Greenhouse Development Rights’ or whether instead we can move toward more transformative and collective strategies for claiming debt instead. Another debate concerns the form in which the climate debt would be paid, since no sensible climate debt activist trusts the kinds of strategies that the likes of Hillary Clinton offer: CDM expansion via carbon trading, or the traditionally corrupt, corporate-dominated, and geopolitically-influenced aid of the sort the Canadian International Development Agency is infamous for. We’re even unsure of the reliability of the G-77 climate financing demands, which include both public payments and market mechanisms.”

Just like ecological debt being closely related to the wider concept of environmental justice, climate debt has developed in relation to climate justice, a notion first used in the late 1980s and was picked up by the climate movement around the turn of the millennium. The US-based Corporate Watch organised a Climate Justice Summit in den Haag 2000 and inspired the adoption of “The Climate Justice Declaration” by US EJO’s in 2004 (Roberts and Parks 2009:394-395). The same year, an EJO meeting in South Africa adopted “The Durban Declaration on Carbon Trading” with the headline “Climate Justice Now!” (DGCJ 2004). This developed into a global network – see www.climate-justice-now.org/ – that was launched in Bali 2007 and has been a strong mobilising force for the payment of the climate debt, particularly around the UN conferences on climate change.

Not until 2009, in the run-up to the much-anticipated COP-15 meeting in Copenhagen, did the concepts of ecological and climate debt really come into the

mainstream of discussions as a part of the global South's negotiating platform (cf. Bond 2010). At a meeting in Bonn in June of that year, for example, Bolivia's chief climate negotiator, Angelica Navarro, demanded the repayment of the climate debt. Countries from both Latin America (e.g. Cuba, the Dominican Republic, Honduras, Nicaragua, Venezuela) and South Asia (e.g. Sri Lanka) also spoke out in favour of climate debt repayment, while Lesotho, on behalf of the world's 49 least developed countries, similarly affirmed support of the concept (TWN 2010). Also in 2009, the declaration "Repay the Climate Debt: A Just and Effective Outcome for Copenhagen" (TWN 2009a) was drafted and signed by at least 254 organisations, most of which were from the global South (TWN 2009b). According to the declaration, developed countries are actually in arrears to developing countries for a two-fold debt: an emissions debt and an adaptation debt, which together make up the total climate debt. Notably, however, this climate debt is expressly seen as only one *"part of a larger ecological, social and economic debt owed by the rich industrialised world to the poor majority"* (TWN 2009a).

After representatives at the Copenhagen meeting failed to produce any substantive outcomes, Bolivia's Evo Morales convened the People's World Conference on Climate Change and the Rights of Mother Earth, which was held in Cochabamba in April 2010. This initiative was supported by over 200 civil organisations as well as by the Bolivarian Alliance for the Americas (ALBA)-affiliated states (Bolivia, Cuba, Ecuador, Nicaragua, Venezuela). At Cochabamba, a "People's Agreement" (PWCCC 2010) was adopted, which included a fierce criticism of the UN climate negotiation process and eventually formed the basis of a comprehensive Bolivian proposal submitted to that same process a year later (UNFCCC 2010c:14-39). Climate debt is a central concept in both the "People's Agreement" and the Bolivian proposal, which characterised ongoing Northern debt accrual thusly: *"[B]y over-consuming the available capacity of the Earth's atmosphere and climate system to absorb greenhouse gases the developed countries have run up a climate debt to developing countries and mother Earth"* (Ibid:15). Significantly, the final declaration of the People's Summit in Rio+20 in 2012 states its *"recognition of the historical social and ecological debt"* (People's Summit 2012).



Figure 5

The People's World Conference on Climate Change and the Rights of Mother Earth

After the failed climate summit in Copenhagen, Bolivia's Evo Morales (in the middle) invited to "The People's World Conference on Climate Change and the Rights of Mother Earth" held in Cochabamba in April 2010. A "People's agreement" was adopted, demanding an acknowledgement of the climate debt

Photo credit: Kris Krüg / Wikimedia



concept of ecological debt lost some ground after 2009, but representatives from the small island states at the Cancun talks in 2010 introduced as a third point of negotiation to augment mitigation and adaptation the concept of 'loss and damage', which in its original form resembles climate debt (as well as the historical responsibility approach). Building on this development, the "Warsaw International Mechanism for Loss and Damage" was then introduced at COP 19 in 2013. It seems to have stalled there, however, as the meeting's final compromise saw the Warsaw mechanism relegated to a sub-position under the adaptation pillar, with no reference being made to historical liability or compensation for accrued debt. As revealed by "The Hindu" (2013), an internal briefing by the US State Department made it clear that the US government does not regard claims of 'compensation and liability' as a "*productive avenue for the UNFCCC to go down*".

To round out this brief history of the concept of ecological debt a further clarifying comment on scale is appropriate here. Since its first articulations in the 1980s, the concept of ecological debt has most commonly been used to express relations between states or groups of states at the global scale; when considering the concept more broadly, however, locally-scaled perspectives, although largely ignored in the debate, are without doubt worth acknowledging and exploring more fully. The idea is that although the extent of the ecological damages caused by the actions of a particular industrial facility often cannot be confined to national boundaries, much of the impact from such point-source polluters tends nonetheless to be localised. To this effect, Paredis et al. (2008:5) have identified a recent trend of applying the debt concept to situations in which corporations are framed as being in arrears for their environmentally and socially localised but no less harmful activities. Terming such a localised instance of ecological debt 'the private ecological debt' or 'the environmental liability' Meynen and Sebastian (2013:434) define this more limited formulation of debt as, at minimum:

The sum of all monetized ecological damages accumulated over a time in the geographically defined surroundings of a certain extraction or production unit, where the cause-effect relationship between the unit and the damages is sufficiently unique and confirmed.

Due to the controversies surrounding 'monetization' of natural resources, the above definition is contestable. Opposition to the definition can, however, be contrasted with existing international jurisprudence, as many countries—and the local actors/EJOs that work within them—now have environmental laws and institutions designed to handle such cases of localised liability that might be framed through the general concept of ecological debt. Admittedly, the potential challenges actors face in moving forward with such liability claims are enormous (i.e. lack of legislative comprehensiveness, lack of implementation capacity, lack of political will, etc.) and each particular case and country will be different, but the fact that such litigation falls now within the realm of possibility can be regarded as



at least some small progress towards broadening the concept of ecological debt through downscaling to more localised instances of socio-environmental arrears (see Peralta, 2007).⁶

What this small progress might portend for the future is by no means inconsiderable. Because the operations and influences of most EJOs is also localised, the importance of the concept of ecological debt to such actors at local and sub-national levels cannot be gainsaid. As such, the concept is immediately useful as an increasingly more powerful and recognised tool available to such organisations in their locally scaled struggles for environmental justice.

At the same time, operationalisation of the concept in this way might also more robustly connect local organisations to the burgeoning international ecological debt and justice movement, where they might find reinforcement in their struggles through such possibilities as virtual eco-justice collaboratories, jurisprudence cyber-workshops, knowledge- and experience-sharing forums, media kit templates and guidance, etc. Like this, the goal of environmental justice that is so central to the EJOLT research project can be furthered through empowerment and collaboration across multiple scales of action. At the same time, the mainstreaming of the concept to a broader audience, as with the prominent role it plays in activist-author Naomi Klein's book, "This Changes Everything" (2014), further bolsters its legitimacy and increases its recognition beyond the core of that international movement. In this way, small progress can lead to great outcomes; the organic growth of history can lead to great movements of progressive change.



Figure 6

Mainstreaming the ecological debt concept

In 2014 renowned author and social activist Naomi Klein published the book "This Changes Everything". Her interest in climate change started with a meeting she had in 2009 with Bolivia's climate negotiator Angelica Navarro who explained the concept of climate debt

Source: www.thischangeseverything.org

⁶ For an analysis of the strategies used by environmental justice organisations to economically evaluate environmental liabilities, see the EJOLT report 16 (Zografos et al. 2014).



3

Instantiating the past

From 'organic growth' to 'collaborative strategising'

Science for the sake of science is a principle grounded in a past often marked by centrism and inequity. Science today must be understood more broadly and made more useful to more people in the world, especially in this time of rapidly mounting global degradations and injustices. The action research that EJOLT represents aims to make science more useful to more people in part by establishing greater reciprocities and collaborations between theorisation and practice. We believe that this aim can be better met by synergising the 'activist knowledge' practitioners generate in their work and the standardised methodologies and theoretical understandings of academics.

An important task in thus fashioning such an activist-academic dialectic within the context of this paper is to relate briefly and in broad strokes the current state of both knowledge types in terms of their arguments for ecological debt. Our hope is that framing these diverse types of knowledge in this way will initiate a more enduring and fluid correspondence between them that will continue into the future. By better understanding one another, in terms of both strengths and weaknesses, a collaborative framework that grounds the best aspects of how civil organisations and academic institutions approach knowledge generation can be built in pursuit of the shared goal of ecological justice. The development of such a framework might provide a solid basis for moving forward in achieving the broader goals of the EJOLT research project.

3.1 The activist Ecological Debt argument

Despite the concept of ecological debt's organic growth as recounted above, it has always retained a stable conceptual core. Sociologist James Rice (2009), in applying argument analysis to eight NGO policy papers that advocate for the

ecological debt concept, describes the rhetoric of these papers as representative of the stability of this core through their “*counter-hegemonic discourse calling for a fundamental reappraisal of North–South political and economic relations*” (Ibid: 249). In his analysis, Rice identifies four primary claims that underlie the eight NGOs’ arguments in advocating for the ecological debt concept. Instead of conducting another analysis of the EJO arguments, the following is based on Rice’s study.

The first and most fundamental claim made in these policy papers is of the existence of a **socio-ecological subsidy**:

Northern historical development and present production and consumption levels are reliant upon a socio-ecological ‘subsidy’ imposed on Southern countries. The socio-ecological subsidy refers to the underpayment and, at times, explicit looting of the natural resource assets and labor power of Southern countries (Idem: 233).

This subsidy, which began in the colonial era and continues unabated even today, not only enriches the North but also “*impoverishes and degrades the land, culture, and development potential of Southern countries*”. Supporting this claim are correlations between environmental degradation and trade relations with the North as well as data on the North’s disproportionate use of the global commons. Important warrants, linking the data to the claim, are theories of ecologically unequal exchange and deteriorating terms of trade (e.g. prices of Southern export commodities falling as a result of increased competition). Another aspect of this socio-ecological subsidy is the North’s appropriation of a disproportionate share of the global sink-capacity through its vast greenhouse gas emissions (Idem: 234-235).



Figure 7

Ecological debt as an impoverishing socio-ecological subsidy

According to the activists, the ecological debt is the result of a socio-ecological ‘subsidy’ imposed on countries of the South. This global inequality is also illustrated by Jens Galschiøt-s and Lars Calmar's sculpture *Survival of the fattest*

Photo credit: Wikimedia



The second claim made by NGO advocates of the ecological debt concept concerns **cancellation of the South's external financial debt**. External debt is viewed as the “*fulcrum whereby the current development model entrenches the continuance of the socio-ecological subsidy*” (Idem: 237). In order to repay their debt, Southern countries are forced to accelerate extraction and export of their natural resources, which, as the same development model is forced upon all debtors simultaneously, tends to reduce the price of these resources on the world market and thereby leads to further intensification of extractive efforts. In a truly vicious circle, therefore, external debt repayment is shown actually to lead to an increase in the ecological debt claim of the South against the accounts of the North. The call for external debt cancellation should, consequently, not be seen as a benevolence conferred upon the developing world but as an obligation for the whole world if real action is going to be taken against ongoing ecological and social degradations. Whatever the monetary value of such continued degradation might be, it is likely many times higher than the financial debt now owed to the North (Idem: 237-238). Framed in this way, the arrow of arrears can again be shown to be reversed through the ecological debt concept.

.....

In a truly vicious circle external debt repayment is shown actually to lead to an increase in the ecological debt claim of the South against the accounts of the North

.....

The NGO advocates' third claim is that **present levels of Northern production and consumption are unsustainable** over the long term, especially since they are founded on the socio-ecological subsidy of the South. In this way, the neoliberal development model can be shown to be at the root of not only the impoverishment of the global South but also of the global ecological crisis. One implicit target of this claim is the reductionism of neoclassical economics, with its tendency to overlook the socio-ecological subsidy and insist “*on quantifying everything according to a monetary metric*” (Idem: 240).

The fourth claim collectively made by the NGOs is that **the ecological debt must be paid**. As Rice argues, “*equity for present and rational obligations to future generations demands Northern countries begin paying back the accrued socio-ecological subsidy, an obligation that can be defined as an 'ecological debt'*” (Idem, 241). Closing the Northern account and alleviating the debt, it is argued, is not only a matter of justice but could also be a first step in avoiding the anticipated collapse scenario of the current development model. It would also represent a move towards a more sustainable model of social organisation. As such, this claim amounts to a moral demand, presenting a clear alternative to the neoliberal worldview. Towards this goal, a first action might be the immediate cancellation of the South's external debt followed by—in actively reversing the arrow of arrears—the implementation of a much needed structural adjustment of the North, an adjustment towards a way of life that is sustainable for all (Idem: 244).

3.2 Academic conceptualisations of Ecological Debt

Concurrent with the organic growth of the concept among civil and activist organisations, ecological debt has also increasingly garnered widespread support and legitimacy within academic circles. Indeed, academic investigations have for



the most part attempted to more formally develop the claims of NGO advocates, linking ecological debt to quantifiable tools within economics, material flows and environmental resource accounting. Two significant contributors to the development of our understanding of ecological debt have come from economic historian and ecological economist Joan Martinez-Alier at the Autonomous University of Barcelona and a group of Belgian researchers led by Erik Paredis at Ghent University.

According to Martinez-Alier (2002), ecological debt is an economic concept that arises from distribution conflicts of two kinds. The first is ecologically unequal exchange, which can be defined as *“the fact of exporting products from poor regions and countries, at prices which do not take into account the local externalities caused by these exports or the exhaustion of natural resources, in exchange for goods and services from richer regions”* (Ibid: 214).

This concept has its roots in a structuralist world-systems analysis with a Marxist-inspired, heterodox economic view of world trade. Through it, world trade is seen as unjust because of power relations that enable core nations to establish oligopolies and impose deteriorating terms of trade upon 'developing countries' at the periphery of the system. In the 1980s and 1990s, political ecologists adopted this framework for analysis, broadening it to include not only its traditional social and economic factors but also introducing as a factor the ecologically devastating aspects of the unequal exchange between the global North and South (cf. Bunker 1985, Altvater 1993, Hornborg 1998, 2011). The second conflict leading to ecological debt according to Martinez-Alier arises in the tendency of wealthy countries to disproportionately utilise environmental space without paying for it. This tendency primarily refers to the use of carbon sinks and is an important factor in the accrual of carbon or climate debt. Based on Martinez-Alier's understanding (though over-simplistically stated), ecological debt can therefore be described as the cumulative result (or stock) of ecologically unequal exchange (flows), plus carbon debt.

Significantly, the primary components of Martinez-Alier's conceptualisation of ecological debt can be traced through the very real social and ecological instances of injustice that are manifest around the modern world. Ecologically unequal exchange, for example, is seen to emerge in the (unpaid) costs of reproduction or maintenance or sustainable management of renewable resources that have been exported from the peripheries of global South. It is also discernible in the costs of the future unavailability of destroyed, non-renewable natural resources as well as in the paltry compensation for, or (unpaid) costs for reparations of, the local damages produced by exports or the present value of irreversible damage. Finally, ecologically unequal exchange can also be seen to appear in the (unpaid) amount of the commercial value of appropriated genetic resources. As for the disproportionate use of environmental space, two important manifestations (a by no means comprehensive list) in the world are notable: the (unpaid) reparation costs or compensation for the impacts caused by imports of toxic waste, and the (unpaid) costs of free disposal of gas residues (GHGs and other kinds of air pollution), assuming equal rights to sinks and reservoirs.



Martinez-Alier admits that quantifying ecological debt in monetary terms is knotty but emphasises that the point is to “consider that the external debt from south to north has already been paid on account of the ecological debt the north owes to the south” (2002:233), implying that a detailed line-up of ecological debits and credits is perhaps neither possible nor necessary. To those critical of the very idea of monetizing nature's services, he entreats, “*mea culpa. My excuse is that the language of chrematistics⁷ is well understood in the north*” (Idem, 228).

The most comprehensive synthesis of earlier analyses of ecological debt, as well as one of the most detailed attempts at quantifying the concept, has been undertaken by a group of Belgian scholars led by Erik Paredis at Ghent University. In their 2008 book “The Concept of Ecological Debt: Its Meaning and Applicability in International Policy”⁸ (Paredis et al. 2008), they survey existing literature, advance a synthesis definition (see below), propose methodological and theoretical building blocks and discuss ecological debt's status in international environmental law. They also meticulously calculate two parts of Belgium's ecological debt: 1) that accrued from its use of energy and consequent contribution to climate change, and 2) that from its agricultural production and food supply. The primary aim of their research is to remedy some of the weaknesses they have identified relating not to the concept as such but to the operationalisation of the concept. As Paredis and his colleagues argue:

The reality of ecological debt cannot be denied: the historical and current ecological damage experienced by other countries and global ecosystems caused by industrialized countries and the overuse of ecosystem goods and services are amply documented. Besides, the concept . . . [is] a potentially powerful tool for reviewing North and South relations or rethinking sustainable development policies (IX)

Moreover, the authors argue that a more precise working definition of ecological debt must be drafted if current weaknesses that they have identified in the concept are to be overcome. They conclude by submitting the following definition for general consideration:

The ecological debt of country A consists of

1. the ecological damage caused over time by country A in other countries or in areas under the jurisdiction of other countries through its production and consumption patterns, and/or

⁷ Thought to have been originally introduced by Thales (5th century BCE), chrematistics can be defined as the art of getting rich. Aristotle's usage of the term is better known, however, mainly in its being posited as the ethically reprehensible diametric to necessary economic activities, “*oekonomia*”.

⁸ The 2008 book was first published as a report (Paredis et al. 2004). Only the book will be referenced here.



2. the ecological damage caused over time by country A to ecosystems beyond national jurisdiction through its consumption and production patterns, and/or
3. the exploitation or use of ecosystems and ecosystems goods and services over time by country A at the expense of the equitable rights to these ecosystems and ecosystem goods and services of other countries or individuals (Paredis et al. 2008:149).

The two key concepts in Paredis and his colleagues' working definition are 'ecological damage' and 'use at the expense of the equitable rights of others'. In these terms, an ecological debt can be said to have accrued when one country causes ecological damage in another country or to the global commons. Accrual can also be said to have occurred in situations where disproportionate use has been made of ecosystem services that could otherwise have been reasonably assumed to be shared equally by all on the earth. This definition notably echoes Martinez-Alier's conceptualisation of the two distributional conflicts that lead to the accrual of ecological debt, where the first—the cumulative effects of ecologically unequal exchange—consists of ecological damage, and the second—disproportionate use of the global commons—results in situations of “*use at the expense of the equitable rights of other countries*”.

3.3 Theoretical building blocks for ecological debt

The development of ecological debt as a concept of consequential use to a burgeoning movement will require that its ongoing organic growth be somewhat tempered by the development of a solid theoretical foundation from which both activists and academics can draw and to which they can refer regardless of where they work and struggle for justice in the world. This is not to say that the concept's growth should be stultified; indeed, it should not be. But moving forward into the future, it does need to be channelled appositely. In order to strengthen the scientific foundations of the concept in this way, Paredis et al. (2008:72-81) have thus proposed that ecological debt be recognised as resting on four theoretical building blocks.

An ecological debt can be said to have accrued when one country causes ecological damage in another country or to the global commons

First, a rich theoretical tradition of **biophysical accounting systems** already exists and can be readily tied in to the ambitious project of measuring trade flows in non-monetary, ecological terms. The relevance of these accounting methods are largely justified through the theories of **ecological economics**, which is the second theoretical building block recommended by Paredis et al. Ecological economists have long used biophysical accounting systems as a complement to the monetary focus of conventional economics in order to account for nature and ecosystems—or, more frankly, to illuminate the fundamental un-sustainability of



industrial capitalism that is largely obscured by conventional economics (cf. Martinez-Alier 1990).⁹

A third important foundation for the ecological debt concept comes from theories of **environmental justice and human rights**. Although the roots of ecological debt are (primarily) in Latin American environmentalism, anti-colonialism and the struggle for debt relief, the analysis bears striking resemblance to the thinking of (primarily) North American environmental justice/environmental racism grassroots movements. These movements focus on how the distribution of ecological burdens are indurated by historically constituted power relations (Bullard 1990) and often frame them as questions of human rights. Justification of ecological debt can also draw on theories and cases of **historical injustices and restitution**, the fourth conceptual foundation for ecological debt as identified by Paredis and his colleagues. There are cases—such as with war crimes, genocides and ecological disasters—in which debts have been acknowledged as having arisen even when no previous contract had been drafted (Paredis et al. 2008:73-82, cf. Martinez-Alier 2002:228), bolstering the argument for the existence of an ecological debt.

In his sympathetic critique, Rice (2009:248-249) proposes an additional, fifth theory on which to further build the debt concept: a broad, ecologically-oriented **world-system analysis framework**. World-system analysis was developed mainly by Immanuel Wallerstein in the 1970s and was reenergised by political ecologists from the 1980s and onward. It has continued to ground relevant research on ecological and social dimensions of unequal exchange and uneven development within the world system (for overviews, see Roberts & Parks 2007:165-169; 2009).

⁹ One could argue that biophysical measures is an integral part of ecological economics, but the division of them into two theories is preferred by Paredis et al. 2008.

4

Illustrating the present

Three cases applying the concept of Ecological Debt

The five theories mentioned in the section afore are distinct yet closely related to ecological debt. They are all useful but not individually capable of illustrating the particular, historical injustice that ecological debt is exposing. Since they are more acknowledged by the scientific community, a further application of them on the field of ecological debt can however be used to sophisticate and legitimise the ecological debt concept. That is not to say that ecological debt and similar concepts have not already been utilised practically; quite the opposite is true.

Illustrations of how these concepts have been used until now not only further demonstrate their value as tools in the pursuit of justice but also helpfully provide cases to which both activists and academics can refer and upon which they can build in developing their own theories and projects, in making the change of the future a reality now. In this regard, what follows are brief descriptions of three distinct cases touching on how ecological debt has been or is being utilised: as a particular type of biophysical measure within sustainability science and ecological economics, as a legal tool within international environment law, and as a distributional principle within political theory.

4.1 Case I. Ecological Debt as a biophysical measure

A methodological pillar of the ecological debt movement, the rich theoretical tradition of biophysical accounting has existed for more than half a century. The robustness of this tradition is evidenced, for one example, in how Georg Borgström's coinage of the term 'ghost acreage' in 1965 is now regarded as the forerunner both to Hans Opshoor's development of the concept of 'environmental space' (Spangenberg 1995) and to Rees and Wackernagel's (1992) formulation of 'ecological footprints'. Since then, new methods have also been developed that,



for instance, now enable researchers to estimate a society's social metabolism, such as through material (and sometimes energy) flow analyses (Fischer-Kowalski 1998) as well as to measure human appropriation of net primary production, HANPP (Vitousek et al. 1986, Haberl et al. 2007), energy returns on energy investments (EROI) (Hall, Cleveland & Kaufmann 1986) Environmental load displacements (Muradian, O'Connor and Martinez-Alier 2002) and time-space appropriations (Hornborg 2006).¹⁰

Ecological debt and carbon debt have, respectively, also more and more often been directly applied as biophysical measures. Azar and Holmberg (1995), Jenkins (1996), Smith (1996), Torras (2003) and Paredis et al. (2008), for example, have all made ambitious attempts to quantify portions of the North's ecological debt. The research of Srinivasan and his colleagues (2008), however, has arguably been the most compelling to date (see **box 4**)

Box 4 Rich nations owe the poor \$1.8 trillion dollars in Ecological debt

Source: Own elaboration

Srinivasan et al. set out to quantify, in monetary terms, the ecological debt that rich nations owe to the poor. In their 2008 article, they estimate the environmental costs of human activities from 1961 to 2000 for six major categories—climate change, stratospheric ozone depletion, agricultural intensification and expansion, deforestation, overfishing, and mangrove conversion—and how the driving forces and damage impacts of these activities are distributed among low-, middle-, and high-income nations. Their findings reveal striking imbalances in the distribution of damage impacts, with low-income nations bearing a far greater portion of social and environmental costs that even today are overwhelmingly driven by the other two groups' activities.

In interpreting these findings, Srinivasan et al. conclude that the mounting climate damages impressed upon poor nations will in the end far exceed the current foreign debt (USD 1.8 trillion) of those nations. As Prof Richard Norgaard at the University of California, Berkeley, one of the study's co-authors, explained in *The Guardian* (2008): "At least to some extent, the rich nations have developed at the expense of the poor and, in effect, there is a debt to the poor /.../ That, perhaps, is one reason that they are poor. You don't see it until you do the kind of accounting that we do here." Again, the arrow of arrears is reversed with a broader framing of such analysis.

To estimate total ecological debt is complicated, however. Researchers have found that the more limited task of calculating carbon or climate debt is far easier due to the greater accessibility of pertinent data. Such analyses are also highly relevant because of the increasing sense of urgency that surrounds the climate crisis and because the carbon debt has been shown to compose the largest portion of the total ecological debt (Martinez-Alier 2009:59; Simms 2009:83).

Although several of the above mentioned publications include carbon debt in their wider calculations of ecological debt, specific calculations of carbon debt have been performed by Botzen, Gowdy and van den Bergh (2008) as well as by several NGO initiatives, including Simms, Meyer and Robinson (1999), FOEI (2005), the Jubilee Debt Campaign (2007), Christian Aid (2009), Simms (2009), Action Aid (2009) and TWN (2009c). Furthermore, Bolivia has submitted such debt calculations to the UNFCCC (2009, 2010c), while other calculations have

Estimating total ecological debt is complicated; calculating carbon or climate debt is far easier due to the greater accessibility of pertinent data

¹⁰ Several of these concepts (and many others) are explained in the EJOLT online glossary, see <http://www.ejolt.org/section/resources/glossary/>.

also been compiled by international institutions such as the UNDP (2007/2008) and the UN (2009). Inclusion of papers on the closely related notion of historical responsibility for climate change would only lengthen the list, including the 1997 Brazilian proposal to the UNFCCC, and articles by Enting and Law (2002), den Elzen and Schaeffer (2002) and Müller et al. (2009).¹¹

A synthetic proposal for calculating climate debt was made by Warlenius (2012) and applied to 154 states. Here, debt is calculated in gigatons of carbon dioxide and not converted into monetary terms. Following Paredis et al. (2008: 152-159), climate debt is in this way seen as being composed of two distinct factors: generational debt, which consists of unsustainable emissions and is owed to future generations; and historical debt, which consists of unfair emissions (e.g. in relation to the equitable rights of others) and is owed to low-emitting countries. In 2008, for example, the inhabitants of the North composed only 18.8 per cent of world population but was accountable for 72.7 per cent of global CO₂ emissions since 1850. Based on these numbers, per capita debt is 594 tons of CO₂, which is roughly equivalent to 46 years of per capita emissions on 2008 levels. Of total emissions, therefore, 60 per cent can be said to have been unsustainable and thus comprises the generational debt, which on this level of abstraction accounts for the vast bulk of the total climate debt (see **table 1**).

Item	World	North ⁱ	South ⁱⁱ
a. Emissions from 1850-2008 (GtCO ₂)	1209.0	878.6	330.4
b. Share of emissions (%)	100	72.7	27.3
c. Population ratios ⁱⁱⁱ (%)	100	27.7	72.3
d. 'Sustainable' emissions ^{iv} (GtCO ₂)	477	132.1	344.9
e. Total climate debt (a-d) (GtCO ₂)	732	746.5	-14.5
f. Historical climate debt (GtCO ₂)	0	14.5	-14.5
g. Generational climate debt (GtCO ₂)	-732	732	0
h. Total climate debt per capita ^v (tCO ₂)	128	594	-3.7

Table 1

Calculation of the climate debts of 'North' and 'South'

- i Annex 1 excluding Iceland, Lichtenstein, Luxemburg, Malta, Monaco, Slovenia.
- ii The remaining countries in the study after subtraction of Annex 1 states.
- iii Average of 1870, 1950 and 2000 rates of world population
- iv 3 Gt*159 years/share of pop.
- v Based on population 2008

Source: Warlenius 2012

4.2 Case II. Ecological and Climate Debt as legal Instruments

The aspect of ecological debt that has received most scholarly attention to date from a legal perspective is climate change. Some legal scholars argue that at some point *"there will be a general obligation of industrialised nations under international law to compensate developing nations for damage resulting from anthropogenic climate change"* (Tol and Verheyen 2004:1109). Although many

¹¹ For an overview of the historical responsibility argument within the UNFCCC negotiations, see Friman 2013.



problems must be solved before such an outcome can occur and many more problems need to be addressed before the broader concept of ecological debt will be viewed as a legitimate legal instrument, numerous principles already in place provide the foundation for such developments. To be sure, certain principles and concepts used in Multilateral Environmental Agreements (MEAs) and in international legal practice more generally already bear striking resemblance to ecological debt. In their survey of current MEAs, for example, although Paredis et al. (2008:89) found no direct reference to ecological debt, they did extract several concepts directly from the major MEAs that might provide the foundation for the emergence of climate and ecological debt as legal instruments. Several examples are as follows:

- **The principle of common but differentiated responsibilities (CBDR)** was first introduced in the Rio Declaration of 1992 (UNCED 1992 [Principle 7]) but can be traced even further back to the Stockholm Declaration (UNCHE 1972 [Preamble Point 7]) twenty years earlier. Even today, it is commonly referred to in many MEAs. The primary link between CBDR and ecological debt is through the acknowledgement of historical responsibility of industrialized countries for worldwide environmental problems, a postulate that implies that developed countries have an obligation to take more far-reaching measures than developing countries in responding effectively to such problems (Paredis et al. 2008:89-90);
- **The principle of intra- and intergenerational equity** is also part of the original Rio Declaration (UNCED 1992 [Principle 3]) and has its roots in the Stockholm Declaration (UNCHE 1972 [Principles 1 & 2]). It is also found in the UNFCCC, CBD and UNCCD. It emphasizes that development cannot be based on short-term ends but must also encompass and ensure protection of the environment for present and future generations. Just as with ecological debt, it addresses the problems caused by unsustainable production and consumption patterns and promotes policies for restitution of past degradations (Paredis et al. 2008:91);
- **The polluter pays principle (PPP)** is at this point sufficiently well-established in MEAs to be considered as a general principle of international environmental law. First adopted by OECD in 1972, it is referred to in numerous environmental treaties, such as the Rio Declaration and UNEP, and within European as well as the national legislation of many countries (Roberts & Parks 2007:146). Its main link to ecological debt is its allocation of economic obligations for activities that are damaging the environment, with prevention as an important and inherent aspect (Paredis et al. 2008:93; UNCED 1992 [Principle 16]);
- **The Adaptation Fund under the Kyoto Protocol**, which is funded by a 2 per cent levy on Clean Development Mechanism (UNFCCC 1998 [Article 12]) projects and thus financed by developed countries, is used for projects in developing countries. Some consider it the first step in repaying the carbon debt (Paredis et al. 2008:94); and

- **The Convention on Biological Diversity** (UNCBD 1992 [Article 1]) establishes the principle of equitable benefit sharing, which states that commercial use of certain natural—genetic—resources should be shared in a fair and equitable way with the country providing those resources. In terms of the concept of ecological debt, equitable compensation for extraction and use of such resources should be made.



Figure 8

Oil pollution in the Niger Delta

Ecological debt has been used in litigation processes, such as in the “*Kiobel v. Royal Dutch Petroleum*” case where Nigerians suffering from the devastating pollution caused by Shell’s oil production have claimed their rights

Photo credit: Lucie Greyl

Grounded in the idea that contemporary international law is not enough, Pigrau et al. (2014) argue for a more holistic approach that advocates a reinterpretation and reconstruction of the current international order in terms of global constitutionalism, Third World Approaches to International Law and an enhanced human rights approach in order to address ecological debt and environmental justice. They also envision increasing participation from the civil society and points out that already the 1992 “Debt Treaty” identified a legal strategy: “*Work with jurists and lawyers to establish regulations and legislation on international transactions; put pressure to make them binding to nations and to corporations*” (qtd. in Ibid.:72). Several elaborations remain before the concept is legally operationalised, such as debtor and creditor identification, definition of damage and the content of repair, damage identification and determination of causal relationship, identification of relevant ecosystems, and the definition of equitable rights corresponding to country or individuals (Idem: 27). Nonetheless, the authors argue that the main obstacle for operationalisation is political: “*the necessary*



political conditions for opening up a formal debate about the concept in inter-governmental forums do not exist” (Idem:102-103).

In their study, Paredis et al. also evaluate the main obstacles blocking acceptance of ecological debt as a framework in international environmental law and possible strategies for overcoming these obstacles. Among other things, they point out that most of the links established thus far between ecological debt and legal praxis have been future-oriented and mainly focus on pollution and environmental damage. Ecological debt is, however, a highly retroactive concept, and besides pollution it also regards the use of natural resources without equitable compensation as part of the debt—a framing of resource use that hardly figures at all in current environmental law (Idem: 111-112).

Importantly, other legal strategies beyond those seeking to develop the debt concept as a legal instrument also exist, providing relatively untested options for utilising the concepts of ecological and climate debt to achieve the end of ecological justice through litigation. For example, several attempts have been made to stop the environmentally harmful activities of transnational companies by filing lawsuits under the U.S. Alien Tort Claims Act (ATCA). Though still holding some promise, this approach *“has not proven to be a very good basis for securing compensation for environmental claims”* (Paredis et al. 2008:106), a position that was firmly reinforced in 2013 when the US Supreme Court unanimously held in an opinion joined by five justices (with several concurrences underscoring differences in reasoning) that the presumption against extraterritoriality applies to claims under the Alien Tort Statute and that nothing in the statute rebuts that presumption (Kiobel v. Royal Dutch Petroleum Co., 133 S.Ct. 1659 (2013)).¹² By appealing to the language of rights, this legal perspective is related to the approach of environmental justice as human rights, confirming that this established legal discourse can be used to strengthen the moral claims of ecological debt, as mentioned in **section 3.3**.

Box 5 Environmental justice through litigation

Source: Own elaboration

All over the world, people suffering from environmental harms seek redress through litigation. In EJOLT report no 4 – “Legal avenues for EJOs to claim environmental liability” (Pigrau et al. 2012) eleven cases are presented and the legal strategies used analyzed. Famous cases include the Chevron-Texaco pollution in Ecuadorian Amazonas and the Shell oil spills in the Niger Delta. In these cases, the accused parts are corporations in the North and one important conclusion is that EJOs use all types of political and legal avenues: national or international, territorial or extra-territorial, for seeking to hold the perpetrators accountable. EJOLT report no 9 – “Digging deep corporate liability” (Geyl et al. 2013) – focus on strategies for prosecuting oil companies and deepens the case of Niger delta in particular.

¹² After assessing several legal attempts by NGO's to accrue the ecological debt through litigation, Patrick Bond (2010:287) has come to the following conclusion: *“There are quite obvious limits to prospects for court relief under the Alien Tort Claims Act or NEPA, the two most advanced areas. Hence it would be consistent to also proceed with more immediate strategies, as well as direct action tactics.”*



As pointed out in the “Financial Times” by professor Jagdish Bhagwati (2010) the concept of strict liability is however inherent in U.S. Superfund legislation, according to which hazardous waste must be cleaned up by responsible companies *“even if the material discharged was not known at the time to be hazardous (as carbon emissions were until recently)”*. A clear analogue to current climate negotiations, Bhagwati’s raising of this point intimates how continued refusal by the US to accept any liability for its historical emissions is directly incongruous with its own legal precedents let alone of those that have at this point become more or less standard internationally.

Another strategy for those seeking to develop the debt concept as a legal instrument has been to address environmental harms as abuses of human rights. For instance, the African Commission on Human and Peoples' Rights (Communication 155/96 2001) has stated that while involved in irresponsible oil extraction in the Niger Delta the former military regime of Nigeria violated the rights of the Ogoni people with regard to health and a healthy environment. According to the recommendations of the commission, the new civilian government should compensate the victims, clean up their lands and rivers, and make sure environmental and social impact assessments are made a part of future extractive operations (Paredis et al. 2008:107; cf. Pigrau et al. 2014:75-87).

The legal perspective is related to the approach of environmental justice as human rights. This established legal discourse can be used to strengthen the moral claims of ecological debt

Finally, a promising tendency, famously noted by Barkan in “The Guilt of Nations” (2000), is the growing state practice of providing restitution for historical injustices. To date, most cases—such as German reparations to Jewish survivors of the Holocaust, the letter of apology and USD 20,000 paid to each Japanese-American held in internment camps, and the humanitarian fund provided by the Swiss Government for Holocaust victims who invested their money in Swiss banks—have at this point been rooted in atrocities committed during World War II. Other cases have considered the consequences of colonialism, such as with the acknowledgement of land rights for Aboriginals in Australia and with British apologies to the Maori in New Zealand. As Paredis et al. speculate (2008:113), *“the question is whether the concept of ecological debt could one day become part of this growing moral trend”*.

4.3 Case III. Ecological Debt as a Distributional Principle

The dominant practices of the contemporary Realpolitik were lucidly reflected during the 2009 Copenhagen Climate Summit in a statement by the US Special Envoy for Climate Change Todd Stern: *“We absolutely recognise our historic role in putting emissions in the atmosphere, up there, but the sense of guilt or culpability or reparations, I just categorically reject that”* (Reuters 2009). Stern’s sharp statement is suggestive not only of the global North’s reticence in acting to rectify the various harms of its historical practices. It also suggests that, just as with legal practices, ecological debt-related issues have to some degree been discussed in recent years without directly referencing the concept itself.



As such, ecological and climate debt can be seen as issues of distribution, both spatially and temporally. In this way, especially within the growing field of environmental political theory, different distributional principles for future allocations of climate change burdens have been proposed and discussed. One such principle that conceptually resembles climate debt has been referred to alternatively as 'polluter pays', 'contributor pays', 'historical accountability' or 'responsibility'. There has actually been a "*surprising convergence of philosophical writers on the subject*", according to one of the most prominent of them, Stephen M Gardiner (2004). As Gardiner continues, these writers "*are virtually unanimous in their conclusion that the developed countries should take the lead role in bearing the costs of climate change*", the main reason for which being that those countries are responsible for the bulk of historical emissions.

Two important articles that are illustrative of this consensus in favour of historical responsibility in a future allocation scheme are Henry Shue's "Global Environment and International Inequality" (1999) and Eric Neumayer's "In Defense of Historical Accountability for Greenhouse Gas Emissions" (2000). Shue starts off with an oft-quoted analogy:

All over the world parents teach their children to clean up their own mess. This simple rule makes good sense from the point of view of incentive: if one learns that one will not be allowed to get away with simply walking away from whatever messes one creates, one is given a strong negative incentive against making messes in the first place. Whoever makes the mess presumably does so in the process of pursuing some benefit—for a child, the benefit may simply be the pleasure of playing with the objects that constitute the mess. If one learns that whoever reaps the benefit of making the mess must also be the one who pays the cost of cleaning up the mess, one learns at the very least not to make messes with costs that are greater than their benefits (Shue 1999:533).

Shue then formalises this analogy in a first principle of equity: "*those who have been unilaterally put at a disadvantage are entitled to demand that in the future the offending party shoulder burdens that are unequal at least to the extent of the unfair advantage previously taken, in order to restore equality*" (Ibid:534). Neumayer (2000:187-188), while holding to Shue's articulation of this ethical argument in favour of historical responsibility, which he refers to as "*the principle of equality of opportunity*", also adds two further supports: science is indisputably on the side of historical accountability in that global warming is a consequence of greenhouse gases accumulated over time, and the long precedented legal principle that the polluter pays must be conformed to in allocation schemes based on the argument of historical accountability.

Some objections to the idea of historical accountability have been raised. In **box 6**, these arguments are answered, mainly following Henry Shue's line of arguments (1999:535-537).

Developed countries should take the lead role in bearing the costs of climate change, because they are responsible for the bulk of historical emissions



Box6 Pro and contra arguments on ecological debt

Source: Own elaboration

C1 [Counter argument 1]: Poor countries have also benefited from the enrichment of the developed countries. Even though they might have been harmed originally, they are now able to catch up thanks to the development. Therefore, no ecological debt has arisen.

P1 [Pro argument 1]: Whatever benefits poor countries have received, and in most cases they are few, they have been charged for. Import commodities are paid for, technologies are patented and export markets surrounded by customs duties. Any development has occurred in spite of, not thanks to, the ecological debt.

C2: Any historical environmental damage done by rich countries was unintentional, and people cannot be held responsible for harmful effects they could not have foreseen.

P2: This argument rests upon a false equivalency between punishment and responsibility—it is indeed common to hold people responsible for the unintentional or unforeseen effects of their actions, though it would be unfair to be punitive as well. If one unintentionally crashes his or her car into someone else's car, we expect compensation for harms done, but not punishment. The same with the ecological debt.

C3: It is unethical to hold people responsible for damage that they have no direct relation to. Holding the current generation responsible for carbon emissions caused by earlier generations is therefore unfair.

P3: The argument is not wrong but inapposite because today's generation of people who live in industrialized countries are anything but unrelated to the emissions of earlier generations. This generation is the beneficiary in many aspects of their daily lives of earlier industrial activity. Statistics show how contributions to climate change explain two thirds of the variation in per capita GNP in 1990 (Neumayer (2000:189). If they accept the benefits of an early industrialization, they ought to also take responsibility for the negative consequences

The premise for the third counterargument in **box 6** is that generations today continue to benefit from earlier periods of industrialisation. As has been pointed out recently (Godard 2012:12), however, such benefit is sometimes uncertain and possibly over-estimated. Shue does not reflect on the consequence for his argument of the industrial degeneration of a country like Ukraine, which has a massive responsibility for climate change from its past industrial activities even though the benefits its people receive from historical emissions largely vanished with the hard economic times Ukraine has faced for over twenty years now beginning with the fall of the Soviet Union. In this case, holding Ukraine accountable for past emissions that in no way benefit present generations in deciding its current climate burden allocation may be unjust. This situation is discussed at length in Warlenius (2013), whose tentative conclusion is that cases of declining, de-industrialised economies point to the need to move away from 'pure', strict liability approaches to calculating climate debt by taking into consideration the fundamental difference between 'subsistence emissions'—emissions that are the result of activities necessary for providing basic needs such as food production—and 'luxury emissions' (cf. Agarwal and Narain 1991, Shue 1994, Vanderheiden 2008). The former is considered a basic right, so arguably only the latter should be taken into consideration in allocation of historical responsibility within a future burden sharing system. According to this proposal, Ukraine's historical record of emissions would thereby be expunged and some of its current emissions allowed for free (Warlenius 2013:41).



5 Final considerations on EJO utilisation of the ecological debt concept

According to sociologist James Rice (2009), there are “*several advantageous characteristics of ecological debt as a tool for promoting a reconceptualisation of North-South political-economic relations*”; as this report has shown, such advantageous characteristics might together further the struggle for environmental and social justice in the world. It can do so in several important ways.

First, the ecological debt concept acknowledges the interconnections between society, nature and economy that are so often held as separate, irreducible objects within social science and policy making. Second, it brings a historical dimension to discussions of sustainability and climate change, illuminating how present divides and challenges are derived from long-term processes of capital accumulation. Third, it does not appeal to charity or aid to settle the external debt crisis but instead reframes the cancellation of external debt as a moral obligation. Finally, it holds the potential to “*convey a new voice within the arenas in which international development concerns are debated . . . a voice united by common experiences and highlighting the social and environmental contradictions expressed within Southern countries that advocates of neoliberal globalization arguably overlook*” (Rice 2009: 246).

In the preceding section, three applications of the ecological debt concept was discussed: as a biophysical measure, as a legal tool, and as a distributional principle. They are all important in their own right for claiming environmental justice. Assessing the quantitative size of the debt is important *inter alia* because it turns a strong moral argument into a distinct measure, a hard-to-deny fact. It is

Assessing the quantitative size of the debt is important: It turns a strong moral argument into a distinct measure, a hard-to-deny fact; It is also an important ground for claims on repayment



also an important ground for claims on repayment. Investigating the interconnections between ecological debt and legal practices is important since it shows that it is not alien to established law, and is a necessary first step for seeking redress through the court system. Finally, strengthening the ethical foundation of ecological debt as a distributional principle is important for gaining political support for the idea, both from the public, institutions and states.

Box 7 Calculations of the Ecological Debt – What are they for?

By Joan Martínez-Alier

The first principle of the Ecological Debt is that those who claim repayment of it do not want the Ecological Debt to increase any further. It is large enough as it is, whatever number we put on it.

There is a similarity to large historical moral debts. Should descendants of slaves be compensated for the terrible damage done to their families? Yes, perhaps, but such compensation in no way would allow slave traders to start anew. It is not like the 'polluter pays principle', you pay and you pollute. If the German state after 1945 paid compensation to the relatives of the victims of terrible atrocities, this does not erase the moral debt. It does not allow incurring in similar behaviour again. It is not at all as paying off your mortgage to the bank and getting a fresh mortgage. The difference is that in such cases money is a token of recognition of guilt.

Something similar applies to the calculation of environmental liabilities of companies such as Chevron Texaco in Ecuador, Rio Tinto in Bougainville, Shell in the Niger Delta. If you bring the companies to court (in a civil suit for damages) you have to submit a calculation of the liability. The civil suit could be complemented by a criminal case to try to send those responsible to jail. Money could be used for reparations but in no way would such payments for the liability allow the company to do the same thing again.

In the same way, in order to force recognition of historical responsibility, culpability and guilt, calculations have been made of the climate debt or the carbon debt. One of the first by done by economist Jyoti Parikh in 1995 and it is still relevant. She calculated the savings made by rich countries per year by not making the reduction in emissions they should make.

Countries which historically have produced and continue to produce more carbon dioxide per capita than the rest have a carbon debt. In 1995 average global emissions were about one ton of carbon per person per year (equivalent to 3.7 tons of carbon dioxide). There were six billion people. Industrialized countries produced three-fourths of these emissions, instead of the one-fourth that would have corresponded to them on the basis of population. The difference was 50 per cent of total emissions, some 3,000 million tons of carbon at the time. Large reductions of emissions had to be made urgently to stop the accumulation of carbon dioxide in the atmosphere. It was the rich who had to do the reductions, not the poor. Contemplating the increasing marginal cost of reduction, the first 1,000 million tons could perhaps be reduced at a cost of, say, only USD 15 per ton, but then the cost would increase very much. Taking an average of only USD 25 per ton, and assuming that total emissions had to be reduced by half, then a total annual subsidy of USD 75 billion was forthcoming from the poor to the rich, from the South to North, or in other terms, the carbon debt was increasing by this amount.

This was an excellent argument to try and shame the diplomats of the rich countries. However, they are a shameless lot. So, although claims for the ecological debt has been made very often at the COPs the principle has not been adopted by the UN although sometimes there is talk about 'loss and damage', beyond mitigation and adaptation.

In any case, Jyoti Parikh's pioneering calculations were useful. She did not mean at all that by paying that amount as a fine, year after year, the rich countries would be entitled to continue with their level of emissions.

Obviously, the world system is not governed by principles, rights and ethics but by force. Nonetheless, ideas of justice can sometimes mobilise people into becoming a counter-force. Therefore, it is the combination of the above mentioned instances of ecological debt that is particularly explosive. A tool that is conceptually clear, legitimised by law and science, and politically and ethically persuasive can be of great use for movements seeking environmental injustice.



Box 9 Political implications of Ecological debt

by Leida Rijnhout

For me, the concept of ecological debt is one of the strongest tools in my work, which is advocating sustainable development, with a strong emphasis on the need for environmental and social justice. It is a convincing concept to show people that there is an unfair distribution of wealth, not only since old colonial times, but also still at the very moment. It shows clearly that the average lifestyle of people in the Global North is on the account of the use and damage of natural resources of the countries in the Global South. It shows clearly that an active process is going on of enrichment on one side and impoverishment on the other side, which is structural and institutionalised. Only by exposing and stopping this 'system error', we will be able to make any advance in achieving environmental and social justice.

Calculating ecological debt, even if the results can be discussed (what is a tree or a human life worth?), is nevertheless helpful, as facts and figures of the existing impoverishment mechanisms are made more transparent and do support the sense of urgency that fundamental change is necessary. It will stop the traditional 'Aid and Trade' agenda of the development thinkers, and will reorient us towards a policy agenda in favour of fair sharing, focus on wellbeing for all, sufficiency and the united defence of the global commons worldwide.

Corporate legal and financial accountability for any impact done on the environment or local communities has to be so obvious, that this goes beyond the ecological debt concept. Considering environmental damage a crime is out of discussion, and any doubt about that sounds really silly.

Still, relevant criticism of the concept as it has been articulated up to this point provides several opportunities for making the concept of ecological debt even more effective as a tool in the struggle for justice in the world. Rice agrees with Paredis et al. (2008:247), for instance, that arguments for ecological debt are not sufficiently developed to be operable as a viable tool in international negotiations. At this point, it is backed only by a limited numbers of experts, and the statistical evidence supporting its claims remains too patchy to really legitimise it as an approach within international policy arenas. This weakness may be remedied, the Ghent researchers argue, through a stronger link between ecological debt as a campaign tool and as a scientific method. In overcoming this weakness, EJOLT, as a research project that brings EJO activists together with progressive scholars through a dialectical dynamic of activist and academic knowledge generation, should play a significant role in both refining the concept and linking it to political campaigning.

We caution that this dynamic will likely have to contend with criticisms of the (academic) conceptualisation of the concept of ecological debt that are quite the opposite of those discussed by both the Paredis research group and Rice. This criticism concerns the inherent tendency or at least potential risk of the ecological debt concept to amplify the general tendency within environmental policies to objectify, quantify, monetize, and in the end commodify nature. We share this concern and are highly skeptical of, for instance, the market mechanisms of the Kyoto Protocol and the nostrum of the 'green economy' that was hailed at the Rio+20 Conference in 2012.

We do, however, believe that it is possible to draw a sharp line between monetization and commodification. The long tradition within ecological debt thinking—going back at least to the "Debt Treaty" of 1992—to provide more or less detailed quantifications of debt accrual are politically important and scientifically interesting. Even the monetization of the debt, which is methodologically more daring, has political advantages since, as Martinez-Alier



(2002:228) noted, “*chrematistics is well understood in the north*”. A precondition for maintaining the sharp line between monetization and commodification can therefore be understood as being an effective means by which to clarify the difference between reparation and payment.

Severe ecological damage because of either colonial plunder or structurally-enforced extraction can never be fully remunerated through economic transactions; in this way, a reparation paid for historical abuses should be regarded not as a full compensation but as a recognition of wrongdoing. Suitably framed in this way, monetization of the ecological debt need not risk becoming a pretext for further commodification of nature. That much said, money value is only one of several, perhaps innumerable, ways of valuing ecosystems, and it should not have a privileged position or function as a common unit in which all other values can be expressed. Multi-criteria evaluation and respect for incommensurability of values remain an important cornerstone of ecological economics (cf. Rodríguez-Labjos & Martínez-Alier 2012; Gerber et al. 2013; Zografos et al. 2014).

The concept of ecological debt raises larger issues about the historical indebtedness of core sectors of the world economy to their peripheries. In point of fact, capital accumulation in a certain area inevitably relies on a net appropriation of embodied labour time and/or natural space from its hinterlands. Noteworthy, on the one hand, is that the identifiable asymmetry that forms the basis of this social relation, as in, for instance, the indebtedness of the eighteenth century British textile industry to the millions of Africans enslaved in the cotton fields of the Americas (and their descendants), has not become ubiquitous in discussions of ecological and social justice in the world today.

On the other hand, considering the moral and legal implications that would ripple out with its acceptance, just why the notion of ecological debt has often been met with keen opposition is quite understandable. Indeed, a can of long-accruing worms would, as it were, be opened! For how much is the core in arrears to the periphery for its very existence as such? If ever accurately quantified the figure would be almost unfathomably mind-boggling. But, significantly, so too has been the suffering of those many billions who for generations have borne the brunt of injustices unquantifiable, both social and ecological.

Having all these elements in mind, **Box 10** closes this report underlining why recognition and restitution of the ecological debt is nowadays more valid than ever.

Reparations for historical abuses should be regarded not as a full compensation but as a recognition of wrongdoing. Monetization of the ecological debt should not become a pretext for further commodification of nature



Box 10 Ecological Debt and rights of nature:

Why recognition and restitution of the ecological debt is more valid than ever

By Ivonne Yáñez

In 2003, the Ecuadorian EJO Acción Ecológica, as part of the demand for recognition of the ecological debt, made the exercise of estimating the debt of Texaco to the peoples of Ecuador and Amazon (Acción Ecológica 2003). The result was that the corporation, now Chevron, owned nearly 110 billion dollars. That figure is 11 times bigger than the amount that an Ecuadorian judge ordered Chevron to pay to the plaintiffs for damages caused in the Ecuadorian Amazon. The vast difference is due to the fact that AE accounted for elements such as direct impact on the environment – rivers, air, soils, etc. – and not only on human beings. This does not mean that the claim on Chevron necessarily must be paid in money, but entails a process of integral reparation of the rivers, the soils and so on.

The ecological debt transcends the restitution of human rights. Those affected cannot be considered as fully compensated if the state of the ecosystems is not restituted to the situation previous to the damage. While it is true that the value of human life is incommensurable, or that environmental damages are likely to be irreversible, the human dimension of integral reparation goes hand in hand with seeking the recovery of personal and collective dignity. In the case of nature, reparation means the regeneration of vital cycles and the capacity of reproducing life.

This needs to be accompanied with a process of natural healing, leaving the rivers and forests to recover from the trauma suffered, which unavoidably entails stopping all kinds of oil extraction in that area. In the case of Ecuador, this is consistent with the rights of nature recognised in the Constitution, namely the right to be repaired regardless the civil or criminal damage that may exist.

That is why, in addition to the mentioned court decision - that could perhaps be seen as a part of the recognition of the social and environmental debt of the corporation with Ecuador – plaintiffs have filed a lawsuit in the International Criminal Court against Chevron CEO John Watson and other managers. The claim is based on article 7 of the Rome Statute, stating that a crime against humanity involves a severe and systematic attack against life integrity with knowledge of the facts. A sentence would include the repair of the damage and a compensation, including imprisonment for managers who caused and are still causing an impact that generates this social and ecological debt. Someday there will be an International Criminal Court for crimes of against nature.

In the famous case of the Yasuní, the relation to ecological debt is also very clear. Among the arguments of the Yasuní-ITT initiative, there was the recognition of the ecological debt as it was conceived by Oilwatch and Acción Ecológica. A redress of this debt would in practice contribute to help Ecuador to prevent more oil extraction from the Yasuní. This proposal is also a step to implement the rights of nature. The proposal remains valid despite the unfortunate decision of the Ecuadorian government to disarm the initiative.

We can also see this link between oil extraction and ecological debt in e.g. the demand for the rights of the sea, as in the case of the BP oil spill in the Gulf of Mexico in the year 2010. Aside from civil damages that the company made to local populations, and relying on the international jurisdiction of the rights of nature, a lawsuit was filed in the Constitutional Court in Quito. It says that one of the ways to repair the sea area in the Gulf and the life there would entail that BP leaves the same amount of oil barrels that were spilled under the ground. In this way, the corporation would be recouping the debt with the sea and the sea life of the Gulf.

During the years of the campaign for recognition and compensation for the ecological debt, it was important to identify the debtors and the creditors. In this respect, we are now giving a very important impetus when considering that also the nature is a creditor. There is not only a debt of the industrialized North to the peoples of the South, there is also a debt that oil capitalism owes nature.

The oil companies, the industry, the financial system, and other debtors have a responsibility for the planet. The activities of the oil industry are attacks on human and non-human life (including stones, beings, the dead...), but they also affect the Earth in its ability to recover, for example through the carbon cycle. They also affect the sea world, where there are no national borders.

Just as slavery generated a huge historical and social debt, a debt also exists in relation to nature. Just as slavery allowed an accumulation of capital through the appropriation of human labour, accumulation is created by the appropriation of the very functioning of nature turned into servitude (the so-called environmental services) and thus a huge debt is being created.



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ecological debt

environmental justice

biophysical measure

legal instrument

payment

responsibility

theoretical

social awareness

academia

practice

cancellation

movements

distribution

climate

injustice

negotiation