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International law and ecological debt

International claims, debates and struggles for environmental justice

Contributions by

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Abstract

Under the paradigm of sustainable development, contemporary international law has not been able to shape an effective, nor an equitable, answer to the global ecological crisis. There is widespread consensus that environmental governance requires a major overhaul if humankind wishes to meet that challenge. Our main point is that global patterns of ecologically unequal exchange will not be corrected just by minor adaptations of existing international regimes. Nor will change come through the formal enactment of a given set of principles. Rather, correction will require a profound reconceptualisation of global governance that is able to integrate counter-hegemonic claims for environmental justice. This report has four parts. The first one is a conceptual introduction that puts in context concepts emerging from the academic or social movements, such as *ecological* and *climate debt*, against the backdrop of the legal narratives that underpin the hegemonic model of development. The second part presents a critique of the notion of sustainable development as a supposed paradigm for reconciling the needs of present and future generations with the preservation of the Earth's ecosystems. The third part emphasises the potential of current international law to deal with the needs of intragenerational and intergenerational justice in relation to sustainability. In this section, which echoes a growing academic debate, we argue that a reinterpretation and reconstruction of the current international order in terms of global constitutionalism and an enhanced human rights approach, offers a way to mitigate the present biases in international law. Finally, the fourth part is much more speculative in nature, outlining some ideas that may be found beyond the elements already present in current international law.

Keywords

global social metabolism

colonialism

sustainable development

environmental justice

ecological debt

climate debt

social movements

counter-hegemonic claims

third world approaches to international law

trans-civilisational approaches to international law

global constitutionalism

human rights

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Acronyms

BIT	Bilateral Investment Treaty
CBD	Convention on Biological Diversity
CBDRP	Common But Differentiated Responsibilities
CDM	Clean Development Mechanism
COP	Conference of the Parties
CSO	Civil Society Organisations
EF	Ecological footprint
EJ	Environmental Justice
EJO	Environmental Justice Organisations
EPO	European Patent Office
EU	European Union
GATT	General Agreement on Tariffs and Trade
GCF	Green Climate Fund
ICCPR	International Covenant on Civil and Political Rights
ICESCR	International Covenant ON Economic, Social and Cultural Rights
IPR	Intellectual Property Rights
JI	Joint Implementation
MAT	Mutually Agreed Terms
MEA	Multilateral Environmental Agreement
NIEO	New International Economic Order
OECD	Organisation for Economic Cooperation and Development
TRIPS	Trade Related aspects of Intellectual Property Rights
TWAIL	Third World Approaches to International Law
UNCC	United Nations Compensation Commission
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention on Climate Change
UN GA	United Nations General Assembly
WCD	World Commission on Dams
WCED	World Commission on Environment and Development
WTO	World Trade Organisation

The ISO 4217 standard is used for the currency codes (e.g. USD for US dollar).

Foreword

Conflicts over resource extraction or waste disposal increase in number as the world economy uses more materials and energy. Civil society organisations (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 Organisations, 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 CSOs 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 organisations (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 others' experience and from academic research how to argue against the growth of environmental liabilities or ecological debts. Thus EJOLT aims at increasing EJO capacity 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. Conversely, 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 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 involves showing the links between increased metabolism of the economy (in terms of energy and materials), and resource extraction and waste disposal conflicts in order to answer the driving questions:

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

This legal report on the international debates on claims for a an Ecological Debt, including the Climate Debt, is an output of the work of the a team of legal experts of the project based on the Centre of Environmental Law of the Universitat Rovira i Virgili, in Tarragona (CEDAT-URV).

The report emphasises the potential of current international law to deal with the needs of intragenerational and intergenerational environmental justice and outlines some ideas that go beyond the elements already present in current regulations. In particular, the authors reassess international law building on previous works about the concept of Ecological Debt and Climate Debt, and identify elements in the global legal system that would also allow confronting ecologically unequal exchange based on an eventual process of constitutionalisation.

While the concept of Ecological Debt is clearly a contribution from EJOs from the Global south, this report approaches the debate from a strictly legal perspective, in an attempt to underpin a possible implementation of the idea in the international legal scene. The report aims to help activist organisations and to inform policy makers and scholars that are interested in pushing action and research on the Ecological and Climate Debts. In this respect it is a contribution to an ongoing debate that is necessarily open to several other perspectives.

1 Introduction

International law was conceived as a *law of nations* destined to govern the co-existence of a small group of fundamentally European states, with relatively homogeneous cultural, religious, and political traditions, which were involved in a process of economic and commercial expansion beyond their borders. The globalisation of the state as a form of political organisation has brought about the formal globalisation of international law. Behind the veil of sovereign equality however, states are not only different from one another, but have also undergone a loss of political autonomy that has increased with the globalisation process.[1]

Since the nineteenth century, the creation of international organisations as permanent intergovernmental cooperation platforms has led to the consolidation of these institutions as legal subjects in the international legal order although their areas of competence and roles differ widely depending on their location in the centre or at the periphery of the system. In this respect, organisations such as the International Monetary Fund (IMF), the World Bank (WB) or the World Trade Organisation (WTO), among others, have a real power that goes beyond international level to determine directly the core of state policies in many different areas. In contrast, and paradoxically, the United Nations seem to have migrated toward the periphery of the system, except in regard to the power of the Security Council.[2]

The role of individuals in international law has always been mediated by the state. However, individuals became recognised in international law initially by the imperative of capitalist expansion, whereby economic interests were explicitly recognised through the granting of regulatory and judicial space to foreign investors (both individual or corporate) to defend their interests in, and discuss their differences with, states in which they had invested. Later, universal recognition of human rights and the establishment of several mechanisms for their international protection opened the way for individuals to file complaints against states or sue them. Building organisational frameworks beyond their borders in defence of common interests (profitable or non-profitable) people have

[1] "However one describes the role that should continue to be played by the state - be it as a counter-balance, a watchdog, a regulator, the guarantor of the proverbial fair playing-field, or as an overseer - its ability to carry out such functions effectively has been significantly curtailed.". At P. Alston. 'The Myopia of the Handmaidens: International Lawyers and Globalization' (1997) 8(3) *EJIL* 435, 443.

[2] Ibid., 438 and 444-5.

increasingly been able to establish direct relations with states and exercise some influence on the definition of state positions in the international arena, including in the development of international regulations. In this sense the interrelation between the interests of the powerful industrial lobbies or large multinational corporations and the policies of the most developed states has been so far, resoundingly more influential than international non-governmental, or non-profit organisations. This fact is indicative, as already mentioned, of a more widespread phenomenon of erosion of the decision-making and governance capacities of States and intergovernmental organisations, as is clearly visible in the case of the United Nations. Still, there are also relevant examples of the influence exerted by non-governmental organisations, as for instance in the process leading to the establishment of the International Criminal Court or the adoption of the Treaty on the Prohibition of Anti-personnel Mines or of the Convention on Cluster Munitions.

But as it has been pointed out, beyond non-profit non-governmental organisations, there is a large and diverse reality of social movements, critical of dominant model conceptions of modernity, property and identity, of the pre-eminence of the global over the local, and of the scope of formal democracy. These movements operate outside institutional frameworks, and are most of them, usually invisible to international law.[3] States meanwhile, sponsor networks of government employees (financial regulators, intelligence services, police and committees of ministers) that increasingly influential decisions, often while lacking any democratic accountability.[4] All of this remains outside the remit of international law, although sometimes instruments of international law are used to provide formal legal coverage.

The first reason that concepts such as climate debt or ecological debt have not gained a consistent presence in international debates is because they have emerged from social movements and organisations that specifically operate outside the institutionalised scenes of international relations.

The second reason has to do with the content of these concepts, which indicate intrinsically that environmental crisis is caused by dominant models of production and consumerism, a fact that has become obvious over the last forty years. This period of time coincides with the development of international environmental law, although the terms *ecological debt* and *climate debt* have only become a point of reference in the last 20 years.

The third reason is related to a lack in maturity of the concept itself, which has so far made it difficult to consider it as operational. For example, how to determine debtor' and creditor identity, which methods of calculating the debt, and what

[3] B. Rajagopal, *International Law from Below. Development, Social Movements and Third World Resistance* (CUP 2003), 235 and 249ff.

[4] Regarding this phenomenon and its scope, see A-M Slaughter. 'The Real New World Order' (1997) 76 *Foreign Affairs* 183. Alston (n 1), 440-1. A-M Slaughter. 'Disaggregated Sovereignty: Towards the Public Accountability of Global Government Networks' (2004) 39 *Government and Opposition* 159. M. Pianta, 'Parallel Summits of Global Civil Society' in H. Anheier, M. Glasius and M. Kaldor (eds), *Global Civil Society* (OUP 2001) 169

types of mechanism could make it effective, are open to question.[5] There are also challenges related to applying a concept that originates in private law, to the use of resources and natural ecosystems. Nevertheless, this does not mean that the ideas underlying the notion of ecological debt have not been present in international forums. On the contrary, some have made their presence known in different terms, through applying the principles of international environmental law and in developing frameworks of international regimes for such purposes, with regard to climate change, biological diversity protection or the control of transboundary hazardous waste.

This report has been organised in four parts. The first one is a conceptual introduction that puts in context the international juridical bases for the dominant development model, and outlines concepts emerging from academic or social movements, including the ones on ecological and climate debt that consider the limits and contradictions of that model. The second part is focused on the concept *sustainable development* as a supposedly new paradigm capable of reconciling the development needs of present and future generations with the preservation of the planet ecosystems. The third part emphasises the potential of current international environmental law for dealing with the needs of intragenerational and intergenerational justice in relation with sustainability. In this section, echoing a growing academic debate, we argue that a reinterpretation and reconstruction of the current international order in terms of global constitutionalism and an approach based on human rights, offer a way to mitigate and correct some of the deficiencies noted in previous sections. Finally the fourth part of the report is more speculative in nature, outlining some ideas that lie beyond elements already present in the current international law.

[5] E. Paredis, J. Lambrecht, G. Goeminne and W. Vanhove, 'Elaboration of the concept of ecological debt. Final report' Centre for Sustainable Development, Ghent University (Ghent 1 Sept. 2004).

2 Conceptual background

by Antoni Pigrau

Issues related to ecological debt or climate debt are not clearly reflected in the regulatory scope of international environmental law as such. Nevertheless, these concepts are visible in international decision forums and are directly and indirectly connected with other concepts and theoretical constructs coming out of different academic areas, or from activism. These have penetrated at the international legal level, as this report will try to show.

In this section we briefly present some concepts that have had an influence on international law, highlighting some of the claims inherent to those of ecological and climate debt.

2.1 Unequal economic relations and strategies for a new international economic order

From the fifteenth century onwards, international law has developed at the service of the emerging society of sovereign European states. Ever since, it has been based on the premises of political independence, and states' autonomous capacity to mobilise internationally in defence of their own interests. The cornerstone of the Westphalian order is formal equality among members of the state-system, which is achieved by co-option (recognition by other members), alongside a deliberate deregulation, or *laissez faire*, the driving force for the capitalist economic model. This neutral appearance of international law clearly favoured the protection of the shared interests of the few existing states, opening the doors to free competition among those states so as to realise and enforce them.[6] Classic regulations have historically allowed international law to be used as a tool for political and economic domination in the service of the so-called 'civilised nations.'[7] These regulations include freedom of navigation, the appropriation of

In historical terms, classic international law (1648-1945) can be seen as a legitimising tool for the domination of colonial peoples and territories by the interests of so-called 'civilised nations'.

[6] L. Henkin. 'International Law: Politics, Values, Functions. General Course on Public International Law' (Collected Courses of the Academy of International Law 216, 1989), 130-5, and 186-8.

[7] M. Bedjaoui, 'Introduction générale' in M. Bedjaoui (ed), *Droit international. Bilan et perspectives.*

'empty' territories by military conquest as legal justification of colonialism, 'unequal treaties' with other political entities whose statehood is not recognised, the Mandate System of the League of Nations, the International Trusteeship System in the UN Charter, and the principle of reciprocity or the protection of foreign investments. General conditions for market globalisation were established long ago with the international division of labour generated by colonialism.

Since then international society has become much more complex and certain processes have begun to question the basic order defended by classic international law, decolonisation being one of the most important. These processes are traceable to Latin America in the early nineteenth century and reached their peak on the African and Asian continents during the second half of the twentieth century. Formal (in contrast to 'real') political independence however, did not bring about economic independence.

After the Second World War, international economic relations developed within a legal framework fundamentally based on freedom and equal treatment, especially by means of the most-favoured-nation clause and the principle of reciprocity. Key institutional instruments were the IMF and the WB, established in December 1945, and the General Agreement on Tariffs and Trade (GATT) adopted in October 1947, which were conceived and controlled by the wealthiest countries.[8] This framework, applied to the economic structures of newly independent countries or to still-colonial territories the economies of which had no other purpose than being at the service of the old or current colonial powers, produced economic growth for some and underdevelopment for others. Overall (with some exceptions) the gap between former colonial powers and their ancient colonies in terms of quality of life standards, continued to grow, giving rise to a series of critical attitudes. Among these, the theories of unequal exchange,[9] of dependency[10] or of the global system were particularly relevant, [11] drawing attention to the effects of the international division of labour in which the rich countries of the 'North' have control over the

Tome I (Pedone 1990) 5, 5-6. More generally, see also R. Falk. 'The New States and International Legal Order' (Collected Courses of the Academy of International Law 118, 1966) 1. A. Anghie, *Imperialism, Sovereignty and the Making of International Law* (CUP 2004). B. Rajagopal, *International Law from Below. Development, Social Movements and Third World Resistance* (CUP 2003). B. S. Chimni. 'Third World Approaches to International Law: A Manifesto' (2006) 8 *International Community Law Review* 3.

[8] A. Pigrau Solé, Subdesarrollo y adopción de decisiones en la economía mundial (Tecnos 1990), chs 3-4.

[9] A. Emmanuel, *L'échange inégal* (François Maspero 1969). A. Emmanuel, *Unequal Exchange* (Monthly Review Press 1972). S. Amin, *Unequal Development: An Essay on the Social Formations of Peripheral Capitalism* (Monthly Press Review 1976).

[10] See C. Furtado, *Development and Underdevelopment* (University of California Press 1964). T. Dos Santos, *La dependencia económica y política en América Latina* (Siglo XXI 1971). T. Dos Santos, *La teoría de la dependencia: balance y perspectivas* (Plaza y Janés 2002). A. Gunder Frank, *The Development of Underdevelopment* (Monthly Review Press 1966).

[11] See I. Wallerstein, *The Modern Word System, Vol I: Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century* (Academic Press 1974). I. Wallerstein, *The Modern Word System, Vol II: Mercantislism and the Consolidation of the European World-Economy, 1600-1750* (Academic Press 1980). I. Wallerstein, *The Modern Word System, Vol III: The Second Great Expansion of the Capitalist World-Economy, 1730-1840's* (Academic Press 1989). I. Wallerstein, *The Modern Word System, Vol IV: Centrist Liberalism Triumphant, 1789-1914* (University of California Press 2011).

financial institutions, export industrial manufacturing and services, while they import raw material and cheap labour from the poor countries from the periphery of the system (the 'South').

In this context, the principle of sovereign equality of states remains key, formalised in the Charter of the United Nations in 1945, and in Resolution 2625 (XXV) of the General Assembly in 1970. That formalisation in practice has led to the adoption of different standards of equal treatment in international economic relations, and has on fact strengthened existing economic inequality between some countries and others.[12]

The 1970s in particular saw a battle of ideas which supported the values of equity and solidarity as a limit to *laissez faire*,[13] defended by developing countries. The platform of the Non-Aligned Countries Movement, using the General Assembly of the United Nations (where they had a majority) as a main forum, strategised to build a 'new international economic order'.[14] In that context, proposals of different legal principles were made, among them preferential treatment for developing countries, permanent sovereignty over natural resources, the right of all states to benefit from science and technology, the right of developing countries to development assistance, and equal participation of developing countries in international economic relations.[15]

Fig. 1

General Assembly concludes Sixth Special Session

Secretary-General Kurt Waldheim thanking Assembly President Leopold Benites (Ecuador) shortly after the conclusion of the session. At left is Bradford Morse, Under-Secretary-General for Political and General Assembly Affairs

2 May 1974, United Nations, New York

Photo credit: UN Photo/YutakaNagata

[12] See R. Prebisch. 'Towards A New Trade Policy for Development' (Report by the Secretary-General of the Conference. Proceedings of the United Nations Conference on Trade and Development. Vol. II: Policy Statements United Nations, Geneva 23 March-16 June 1964) 7. UN Doc E/CONF.46/141.

[13] P. J. G. Kapteyn. 'The New International Economic Order: The Basis of the New International Economic Order' (1978) 25 *Netherlands International Law Review* 217, 218.

[14] See Declaration on the Establishment of a New International Economic Order, UNGA Res 3201 (S-VI) (1 May 1974) and Charter of Economic Rights and Duties of States, UNDA Res 3281 (XXIX) (12 Dec. 1974). In this regard, see M. Bedjaoui, *Towards a New International Economic Order* (Holmes & Meier 1979). With a somewhat more critical approach, see Rajagopal (n 7), 89-94.

[15] UN Doc A/37/409 (1 October 1982) and Add. 1 and 3. UN Docs A/38/366, A/39/504 and Add.1 & 2.

The *New International Economic Order* foresaw that economic relations between developed and developing states should not be governed by formal equality. This principle became enshrined as 'compensatory inequality' or 'positive discrimination'

Nevertheless, debate about the legal consequences of these approaches was blocked in the UN General Assembly during the 1980s.[16] Notably, those in favour of the new international economic order held that, in economic relations between developed and developing countries, formal equality should be substituted by another concept that was called compensatory inequality,[17] compensatory equity, proportional equality, substantive equality or positive discrimination. The creation of a new branch of international law was even proposed, characterised, as would happen later with environmental law, as an interventionist and conclusive law. The concept of *International Development Law*,[18] was directly linked to the concept of 'right to development', set out in the Declaration on the right to development, and adopted by the General Assembly in its resolution 41/128, on the 4th of December 1986.[19] In short, the resolution envisaged the establishment of mechanisms to ensure specific and differential treatment in favor of developing countries to compensate their worse economic situation. This practice became most common in the area of trade, giving for instance, non-reciprocal and preferential treatment for the export of certain products from developing countries.[20]

But the pressure for free trade and the free movement of capital triumphed, facilitating penetration by large transnational corporations under the coercion of the WTO, the IMF and the WB.[21] Through structural adjustment plans imposed on processes of external debt renegotiation, the economic, technological and financial dependence of states resistant to the dominant model increased to the point that it undermined these states' economic potential, commitment to joint action, and finally, their political resistance.[22]

With the collapse of planned economy and the resistance of most of the Southern countries crushed, the unspoken paradigm of international society integrated the state within international capitalism,[23] and was touted by the richest countries as the best, if not the only possible way, to organise our world.

[16] See in this regard Pigrau (n 8), ch 1.

[17] See inter alia M. Flory. 'Souveraineté des états et coopération pour le développement' (Collected Courses of the Academy of International Law 141, 1974) 255, 310. M. Bedjaoui. 'Non-alignement et droit international' (Collected Courses of the Academy of International Law 151, 1976) 335, 436. B. Bollecker-Stern, 'The Legal Character of Emerging Norms Relating to the New International Economic Order: Some Comments' in K. Hossain (ed), *Legal Aspects of the New International Economic Order* (Pinter 1980) 68, 77-8. M. Virally. 'Panorama du droit international contemporain' (Collected Courses of the Academy of International Law 183, 1983) 9, 86.

[18] Among the first authors to use this concept was M. Virally. 'Vers un droit international du développement' (1965) 11 Annuaire Français de Droit International 3. See also O. Schachter. 'The Evolving International Law of Development' (1976) 15 Columbia Journal of Transnational Law 1.

[19] Although previously raised in other contexts, this concept was introduced into the academic debate by Keba M'Baye. See K. M'Baye. 'Le droit du développement comme un droit de l'homme' (1972) 5 *Revue des Droits de l'Homme* 503. See also R. -J Dupuy (ed), *The Right to Development at the International Level* (Sijthoff & Noordhoff 1976).

[20] W. D. Verwey, 'The Principle of Preferential Treatment for Developing Countries' (15 August 1982) UN Doc. UNITAR/DS/5.

[21] Anghie (n 7), 245ff.

[22] M. Benchikh. 'Le droit des peuples au développement et ses negations dans l'ordre international économique actuel. Pour une réglementation juste et équitable' (Informe al XIII Congreso de la Asociación Internacional de Juristas Demócratas Barcelona 19-24 March 1990).

[23] M. Chemillier-Gendreau, *Humanité et souverainetés. Essai sur la fonction du droit international* (La

In this process, some developing countries and countries in transition to a market economy have replicated economic policies from the wealthiest countries and experienced rapid growth. This development has allowed countries like Brazil, Russia, India, China and South Africa - but also others like South Korea or Singapore - to come closer the North in absolute terms. However, in a process of enormous concentration of wealth, the richest population quintile has come to earn 83 percent of overall income with just a single percentage point for those in the poorest quintile'[24]. Social differences have grown, not only between the North and the South, but also within many of the Northern and Southern countries. This development has given rise to enclaves of the South within the North, and *viceversa*. As part of this process the major economic powers have created their own direct and informal mechanisms of governance outside of traditional intergovernmental arrangements and any public system of accountability, thus eroding the power of states, not only internationally but in designing and implementing their own economic policies and making almost impossible any kind of control by public opinion.

The right to development is an inalienable human right by virtue of which every human person and all peoples are entitled to participate in, contribute to, and enjoy economic, social, cultural and political development, in which all human rights and fundamental freedoms can be fully realized

UN Declaration on the Right to Development, 1986, Art.1

2.2 From studies on growth limits to the analysis of social metabolism and unequal ecological exchange

The influence of scientific knowledge on international environmental law has been key to its evolution, from the point of view of understanding the functioning of ecosystems and the impact of certain products or substances on people and on the environment, and in terms of the capacity of applied research to develop technologies capable of solving or minimising different environmental problems. In fact international environmental law has created its own scientific advisory bodies in the framework of several international conventional regimes. But not all scientific contributions have had the same scope in terms of creating international standards. It is therefore necessary to point out some relevant scientific offerings.

First, the studies of several scientists should be mentioned, that reported on the impact of various pollutant products on different elements of the environment and on the health of living creatures, among them the works of Rachel Carson[25] and Barry Commoner.[26] In *Silent Spring* (1962) Rachel Carson reported on the toxic effects of pesticides such as DDT and their ability to remain and accumulate in living organisms. In 1966, in *Science and Survival,* Barry Commoner, founder of

Decouverte 1995), 52.

[24] See I. Ortiz and M. Cummins, 'Global Inequality: Beyond the Bottom Billion. A Rapid Review of Income Distribution in 141 Countries' UNICEF (UNICEF Social and Economic Policy Working Paper, April 2011), [vii].

[25] R. Carson, *Silent Spring* (Houghton Mifflin 1962).

[26] B. Commoner, *Science and Survival* (Viking 1966); B. Commoner, *The Closing Circle: Nature, Man, and Technology* (Alfred A. Knopff 1971);B. Commoner, *The Poverty of Power: Energy and the Economic Crisis* (Random House 1976).

The first reports to the Club of Rome were particularly influential, exposing the limits of growth based on the expected exhaustion of certain natural resources, either because they were non-renewable, or because they were being used up at a higher rate than their natural regeneration capacity

the *St. Louis Committee on Nuclear Information,* reported on, among other issues, the effects of atomic radiation or pesticides.[27]

The first reports to the Club of Rome in 1972 and 1974,[28] turned out to be particularly influential, exposing the limits of growth and the inevitable exhaustion of certain natural resources, either because they were non-renewable, or because they were being used up at a higher rate than their natural regeneration capacity in a context of accelerated global population growth. In the 21st century many projects agree in placing the Planet in a situation that is beyond the limits of growth.[29]

The US school of environmental sociology and its *New Ecological Paradigm* (NEP) emphasised the crisis of the dominant western conception of the relationship between humans and nature that was branded as the *Human Exemptionalism Paradigm* (HEP).[30] HEP was criticised for its blind faith in the human capacity to dominate nature based on its intellectual mastery, its irrational optimism about unlimited natural resources and the ability of humankind to cope with any obstacles, so that progress is a continuous and unlimited process.[31]

Studies on the *ecological footprint* (EF) have also been of considerable impact. In the mid 80s[32] Mathis Wackernagel and William Rees gave the following definition of ecological footprint: “Formally it is the total area of productive land and water required continuously to produce all the resources consumed and to assimilate all the wastes produced, by a defined population, wherever on Earth that land is located.”[33] The EF is a concept that synthesises the impact of human activity on the environment through a surface value, stating the acres of land that need to be

[27] In his work from 1971, *The Closing Circle*, Commoner formulated four basic laws of ecology (Everything Is Connected to Everything Else, Everything Must Go Somewhere, Nature Knows Best, There Is No Such Thing as a Free Lunch). He also stated that the use of new technologies, the long-term effects of which remain to be seen, are much more to blame for environmental degradation than the population growth factor, which was highlighted by authors such as Paul R. Erlich, in P. R. Erlich, *The Population Bomb* (Ballantine 1968).

[28] D. H. Meadows and others, *The Limits to Growth* (Universe 1972);D. H. Meadows, J. Randers and D. L. Meadows, *Beyond the Limits* (Chelsea Green 1993);D. H. Meadows, J. Randers and D. L. Meadows, *Limits to Growth: The 30-Year Updeate* (Chelsea Green 2004); M. Mesarovic and E. Pestel, *Mankind at the Turning Point. The Second Report to the Club of Rome* (Dutton 1974) See also R. J. A. Goodland, H. E. Daly and S. El Serafy, 'Environmentally Sustainable Economic Development: Building on Brundtland' UNESCO.

[29] *Millennium Ecosystem Assessment*, 2005. Ecosystems and Human Well-being: Synthesis. (Island Press, Washington, DC, 2005). Available at <http://www.unep.org/maweb/documents/document.356.aspx.pdf> (accessed: 24 Apr. 13).

[30] W. Catton and R. Dunlap. 'Environmental Sociology: A New Paradigm' (1978) 13 *The American Sociologist* 41; W. Catton and R. Dunlap. 'Paradigms, Theories, and the Primacy of the HEP/NEP Distinction' 13 *The American Sociologist* 256;W. Catton and R. Dunlap. 'Environmental Sociology: A New Paradigm' (1978) 13 *The American Sociologist* 41.

[31] R. Dunlap. 'La sociología medioambiental y el nuevo paradigma medioambiental' (2001) (162-163) *Sistema: Revista de ciencias sociales* 11.

[32] M. Wackernagel and W. Rees, *Our Ecological Footprint: Reducing Human Impact on the Earth* (New Society 1995).

[33] W. Rees and M. Wackernagel. 'Urban Ecological Footprints: Why Cities Cannot Be Sustainable - and Why They Are a Key to Sustainability' (1996) 16 *Environmental Impact Assessment Review* 223, 228-9. See also <www.footprintnetwork.org/en/index.php/GFN/page/academic_references> for more references.

cultivated to provide us with food, to have a home, to keep warm, to go to work or to study or go on holiday, to consume all sorts of products and to absorb our waste, using the available technology and current management practices. This methodology allows comparison at different scales (household, city or country) and crucially, allows comparison to the capacity of the planet.[34] A concept related to the EF is the *environmental utilisation space* or *environmental space.* First introduced by Horst Siebert in 1982, it was then used by Hans Ophschoor and later operationalised by Joachim H. Spangenberg, who applied it to an analysis of the limits of energy, materials and soil use, by European industrial metabolisms.[35]

The Ecological footprint synthesises the impact of human activity on the environment through a surface value

New approaches have come out of the ecological focus on the economy, including the analysis of social metabolism and the flow of resources, materials, and energy (*Material flow analysis*), and of the limits of system capacities to absorb waste.[36] Thus while commercial relations between two countries might seem balanced in monetary terms, a substantial inequality regarding the flow of natural resources may persist. Some states or groups of states can systematically absorb the ecological capacity of others by means of the import of products that imply an intensive use of resources and the export of their own waste[37]. This focus aims to prove that the prices of natural resources or raw materials do not really reflect their value, in terms of work provided and environmental degradation involved. Hence different methodologies have been proposed to count the flow of materials, emissions or waste[38]. These studies show an increase in the volume of the raw material exports parallel to a decrease in their prices.[39]

[34] "Every individual and country's Ecological Footprint has a corresponding Planet Equivalent, or the number of Earths it would take to support humanity's Footprint if everyone lived like that individual or average citizen of a given country. It is the ratio of an individual's (or country's per capita) Footprint to the per capita biological capacity available on Earth (1.78 gha in 2008). In 2008, the world average Ecological Footprint of 2.7 gha equals 1.48 Planet Equivalents"; http://www.footprintnetwork.org/en/index.php/GFN/page/glossary/.

[35] J. B. Opschoor and R. Weterings. 'Environmental Utilisation of Space: An Introduction' (1994) 9 *Tijdschrift Voor Milieukunde* 198; R. Weterings and J. B. Opschoor, 'Towards Environmental Performance Indicators Based on the Notion of Environmental Space' RMNO (Report to the Advisory Council for Research on Nature and Environment, Rijswijk 1994); J. H. Spangenberg, *Towards Sustainable Europe. A Study from the Wuppertal Institute for Friends of the Earth Europe* (FoE Publications 1995); J. H. Spangenberg. 'Environmental Space and the Prism of Sustainability: Frameworks for Indicators Measuring Sustainable Development' (2002) 2 *Ecological Indicators* 295.

[36] See inter alia M. Fischer-Kowalski. 'Society's Metabolism: The Intellectual History of Materials Flow Analysis, Part I, 1860-1970' (1998) 2 *Journal of Industrial Ecology* 61; M. Fischer-Kowalski and W. Hüttler. 'Society's Metabolism: The Intellectual History of Materials Flow Analysis, Part II, 1980-1998' 2 *Journal of Industrial Ecology* 107;S. Giljum and K. Hubacek, *International Trade, Material Flows and Land Use: Developing a Physical Trade Balance for the European Union. Interim Report* (IIASA 2001); A. Hornborg, B. Clark and K. Hermele (eds), *Ecology and Power: Struggles over Land and Material Resources in the Past, Present and Future* (Routledge, London 2013)

[37] J. O. Andersson and M. Lindroth. 'Ecologically Unsustainable Trade' (2001) 37 *Ecological Economics* 13.

[38] See inter alia S. Giljum. 'Trade, Material Flows and Economic Development in the South: The Example of Chile' (2004) 8(1-2) *Journal of Industrial Ecology* 241;G. Machado, R. Schaeffer and E. Worrell. 'Energy and Carbon Embodied in the International Trade of Brazil: An Input-Output Approach' (2001) 39 *Ecological Economics* 409;R. Muradian and J. Martínez-Alier, 'Trade and the Environment from a "Southern" Perspective' in (2001) 36 *Ecological Economics* 281; R. Muradian, M. O'Connor and J. Martínez-Alier. 'Embodied Pollution in Trade: Estimating the "Environmental Load Displacement" of Industrialized Countries' (2002) 41*Ecological Economics* 51.

[39] See S. Bringezu and H. Schütz. 'Material Use Indicators for the European Union, 1980-1997. Economy-Wide Material Flow Accounts and Balances and Derived Indicators of Resource Use'

Environmental burdens are externalized through international trade, which allows industrialized countries to keep a high environmental quality within their own borders, while exporting the negative environmental consequences of their production and consumption processes to other parts of the world

In this way, environmental burdens are externalised through international trade, which allows industrialised countries to keep a high environmental quality within their own borders, while effectively exporting the negative environmental consequences of their production and consumption processes to other parts of the world, such as deforestation, loss of biodiversity or waste. Moreover, the economic structures and activities of countries whose economies are based on the raw export of materials rarely benefit from such arrangements. This is the essence of the notion of *unequal ecological exchange,*[40] adopted from ecological economics and environmental sociology, and applied to studies of different specific economic sectors, such as forestry, bovine sector, carbon emissions or others.[41] This process, the origin of which would be located in the industrial revolution, has been described as of *Timespace Appropriation* or of *Environmental Load Displacement* .[42]

So, in contrast to voices pointing to a progressive dematerialisation of the most advanced economies, what seems to be happening is that some core economies are being 'relatively dematerialised' as they export to poor countries, or 'peripheralise', the material-intensive stages of the production process."[43] Despite substantial scientific evidence pointing to the unsustainability of current dominant economic model, the most powerful countries inside the system seem to be reluctant to modify the basic patterns of production and consumption, maintaining their *obsession* with growth.[44] Protesting the failure of the Rio+20 Conference, NGOs who attended the summit decried the omission from the key outcome

(2001) (2/B/2) *Eurostat Working Paper* .

[40] M. Cabeza-Gutés and J. Martínez-Alier, 'L'échange écologiquement inégal' in M. Damian and J. C. Graz (eds), *Commerce international et développement soutenable* (Economica 2001); A. Hornborg. 'Towards an Ecological Theory of Unequal Exchange: Articulating World System Theory and Ecological Economics' (1998) 25 *Ecological Economics* 127;A. K. Jorgenson and J. Rice, 'Uneven Ecological Exchange and Consumption-Based Environmental Impacts: A Cross-National Investigation' in A. Hornborg, J. McNeill and J. Martínez-Alier (eds), *Rethinking Environmental History: World-System History and Global Environmental Change* (AltaMira Press 2006) 239;A. K. Jorgenson, K. Austin and C. Dick. 'Ecologically Unequal Exchange and the Resource Consumption/Environmental Degradation 'Paradox': A Panel Study of Less-Developed Countries, 1970-2000' (2009) 50 *International Journal of Comparative Sociology* 263; J. Rice. 'Ecological Unequal Exchange: Consumption, Equity and Unsustainable Structural Relationships within the Global Economy' (2007) 48 *International Journal of Comparative Sociology* 43; A. Hornborg, *Global Ecology and Unequal Exchange: Fetishism in a Zero-Sum World* (Routledge 2011).

[41] K. Austin. 'The "Hamburger Connection" as Ecologically Unequal Exchange: A Cross-National Investigation of Beef Exports and Deforestation in Less-Developed Countries' (2010) 75 *Rural Sociology* 270;A. K. Jorgenson. 'Unequal Ecological Exchange and Environmental Degradation: A Theoretical Proposition and Cross-National Study of Deforestation, 1990-2000' (2006) 71 *Rural Sociology* 685;A. K. Jorgenson. 'The Sociology of Ecologically Unequal Exchange and Carbon Dioxide Emissions, 1960-2005' (2012) 41 *Social Science Research* 242;J. M. Shandra and others. 'Ecologically Unequal Exchange, World Polity, and Biodiversity Loss: A Cross-National Analysis of Threatened Mammals' (2009) 50 *International Journal of Comparative Sociology* 285.

[42] A. Hornborg. 'Footprints in the Cotton Fields: The Industrial Revolution as Timespace Appropriation and Environmental Load Displacement' (2006) 59 *Ecological Economics* 74;A. Hornborg. 'Zero-Sum World Challenges in Conceptualizing Environmental Load Displacement and Ecologically Unequal Exchange in the World-System' (2009) 50 *International Journal of Comparative Sociology* 237.

[43] J. T. Roberts and B. C. Parks. 'Ecologically Unequal Exchange, Ecological Debt, and Climate Justice. The History and Implications of Three Related Ideas for a New Social Movement' (2009) 50 *International Journal of Comparative Sociology* 385.

[44] E. Altvater. 'The Growth Obsession' (2002) 38 *Socialist Register* 73.

document 'The Future we want'[45], of any reference whatsoever to the planet's limits, or turning points or to the Earth's capacity to carry the burden as these were considered unacceptable for being 'completely out of touch with reality'. Instead, in what has been described as a regression in international environmental law,[46] government representatives, referring to economic difficulties resulting from the economic and financial crisis, chose to prioritise of a path of recovering economic growth, over consideration of environmental sustainability.

Despite the mounting scientific evidence of the unsustainability of the current economic model, the world's most powerful countries remain reluctant to modify basic patterns of production and consumption

2.3 The Environmental Justice Movement

The environmental justice movement first appeared in the United States at the end of the 1970s and early 80s, as a series of protests against the severe health consequences for poor African American inhabitants of neighbourhoods in the vicinity of highly toxic waste dumps, notably in Love Canal (Niagara Falls, NY), Northwood Manor (Houston, Texas) and Warren County (North Carolina). These local movements united in October 1991, at the 'First National People of Color Environmental Leadership Summit'. Here a reference document was adopted, the seventeen 'Principles of Environmental Justice', which combined elements of distributive justice, participatory justice, and compensatory justice (see **Box 1**).[47]

The first and most fundamental success of this movement was the adoption by President Clinton, on the 11th of February 1994, of *Executive Order* No 12898 (Federal Address Environmental Justice in Minority Populations and Low-Income Populations), which orders all federal agencies to "make achieving environmental justice part of its mission"[48].

Environmental justice is defined by the US Environmental Protection Agency as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies"[49]. This definition contrasts with another, which states that:

> Environmental justice challenges discrimination and disparities in the allocation of the benefits and burdens of economic development. If it fights against the discriminatory practices of dumping hazardous waste and toxic chemicals and placing waste disposals, incinerators, depots, and transportation routes in communities inhabited by people of color and poor people.[50]

[45] UNGA Res. 66/288 (27 July 2012). UN Doc A/RES/66/288.

[46] See amongst other M. Prieur. 'De l'urgente nécessité de reconnaître le principe de "non régression" en Droit de l'Environnement' (2011) 1 IUCN Academy of Environmental Law e-Journal ;M. Prieur and G. Sozzo (eds), *La non régression en droit de l'environnement* (Bruylant, Brussels 2012)

[47] The literature on the environmental justice movement is vast. Among the classics, see B. Bryant and P. Mohay (eds), *Race and the Incidence of Environmental Hazards* (Westview Press, Boulder 1992);R. Bullard (ed), *Dumping in Dixie: Race, Class, and Environmental Quality* (3rd edn Westview Press, Boulder 2000) 256;D. E. Newton, *Environmental Justice: A Reference Handbook* (2nd edn Abc-Clio Inc., Santa Barbara 2010).

[48] 59 Fed. Reg. 7629 (Feb. 16, 1994), § 1-101.

[49] At <www.epa.gov/environmentaljustice/> (accessed 24 April 2013).

[50] F. Chioma Steady, Environmental justice in the new millennium: global perspectives on race, ethnicity, and human rights (Palgrave Macmillan, New York etc. 2009) 283, 1-2.

Box 1 The Principles of Environmental Justice (EJ)
Source: First National People of Color Environmental Leadership Summit, 1991

WE, THE PEOPLE OF COLOR, gathered together at this multinational People of Color environmental Leadership Summit, to begin to build a national and international movement of all peoples of color to fight the destruction and taking of our lands and communities, do hereby re-establish our spiritual interdependence to the sacredness of our Mother Earth; to respect and celebrate each of our cultures, languages and beliefs about the natural world and our roles in healing ourselves; to ensure environmental justice; to promote economic alternatives which would contribute to the development of environmentally safe livelihoods; and, to secure our political, economic and cultural liberation that has been denied for over 500 years of colonisation and oppression, resulting in the poisoning of our communities and land and the genocide of our peoples, do affirm and adopt these Principles of Environmental Justice:

The Principles of Environmental Justice

1) Environmental Justice affirms the sacredness of Mother Earth, ecological unity and the interdependence of all species, and the right to be free from ecological destruction.
2) Environmental Justice demands that public policy be based on mutual respect and justice for all peoples, free from any form of discrimination or bias.
3) Environmental Justice mandates the right to ethical, balanced and responsible uses of land and renewable resources in the interest of a sustainable planet for humans and other living things.
4) Environmental Justice calls for universal protection from nuclear testing, extraction, production and disposal of toxic/hazardous wastes and poisons and nuclear testing that threaten the fundamental right to clean air, land, water, and food.
5) Environmental Justice affirms the fundamental right to political, economic, cultural and environmental self-determination of all peoples.
6) Environmental Justice demands the cessation of the production of all toxins, hazardous wastes, and radioactive materials, and that all past and current producers be held strictly accountable to the people for detoxification and the containment at the point of production.
7) Environmental Justice demands the right to participate as equal partners at every level of decision making, including needs assessment, planning, implementation, enforcement and evaluation.
8) Environmental Justice affirms the right of all workers to a safe and healthy work environment without being forced to choose between an unsafe livelihood and unemployment. It also affirms the right of those who work at home to be free from environmental hazards.
9) Environmental Justice protects the right of victims of environmental injustice to receive full compensation and reparations for damages as well as quality health care.
10) Environmental Justice considers governmental acts of environmental injustice a violation of international law, the Universal Declaration On Human Rights, and the United Nations Convention on Genocide.
11) Environmental Justice must recognise a special legal and natural relationship of Native Peoples to the U.S. government through treaties, agreements, compacts, and covenants affirming sovereignty and self-determination.
12) Environmental Justice affirms the need for urban and rural ecological policies to clean up and rebuild our cities and rural areas in balance with nature, honoring the cultural integrity of all our communities, and provided fair access for all to the full range of resources.
13) Environmental Justice calls for the strict enforcement of principles of informed consent, and a halt to the testing of experimental reproductive and medical procedures and vaccinations on people of color.
14) Environmental Justice opposes the destructive operations of multi-national corporations.
15) Environmental Justice opposes military occupation, repression and exploitation of lands, peoples and cultures, and other life forms.
16) Environmental Justice calls for the education of present and future generations which emphasises social and environmental issues, based on our experience and an appreciation of our diverse cultural perspectives.
17) Environmental Justice requires that we, as individuals, make personal and consumer choices to consume as little of Mother Earth's resources and to produce as little waste as possible; and make the conscious decision to challenge and reprioritise our lifestyles to ensure the health of the natural world for present and future generations.

Delegates to the First National People of Color Environmental Leadership Summit held on October 24-27, 1991, in Washington DC, drafted and adopted these 17 principles of Environmental Justice. Since then, the Principles have served as a defining document for the growing grassroots movement for environmental justice.

Environmental justice clearly incorporates the idea of the denouncing exclusion from decision-making and participatory processes. This becomes even more important when the concept is extrapolated to the international level:

> The term ‘environmental injustice’ implies any undue or undeserved imposition of environmental harm on innocent bystanders who are not directly involved in the industry or market operation generating such harm. It also involves the failure to include minority communities in decisions concerning undesirable environmental

> outcomes of industrial activities posing potential threats to their livelihood, health, and well-being.[51]

The first academic studies on 'environmental justice' came from political science and sociology. Published in the 1990s in the United States, they were primarily focused on the movement itself and its effect on the political system of the United States. Toward the end of the 1990s, important theoretical studies came from the UK, drawing from a sense of vindication from within the American movement to analyse the interrelation between social justice, citizen participation, and environmental sustainability.[52] In this context, Julian Agyeman formulated the concept of 'just sustainability', bringing together the key dimensions of environmental justice and sustainable development.[53] In his website he defines 'just sustainability' as:

> …the need to ensure a better quality of life for all, now and into the future, in a just and equitable manner, whilst living within the limits of supporting ecosystems.'[54]

Environmental justice is defined by the EPA as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies"

These contributions have contributed academic credibility to the notion of environmental justice, for instance inserting the demands of the American movement into theoretical debates on Rawlsinan distributive justice, and enabling reinterpretation on the basis of Amartya Sen's and Martha Nussbaum's 'capability approach'[55]. Sen and Nussbaum begin with a distributive conceptualisation of justice, but extend beyond the formal approach of Rawls' theory[56], to lend EJ a more functional character. The approach of these authors is to shift emphasis from the mere social distribution of goods, to the ability of the human person - both in their individual and collective dimension - to use the goods at their disposal to develop the necessary functions to cover their needs. A fair society would therefore be one in which the state plays an active role in the distribution of goods, and of the individual and collective capacities needed to meet those needs. The determination of the capacities and features necessary for the political, economic, social and cultural development of society must take place in public and deliberative decision making framework. Therefore, the conception of justice according to Sen and Nussbaum is not limited to a distributive dimension, but necessarily includes a procedural or participatory dimension. Unlike Rawls'

[51] F. O. Adeola, 'From Colonialism to Internal Colonialism and Crude Socio-Environmental Injustice: Anatomy of Violent Conflicts in the Niger Delta of Nigeria' in F. Chioma Steady (ed), *Environmental Justice in the New Millenium: Global Perspectives on Race, Ethnicity, and Human Rights* (Palgrave Macmillan 2009) 148.

[52] See A. Dobson, *Justice and the Environment: Conceptions of Environmental Sustainability and Theories of Distributive Justice* (OUP 1998) 280. See also N. Low and B. Gleeson, *Justice, Society, and Nature: An Exploration of Political Ecology* (Routledge 1998) 257.

[53] See J. Agyeman, R. Bullard and B. Evans (eds), *Just Sustainabilities: Development in an Unequal World* (The MIT Press, London 2003) 367;J. Agyeman, *Sustainable Communities and the Challenge of Environmental Justice* (NYU Press, New York 2005).

[54] See <http://sites.tufts.edu/julianagyeman/> (last accessed 22 July 2013).

[55] As in all of this, the reformulations of Rawls liberal theory on distributive justice taken on by Amartya Sen and Martha Nussbaum are not the only theoretical workings that have been incisive in academic debates on ecological justice and environmental justice. There have been notable Cosmopolitan and Neo-Kantian contributions, just like the communitarian or Neo-Marxists theories in these debates. See the general characteristics concerning this issue, D. Schlosberg, *Defining Environmental Justice: Theories, Movements, and Nature* (OUP 2007) 238, 11-4.

[56] J. Rawls, *A Theory of Justice* (revised edn Harvard UP 1999).

theory of justice, Sen's and Nussbaum's theory (which notably, has inspired the United Nation's Human Development Index) allows a better consideration of the environmental factors that affect people's individual and collective capacities for human development and social, economic, and cultural functioning or flourishing[57].

2.4 The extrapolation of environmental justice at international level and in the theory of international law

In the last century the world has seen an irruption of popular and state logic. The same period has seen the growth of various movements linked with peace, human rights, and the environment. The resultant transnational activity of individuals through a variety of non-governmental associations and less institutionalised social movements[58] is putting increased pressure on states for direct participation in world affairs. Civil society networks continue to grow and become more sophisticated and more flexible in their organisations and activities, supported by the use of information and communication technologies.

An area where such networks have arguably had a great deal of influence is that of the international protection of human rights, promoting the adoption of various treaties and other international legal texts in universal and regional areas, along with specific protective mechanisms. These mechanisms take the form of quasi-judicial bodies of control, international human rights courts, and other mechanisms of protection unrelated to specific treaties, such as those developed by the Human Rights Council of the United Nations (and its predecessor the Human Rights Commission).

Growing transnational activity through non-governmental associations and less formalized social movements is putting increasing pressure on states to allow direct participation in world affairs

Another area of relevance in international law (emerging at the end of the Second World War) is focused on serious human rights violations. Of particular interest is the area of individual criminal responsibility for crimes of particular international significance, especially war crimes, genocide and crimes against humanity. National and international criminal courts act in a complementary way in order to prosecute these cases, yet, consensus on the most serious crimes of international concern continues to be characteristically weak, and excludes most economic and environmental offences, even if some of them - such as those involving corruption, bribery or money laundering - should be prosecuted by domestic courts.

[57] M. C. Nussbaum. 'Capabilities as Fundamental Entitlements: Sen and Social Justice' (2003) 9 *Feminist Economics* 33;A. Sen, *Commodities and Capabilities* (OUP 1985);A. Sen, 'Capability and Well-Being' in M. C. Nussbaum and A. Sen (eds), *The Quality of Life* (Clarendon Press 1993) 30;A. Sen. 'Human Rights and Capabilities' (2005) 6 *Journal of Human Development* 151; A. Sen, *The Idea of Justice* (Allen Lane 2009).

[58] Rajagopal (n 7), ch 8.

Box 2 Constitution of Ecuador, 2008

CHAPTER SEVEN

Rights of nature

Article 71. Nature, or Pacha Mama, where life is reproduced and occurs, has the right to integral respect for its existence and for the maintenance and regeneration of its life cycles, structure, functions and evolutionary processes.

All persons, communities, peoples and nations can call upon public authorities to enforce the rights of nature. To enforce and interpret these rights, the principles set forth in the Constitution shall be observed, as appropriate.

The State shall give incentives to natural persons and legal entities and to communities to protect nature and to promote respect for all the elements comprising an ecosystem.

Article 72. Nature has the right to be restored. This restoration shall be apart from the obligation of the State and natural persons or legal entities to compensate individuals and communities that depend on affected natural systems.

In those cases of severe or permanent environmental impact, including those caused by the exploitation of nonrenewable natural resources, the State shall establish the most effective mechanisms to achieve the restoration and shall adopt adequate measures to eliminate or mitigate harmful environmental consequences.

The connection between the environment and human rights is evident from many points of view.[59] A healthy environment is a precondition for the enjoyment of many fundamental human rights. In most constitutions, a right to the environment has become recognised in one way or another, and in some cases (as in that of Ecuador) nature has even been recognised as a holder of rights. Moreoever, a particular category of procedural rights, related for example to access to information, participation in decision-making and access to justice in environmental matters has been promoted. It can therefore be reasonably concluded that both of these areas of international law - environment and human rights - can be useful for situations of serious environmental damage, as long as it is possible to relate environmental damages to the violation of rights recognised in the respective legal frameworks of human rights protection. However, in terms of international criminal law, environmental issues are only recognised collaterally, as a side-effect of certain war crimes[60]. Apart from such exceptions, serious damage to the environment, or 'environmental crimes', are exempt from international individual criminal responsibility and from the competence of international criminal courts.

In the aforementioned trend towards the increasing visibility of individuals in international law, the connection between the environment and human rights has made it easier to generate ties between victims of social rights violations (including those related to the quality of life and the environment), activists and

In the trend toward the increasing visibility of individuals in international law, the connection between the environment and human rights has made it easier to generate ties between victims of social rights violations, activists, and the academic world

[59] A. Pigrau, S. Borràs, J. Jaria and A. Cardesa-Salzmann, *Legal Avenues for EJOs to Claim Environmental Liability*. EJOLT Report No. 4 (ejolt.org), 22-30. In reference to this, see: Commission of Human rights, "Los derechos humanos y el medio ambiente", Final report of the Special Rapporteur Ms. Fatma Zohra Ksentini; UN Doc E/CN.4/Sub.2/1994/9 (6 July 1994). K. Bosselmann, 'Human Rights and the Environment: Redefining Fundamental Principles?' in B. Gleeson and N. Low (eds), *Governance for the Environment: Global Problems, Ethics and Democracy* (Palgrave 2001) 118. A. Boyle. 'Human Rights or Environmental Rights? A Reassessment' (2007) 18 *Fordham Environmental Law Review* 471. F. Francioni. 'International Human Rights in an Environmental Horizon' (2010) 21 *EJIL* 41. A. Boyle. 'Human Rights and the Environment: Where Next?' (2012) 23 *EJIL* 613.

[60] For example the provisions in Aricle 8.2,b,iv, concerning armed international conflict and pillage (arts 8.2.a.iv, 8.2.b.xiii, and 8.2.e.xii) International Criminal Court Statute.

academics. This has allowed the proliferation of the concept of environmental justice into international forums, and its integration into the discipline of international relations. Authors such as Ruchi Anand (2004) or Chukwumerije Okereke (2008) have based their work on environmental justice, analyzing selected universal environmental regimes in terms of distributive and participatory justice from the North-South confrontation perspective.[61]

Fig. 2

Robert Rauschenberg, Artist-Citizen: Posters for a Better World

Earth Summit (Last Turn/Your Turn), 1991

offset lithograph

Photo credit: Art © Robert Rauschenberg/Licensed by VAGA, New York, NY

In the scope of international law, the integration of the notion of environmental justice is fully in progress. While the issues (such as intra- and inter-generational equity) that lie within a nascent framework of environmental justice are not entirely new, they have been obscured within wider perspectives on sustainable development. In this respect, one can see contributions in at least three material areas of relevance for environmental justice: the role of intragenerational and intergenerational equity in international law;[62] the special treatment given to states

[61] R. Anand, *International Environmental Justice: A North-South Dimension* (Ashgate 2004); C. Okereke, *Global Justice and Neoliberal Environmental Governance. Ethics, Sustainable Development and International Cooperation* (Routledge 2008).

[62] Among the first writings on this topic, see E. Brown Weiss, *In Fairness to Future Generations: International Law, Common Patrimony, and Intergenerational Equity* (Transnational Publishers 1989); E. Brown Weiss, 'Intergenerational Equity: A Legal Framework for Global Environmental Change' in E. Brown Weiss (ed), *Environmental Change and International Law* (UN University Press 1992) 385; D. Shelton, 'Environmental Justice in a Postmodern World' in B. J. Richardson and K. Bosselmann (eds), *Environmental Justice and Market Mechanisms: Key Challenges for Environmental Law and Policy* (Kluwer Law International 1999).

based on their level of economic development and their respective capacities;[63] and access to information, along with participation in decision-making and access to justice in environmental matters.[64] A key contribution in this regard comes from the collective work of Jonas Ebbeson and Phoebe Okowa. Published in 2009, *Environmental Law and Justice in Context*[65] *covers a range of* international legal topics, all of which systematically raise the issue of environmental justice. As André Nollkaemper asserts in his contribution to the book, the environmental justice notion is characterised by a combination of regulatory discourses - distributive justice, procedural justice, and restorative and compensatory justice - potentially affecting the formation and application processes of the rules of international law, and its relation and interaction with other legal orders' own rules[66]. The concept of environmental justice, maintains Dinah Shelton, can potentially affect the formation and application of the law by considering / calibrating four relevant factors: rights and legal titles implied in the different subjects involved; the capacities of every one of them; their respective needs; and finally, the possible historical responsibilities of each one in solving the problem to be dealt with[67].

International law contributes at least three areas of relevance for environmental justice: the role of intragenerational and intergenerational equity; the differential treatment of States depending on their degree of economic development and capacities; and access to information along with participation in decision-making and access to justice in environmental matters

2.5 Ecological and climate debt

The concepts of *ecological debt*, and more specifically, *climate debt* have been formulated from activism and incorporated into academic and diplomatic worlds. A study carried out by a group of researchers from Ghent University in 2004[68] conducted a preliminary analysis of the penetration of the concept of ecological debt in international law, particularly in the field of Multilateral Environmental Agreements. This study pointed out that unlike the concepts of ecological footprint or environmental space that have emerged from the academic world and have shifted to social movements, the concept of ecological debt has followed the opposite path.[69] The importance of the concepts, as well as the way they have evolved through particular actors and channels has also been emphasised by Roberts and Parks[70].

The concept of ecological debt was evident throughout preparations for the United Nations Conference on Environment and Development held in Rio de Janeiro in

[63] See P. Cullet, *Differential Treatment in International Environmental Law* (Ashgate 2003). L. Rajamani, *Differential Treatment in International Environmental Law* (OUP 2006).

[64] In this area there are many references. See A. Pigrau Solé (ed), *Acceso a la información, participación pública y acceso a la justicia en materia de medio ambiente: diez años del Convenio de Aarhus* (Atelier 2008).

[65] J. Ebbesson and P. Okowa (eds), *Environmental Law and Justice in Context* (CUP 2009).

[66] A. Nollkaemper, 'Sovereignty and Environmental Justice in International Law' in J. Ebbesson and P. Okowa (eds), *Environmental Law and Justice in Context* (CUP 2009) 253.

[67] Shelton (n 62).

[68] E. Paredis and others (n 5).

[69] Ibid., 21-3.

[70] Roberts and Parks (n 43).

1992[71] and was formally acknowledged in an alternative treaty agreed by the Global Forum of NGOs attending the conference. The 'Debt Treaty' of Rio 1992 for instance, points out that:

> 1. Considering that the foreign debt is the most recent mechanism of the exploitation of Southern peoples and the environment by the North, thus adding an extra burden to the historical, resource and cultural debt of the North to the South;
> 2. Considering the existence of a planetary ecological debt of the North; this is essentially constituted by economic and trade relations based on the indiscriminate exploitation of resources, and its ecological impacts (intensification of erosion and desertification, destruction of tropical forests, loss of biodiversity and growing disparities in lifestyles), including global environmental deterioration, most of which is the responsibility of the North;
> 3. Considering that the Southern countries' debt burden is a major drain on their development and ecological resources: they pay out over $50 billion more in debt service each year than they receive in new capital from the North, and yet the foreign debt continues to grow dramatically; this has rendered Southern countries totally or partially incapable of paying the debt ;[72]

The concept of ecological debt is therefore presented as an argument for addressing the injustice of the Southern countries' external debt burden, and to justify its non-payment.

The Ecuadorian organisation *Acción Ecológica* promoted a campaign for the recognition of ecological debt in the First South-South Summit, 'Towards a Debt-Free Millennium' (later taken over by Jubilee South), that took place in Johannesburg, in November 1999. *Acción Ecológica* has also conducted valuation exercises of ecological debt, for instance in relation with the operations of Chevron-Texaco in Ecuador.[73] In the same year *Christian Aid* published a work called '*Who owes who?*'[74] This title has become an international slogan for the ecological debt movement, that has grown through numerous forums, and alliances of social movements and non-governmental organisations.[75] Highlighted among them are the Southern Peoples' Ecological Debt Creditors' Alliance[76] and the European Network for the Recognition of the Ecological Debt – ENRED, created in November 2003.[77]

Ecological debt is specifically defined by the Southern Peoples' Ecological Debt Creditors' Alliance as:

[71] Generally, on this topic, see R. Warlenius, 'Organic Growth. The Development of the Concept of Ecological Debt' EJOLT (Lund February 2013) (made available by the author). Following this paper, see also A. Jernelöv, *Miljöskulden. En rapport om hur miljöskulden utvecklas om vi ingenting gör* (Allmänna Förlaget, Stockholm 1992);M. L. Robleto and W. Marcelo, 'Deuda ecológica' Instituto de Ecología Política (Santiago de Chile 1992).

[72] See "Debt Treaty", at <http://habitat.igc.org/treaties/index.htm> (accessed 24 Apr. 13).

[73] See <www.odg.cat/documents/enprofunditat/Deute_ecologic/cap6texaco.doc> (last access 12 June 2013).

[74] A. Simms, A. Meyer and N. Robins, 'Who Owes Who? Climate Change, Debt, Equity and Survival' Christian Aid (London 1999).

[75] A. Donoso. 'Deuda ecológica: de Johannesburgo 1999 a Mumbai 2004' (2004) 27 *Ecología Política* 77.

[76] See <www.deudaecologica.org> (accessed 24 Apr. 13).

[77] See <www.enredeurope.org/principal.htm> (accessed 24 Apr. 13).

> …essentially the responsibility of the industrialized Northern countries, their institutions, the economic elite and their corporations towards the progressive appropriation and control of natural resources and the destruction of the planet caused by their consumption and production patterns, affecting local sustainability and the future of humanity.[78]

According to Joan Martínez Alier, the debt accumulates, with Northern countries indebted to Southern countries for two reasons: firstly, due to the export of primary products at very low prices that do not include the cost of environmental damages caused at extraction and processing sites, or of cost of pollution on a global scale (also referred to as 'ecologically unequal exchange'); and secondly because of the disproportionate, free or very cheap occupation of space and environmental services - atmosphere, water, land - when depositing or emitting waste derived from production processes.[79]

The ecologically unequal exchange resulting from trade between countries is a structural, physical phenomenon (whereby metropolitan economies rely on cheap imports of raw materials and energy from peripheries) that can be measured using calculations of material flows, amount of land surface used for export, and hours of labour embodied. Among the environmental damages not included are those related to environmental liabilities from private or state companies,[80] to biopiracy, as well as those attributed to the expropriation of useful plants and knowledge about plants. Regarding the second aspect, that is to say, the occupation of space and environmental services, probably the clearest examples are the climate debt (or carbon debt) because of disproportionate historical and present emissions of greenhouse gases, the unremunerated occupation of carbon sinks and the atmosphere, and the disposal of toxic wastes in the sea.

In the Ghent University study previously mentioned, ecological debt is proposed as an aggregate of three components, based on the two ideas of ecological damage and disproportionate use of ecosystems prejudicing others:

> The ecological debt of country A consists of (1) the ecological damage[81] caused over time by country A in other countries or in an area under jurisdiction of another country through its production and consumption patterns, and/or (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 ecosystem goods and services[82] over time by country A at the

Ecological debt is debt accumulated by Northern countries towards Southern countries for:
a) export of primary products at very low prices, not including the environmental damages caused at extraction and processing sites or pollution on a global scale; and
b) the disproportional, free or very cheap occupation of space and environmental services when depositing or emitting waste derived from production processes

[78] See <www.deudaecologica.org/Que-es-Deuda-Ecologica> (accessed 24 Apr. 13).

[79] J. Martínez-Alier, *The Environmentalism of the Poor. A Study of Ecological Conflicts and Valuation* (Edward Elgar 2003) 213ff.

[80] For a representative selection of court cases concerning environmental liabilities of private and state companies, see A. Pigrau, S. Borràs, J. Jaria and A. Cardesa-Salzmann, 'Legal Avenues for EJOs to Claim Environmental Liability' *EJOLT Report No. 4* (June 2012).

[81] 'Ecological damage' would include three categories: *contamination*, understood as the introduction of substances into the environment in quantities higher than those naturally based there, causing harm to human beings, animals, and ecosystems plants and the cultural and social heritage. *Over-use* or the extraction and use of natural resources at a rate or level which means that the extraction is time-limited at a certain quality level. *Degradation* that implies a structural change in landscape and/or ecosystems, provoking a quality reduction in the diversity or productivity of this landscape or ecosystems. Paredis and others (n 5), 53.

[82] Ecosystems count for many and varied goods and services. They supply amongst others, water and air, food, fuel energy, soil regeneration, biodiversity, medicine, climate, plagues and disease control recreation. Ecosystems also serve as drains and landfills by assimilating up to a certain point, solid,

The concept of ecological debt raises important legal issues: the determination of the date from which to calculate the debt; debtor and creditor identification; definition of damage and content of repair; damage identification, identification of relevant ecosystems and the goods and services supplied by them; and the definition of equitable rights corresponding to each country or individual

> expense of the equitable rights to these ecosystems and ecosystem goods and services by other countries or individuals.[83]

The study notes that this is a potentially powerful concept, but as it is under development, there are challenges in making it operational:

> There seems to be a general understanding of what ecological debt is, but there is no univocal definition: definitions differ between texts and actors, definitions change over time, terms are differently interpreted. Furthermore, there is no agreed upon methodology to calculate ecological debt, either in physical or in monetary terms. […] Another proof that the concept is still developing, is the fact that the discussion on what should be done politically with ecological debt is very limited.[84]

None of this precludes calculation of the ecological debt. An analysis of the environmental costs of human activities over 1961–2000 instance, was carried out in six categories - climate change, stratospheric ozone depletion, agricultural intensification and expansion, deforestation, overfishing, and mangrove conversion - quantitatively connecting costs borne by poor, middle-income, and rich nations to specific activities by each of these groups.[85]

Be that as it may, these challenges offer some explanation as to why the "usefulness of ecological debt in international policy and negotiations seems at the moment rather limited"[86]. Indeed, the concept of ecological debt seems to be raised exclusively on the level of interstate relations, with some states being debtors and the rest being creditors. Reality however, is much more complex.

As the study undertaken in the Ghent University highlights, the concept thus presented raises some important legal issues pertaining to: the determination of the date from which to calculate the debt; debtor and creditor identification; the definition of damage and the content of repair; damage identification and determination and evaluation of the original causal relationship; identification of relevant ecosystems and the goods and services supplied by them; and the definition of equitable rights corresponding to each country or individual. These all need further development to be operational at the legal level.

For example, from the debtors' point of view, considering only states is akin to attributing a proportional part to each citizen. This could be equitable if it is the whole country that seems to have benefited, but would be a lot less equitable if the benefit has gone to a company registered in that country, the shareholders of which might be mainly or completely, nationals from another country. Instead we would argue that all of those groups in power that have collaborated to promote

liquid and gaseous waste produced by society. In this way, ecosystems have a cultural impact as they have an influence on the way of life of the communities that inhabit them, which can be grouped into important categories (climate regulation, raw materials, energy resources and food and water supply Paredis and others (n 5), 56-8.

[83] Ibid., 50. Note the interesting considerations that authors bring in suggesting several areas of refinement in the proposed concept; at 50-61.

[84] Ibid., 82-3.

[85] U. T. Srinjyasan and others. 'The Debt of Nations and the Distribution of Ecological Impacts from Human Activities' (2008) 105 *Proceedings of the National Academy of Sciences* 1768. For further examples and an own calculation, see Warlenius (n 71).

[86] Supra n 5.

and enrich themselves within the dynamic of environmental and ecosystem destruction in Southern countries should also be considered as debtors. It is certainly arguable that any and all international and financial organisations that have promoted or financed projects with damaging impacts on environment and the ecosystem should rightfully be considered as debtors.

From the creditors' point of view, with regard to the first component of the debt (according to its aforementioned definition by Paredis et al.), it would be specific states, and not necessarily all Southern states that would be liable, since the ecological debt concept can also be applied between Southern countries. There is an important outstanding issue of how one can ensure that the benefits of the eventual payment of a debt reach the citizens of the creditor countries who have been directly affected by the damage. In such cases, it seems that an important creditor would be future generations, legally unrepresented under the current international legal remit.

From the damage repair point of view - from contamination, over-use or degradation - the content of compensation should be directed to victims of the same, but also toward the restoration of the damaged ecosystem. There should also be room for other forms of compensation for other sorts of damages difficult to measure, such as irreversible loss of biodiversity, destruction of livelihoods or effects on the cultural identity of communities.

An especially complex task relates to the determination of the reach of equal rights in relation to ecosystem goods and services. In any case the concept of equity is related in international law to the consideration of the specific circumstances of the case that are relevant and that can modify an egalitarian allowance, on a state or *per capita* basis. These circumstances can relate to the geographic scope of the ecosystem and the goods and services supplied. In the interstate remit, these include technological and financial capacity, the historical path in the use of ecosystems, or the degree of human development achieved. In the interindividual remit, such circumstances pertain to individual income, basic housing needs, food, health and drinking water, and the preservation of life forms and knowledge of indigenous communities.

However, other related impacts would remain outside the concept's scope. Beyond what may be regarded as purely ecological damage, the economic model that has caused environmental devastation and overexplotation of natural resources also has other impacts: social (namely, the dissolution of the social and economic fibre and cohesion of local communities); cultural (forced displacements and loss of territories, decay of ancestral traditions and practices, loss of cultural identity); sanitary (illnesses, psychological problems); and, more generally, impacts on the enjoyment of a dignified life for all persons.

Although the concept is fundamentally orientated in the present to correcting accumulated past injustices, eventual correction would not be enough to prevent injustice from repeating in the future. Moreover, a core obstacle that arises with a legal formulation of the concept of ecological debt is that the political conditions needed to open a formal debate on the topic in intergovernmental forums do not

The dual assertion of the existence of a high vulnerability to the negative effects of climate change in the poorest countries and of the limited responsibility of these countries in the emission of greenhouse effect gases has highlighted perceptions of the existence of climate injustice as a specific form of ecological debt

exist. This is largely because those having used this concept did it in a justifying sense to get better results in political negotiations through the application of certain correcting principles rather than as a concept itself intended to produce legal consequences.

This is in fact, how the ecological debt debate came to be introduced into diplomatic forums. In the year 2000, the Group of 77 and China in the so-called 'Declaration of the South Summit' affirmed: "We advocate a solution for the serious global, regional and local environmental problems facing humanity, based on the recognition of the North's ecological debt and the principle of common but differentiated responsibilities of the developed and developing countries"[87].

Among emergent concepts of environmental international law, maybe the one most related to the ecological debt is the notion of 'common but differentiated responsibilities' (CBDRP), that appears, in the United Nations Framework Convention on Climate Change (UNFCCC), in 1992, among other multilateral environmental agreements:

> The link with ecological debt is twofold: first of all, this principle recognizes the historical responsibility of industrialized countries regarding worldwide environmental problems and, secondly, this recognition is used as a basis for developed countries to take more far-reaching measures than developing countries.[88]

A significant reference to the concept of ecological debt took place in June 2009, when Bolivia, representing Malaysia, Paraguay and Venezuela, proposed an amendment to the Kyoto Protocol to the secretary of the United Nations Convention on Climate Change. The text established related commitments to reducing emissions of greenhouse gases, and referred to those commitments and the application of a *principle of historical responsibility/debt,* stating that:

> In determining the commitments in paragraph 1 of this Article, the following criteria are taken into account in order to ensure consistency with the ultimate objective of the Convention and the principles of equity and common but differentiated responsibilities and respective capabilities: (a) Responsibility of Annex I Parties, individually and jointly, for current atmospheric concentrations of greenhouse gases; (b) The historical and current per-capita emissions originating in developed countries; (c) Technological, financial and institutional capacities; and (d) The share of global emissions required by developing countries in order to meet their social and economic development needs, to eradicate poverty and to achieve the right to development.[89]

[87] Group of 77, South Summit, Havana, Cuba, 10-14 April 2000, *Declaration of the South Summit*, para.45. Available at <www.g77.org/summit/Declaration_G77Summit.htm> (accessed 24 Apr. 13).

[88] Paredis and others (n 5), 91. The significance of this principle is also highlighted in K. Mickelson. 'South, North, International Environmental Law, and International Environmental Lawyers' (2000) 11 *Ybk Intl Envtl L* 58, 69-78; and by J. Brunnée, 'Climate Change, Global Environmental Justice and International Environmental Law' in J. Ebbesson and P. Okowa (eds), *Environmental Law and Justice in Context* (CUP 2009) 316. With respect to the protection of the ozone layer, see also K. Mickelson, 'Competing Narratives of Justice in North-South Environmental Relations: The Case of Ozone Layer Depletion' in J. Ebbesson and P. Okowa (eds), *Environmental Law and Justice in Context* (CUP 2009) 297.

[89] Report of the Conference of the Parties Serving as the Meeting of the Parties to the Kyoto Protocol, Fifth session, Copenhagen, 7–18 December 2009. UN Doc FCCC/KP/CMP/2009/12 (17 June 2009).

The dual assertion of the existence of a high vulnerability to the negative effects of climate change in the poorest countries (desertification, rising of sea level, exposure to extreme weather events such as hurricanes, typhoons, heat waves or floods) and of the limited responsibility of these countries in the emission of greenhouse effect gases has highlighted perceptions of the existence of climate injustice as a specific form of ecological debt which must be assumed by the richest countries. According to Roberts and Parks the concept 'climate justice' was first used in the academic literature by Henry Shue in 1992.[90]

To defend the idea of climate justice, non-governmental ecologist organisations and groups of victims have joined efforts to shape numerous international networks, such as *The Rising Tide Coalition for Climate Justice*[91], *The Environmental Justice Climate Change Initiative,*[92] *Climate Justice Now,*[93] *Climate Justice Action*[94] and the *Network for Climate Justice,* promoted in Europe by Friends of the Earth.[95]

Concern for the consequences of climate change has also been consistently expressed by some countries that are especially vulnerable to its increased risks, such as droughts, floods, storms, rising as levels, and greater uncertainty in agriculture. According to the WB, the most vulnerable countries are developing small island states, various countries in Africa, countries with mega-deltas (especially in Asia), and the polar regions. Countries at particular risk are Malawi, Ethiopia, Bangladesh, Philippines, Sudan, Vietnam and numerous Island states, especially in the areas of the Caribbean, Indian and South Pacific, such as

[90] H. Shue, 'The Unavoidability of Justice' in A. Hurrel and B. Kingsbury (eds), *The International Politics of the Environment: Actors, Interests and Institutions* (Clarendon Press 1992) 373. They acknowledge, though, that Edith Brown Weiss also came pretty close to this notion that year; see Brown Weiss (n 62), 345-51. See also E. Neumayer. 'In Defence of Historical Accountability for Greenhouse Gas Emissions' (2000) 33 *Ecological Economics* 185; H. Shue. 'Global Environment and International Inequality' (1999) 75 *International Affairs* 531.

[91] Created in 2000, and defined in its web as: "Rising Tide is a grassroots international network of groups and individuals who take direct action to confront the root causes of climate change and to promote local, community-based solutions to the climate crisis. It is part of a wider global movement for social and ecological justice". Rising Tide believes "that the Kyoto protocol will fail to combat the climate change crisis. Instead the protocol promotes the self-interest of corporations and industrialised nations and marginalises issues of global equity and the environment." At <http://risingtide.org.uk/about/political> (accessed 24 Apr. 13).

[92] Created in April 2001 and linked with environmental justice networks, "the mission of the Environmental Justice Climate Change Initiative (EJCC) is to educate and to activate the people of North America towards the creation and implementation of just climate policies in both domestic and international contexts." At <www.ejcc.org/about> (accessed 24 Apr. 13).

[93] It was created at the COP 13 of the UNFCC, held in Bali, Indonesia, in March 2007; see <http://climatejusticenetwork.org/> (accessed 24 abr. 13).

[94] Created at the COP 15 of the UNFCCC, held in Copenhagen, Denmark in December 2009 "CJA is a transnational non-hierarchical direct action network that serves as a resource base for exchange of experiences and seeks to connect and give visibility to (localised) struggles in order to be a tool for movement building. We consider ourselves part of the broader movements for climate and social justice." See <www.climate-justice-action.org/about/> (accessed 24 Apr. 13). See also the activities of the Durban Group for Climate Justice, as detailed at Bond, P., Sharife, K., Allen F., Amisi B., Brunner K, Castel-Branco, R., Dorsey D., Gambirazzio, G., Hathaway, T., Nel, A., Nham, W., 2012. 'The CDM cannot deliver the money to Africa. Why the Clean Development Mechanism won't save the planet from climate change, and how African civil society is resisting', *EJOLT Report No. 2*, 16-9.

[95] See <http://climatejusticenetwork.org/> (accessed 24 Apr. 13).

Comoros, Haiti, Kiribati, Maldives, Samoa, Solomon Islands, Tuvalu, Vanuatu and Timor-Leste.

In the diplomatic realm, the climate justice claim has been related to negotiations in the COP on climate change, from as early as COP 8 held in New Delhi, India in 2002. Claims intensified after COP 13 in Bali, Indonesia, in 2007,[96] and again after COP 14, in Poznan, Poland, 2008.[97] At COP 15, in Copenhaguen, 2009, the declaration 'Repay the Climate Debt. A Just and Effective Outcome for Copenhagen' was signed by 254 organisations, According to the declaration:

> For their disproportionate contribution to the causes and consequences of climate change, developed countries owe a two-fold climate debt to the poor majority:
> • For their excessive historical and current per person emissions – denying developing countries their fair share of atmospheric space – they have run up an 'emissions debt' to developing countries; and
> • For their disproportionate contribution to the effects of climate change – requiring developing countries to adapt to rising climate impacts and damage – they have run up an 'adaptation debt' to developing countries.
> Together the sum of these debts – emissions debt and adaptation debt – constitutes their climate debt, which is part of a larger ecological, social and economic debt owed by the rich industrialized world to the poor majority., the developed countries owe a two-fold debt to the developing countries: an emissions debt and an adaptation debt, together making up total climate debt.[98]

The climate debt campaign was also brought into negotiations, mainly by Bolivia, at a session in Bonn in June 2009, where countries such as Lesotho, Cuba, Dominican Republic, Honduras, Nicaragua, Venezuela and Sri Lanka spoke out in favour of climate debt repayment on behalf of the 49 least developed countries.[99] The campaign has referred to the most vulnerable situation in certain countries, but also to the most vulnerable locations within the countries.[100]

The attempts of indigenous Inuit and Inupiat peoples for example, to bring claims before the Inter-American Commission on Human Rights and the Federal Courts of the United States[101] respectively, have come up against considerable difficulties. This is because the current legal framework is not capable of dealing

[96] H. Ott, W. Sterk and R. Watanabe. 'The Bali Roadmap: New Horizons for Global Climate Policy' (2008) 8 *Climate Policy* 91.

[97] Ibid.

[98] Available at <www.twnside.org.sg/announcement/sign-on.letter_climate.dept.htm > (accessed on 6 Sept. 2013).

[99] Warlenius (n 71).

[100] J. T. Roberts and B. C. Parks, *A Climate of Injustice: Global Inequality, North-South Politics, and Climate Policy* (MIT Press 2007).

[101] Petition to the Inter-American Commission on Human Rights seeking relief from violations resulting from global warming caused by acts and omissions of the United States, submitted by Sheila Watt-Cloutier, with the support of the Inuit Circumpolar Conference, on behalf of all Inuit of the Arctic regions of the United States and Canada (7 December 2005). Available at <http://inuitcircumpolar.com/files/uploads/icc-files/FINALPetitionICC.pdf> (accessed: 24 Apr. 13). See also S. Watt-Cloutier, Global Warming and Human Rights (CIEL 2007); at <www.ciel.org/Climate/IACHR_Inuit_5Mar07.html> (accessed: 24 Apr. 13). US District Court of the Northern District of California, Oakland Div. Case: 08-cv-01138- SBA Doc. 194, filed 09/30/09; Court of Appeals for the Ninth Circuit, No. 09-17490 D.C. No. 4:08-cv-01138-SBA, Opinion, Filed September 21, 2012. See also: *Report of the Office of the High Commissioner for Human Rights on the Relationship Between Climate Change and Human Rights*, U.N. Doc. A/HRC/10/61 (15 January 2009).

with cases in which contamination stems from multiple sources and accumulates over time, making it impossible to prove a cause-effect relationship with a specific pollution source.

A practical example of an attempt to implement the principle of CBDRP may be found in the recently established Green Climate Fund (GCF), the aim of which is to:

> promote the paradigm shift towards low-emission and climate-resilient development pathways by providing support to developing countries to limit or reduce their greenhouse gas emissions and to adapt to the impacts of climate change, taking into account the needs of those developing countries particularly vulnerable to the adverse effects of climate change.[102]

Beyond the principle of CBDRP and its application in the international climate change regime, the concept of ecological debt seems to have a clear connection with concepts of intragenerational and intergenerational equity[103]. It is therefore also necessary to think about ecological debt on two levels – interstate, and on the level of people and communities within states. The concept of ecological debt is also related to the more consolidated 'polluter-pays principle' that establishes the allocation of economic obligations for activities that damage the environment.[104]

There are additional international regimes in which the impact of the various components of ecological debt is reflected. One is related to biodiversity protection, while others that stand out relate to the use of genetic resources and the transboundary movement of hazardous waste.

Box 3 Rio Declaration on Environment and Development (Rio de Janeiro, 3-14 June 1992)
Source: UN Doc A/CONF.151/26/Rev.1 (Vol. I)

Principle 7

States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit to sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.

[102] See <http://gcfund.net/about-the-fund/mandate-and-governance.html> (last access: 25 July 2013).

[103] "The principle of equity is central to the attainment of sustainable development. It refers to both inter-generational equity (the right of future generations to enjoy a fair level of the common patrimony) and intra-generational equity (the right of all peoples within the current generation of fair access to the current generation's entitlement to the Earth's natural resources)." International Law Association Res 3/2002, New Delhi Declaration of Principles of International Law Relating to Sustainable Development (6 April 2002). Available at <www.ila-hq.org/en/committees/index.cfm/cid/25> (accessed: 24 Apr. 13).

[104] Paredis and others (n 5), 89-94.

3

Sustainable development, an unattainable goal?

by Susana Borràs

The concept of sustainable development arose in response to the environmental crisis. Far from being a recent phenomenon, the crisis became a leading issue in the 1960s. In the last decades of the 20th century the most serious socio-environmental problems generated by neoliberalism started to become evident. The environmental problem became symptomatic of a crisis of civilisation, raising questions about the bases of economic rationality, the values of modernity, and the fundamentals of science that had fractioned knowledge about the world. In this way, the need arose for a new foundation for ecological sustainability and social equity in the development process.

The idea of sustainable development was formalised and disseminated by the World Commission on Environment and Development (WCED), created by the General Assembly of the United Nations at the end of 1983.[105] In its final report published in 1987 with the title 'Our Common Future' (better known as the Brundtland Report, named after the Commission's President), sustainable development is defined as:

> the development that meets the needs of the current generation without compromising the ability of the future generations to satisfy their own needs. It encompasses two fundamental concepts: the concept of 'needs', in particular the essential needs of the poor, to which overriding priority should be given and the idea

[105] UN Doc A/42/427 (4 Aug. 1987).

> of limitations imposed by the state of technology and social organisation, within the environment's ability to meet present and future needs.

Borne at the Conference in Rio de Janeiro in June, 1992, this idea aimed to resolve sometimes unsolvable contradictions and to reconcile aspirations for the economic development of the southern states, especially following the clear failure the New International Economic Order, with the concerns of developed states for protection of the environment. Thus the concept of sustainable development is a product of the evolution of the notion of development, and the recognition that there the capacity of the biosphere and its natural resources to satisfy the needs of current and future generations is limited.

This concern has been reflected in international treaties and international conferences and documents adopted at the initiative of the United Nations. The International Whaling Convention for example, adopted on the 2nd of December 1946, in its preamble, reflects an interest in achieving an optimum level of whale stocks to guarantee adequate and effective conservation of the species, making possible the orderly development of the whaling industry. The Geneva Convention on Fishing and Conservation of the Living Resources of the High Seas, adopted on the 29th April, 1958, recognises the danger of overexploitation and conceives the “conservation of living resources of the high seas” as a group of measures that permit an optimum steady yield of such resources (art. 2). The United Nations Convention on the Law of the Sea, adopted the 10th of December,1982, establishes in art. 119.1.a/ that regarding the conservation of fishing in high seas, the determination of the allowable catch will be based on the criterion of the maximum sustainable yield under relevant environmental and economical factors. In the Agreement on the conservation of nature and natural resources adopted by ASEAN in 1985, includes in art. 1.1the expression sustainable development appears for the first time.

At the Stockholm Conference on human environment (June 5-16, 1972)[106] the existence of different perceptions of environmental problems for developed and developing countries were confirmed. The former had promoted the conference in response to the harmful effects that their development had had on the environment, while the latter, participating in the conference with great reluctance, perceived the demands to adopt measures of natural resource protection as an obstacle to their development potential. The Stockholm conference was a landmark event, politically, for placing concern for the environment on the international agenda, and legally, as the birthplace of international environmental law.[107]

The Stockholm Conference on human environment (June 5-16, 1972) confirmed the existence of different perceptions of environmental problems for developed and developing countries

[106] The concept of sustainable development had already been outlined in preparatory meetings for the World Conference on Human Environment in 1972 and widely discussed in the decade of the 70s. In this regard, UNEP/UNCTAD, Symposium on Patterns of Resource. Use, Environment and development, Cocoyoc, 1974, see also: “The Cocoyoc Declaration”, in UNEP: In Defense of the Earth: The basic texts on environment, Founex, Stockholm Cocoyoc, Executive Series num. 1

[107] In it a declaration of principles was adopted, the Declaration of the United Nations Conference on Human Environment, of the 16th of June of 1972, and an Action Plan containing a magnificent diagnosis of the situation of the environment and of the main environmental problems that existed at the time. Furthermore, the General Assembly created the United Nations Environment Program

Fig. 3

United Nations Conference on Environment and Development (UNCED), 3-14 June 1992

Gro Harlem Brundtland, Prime Minister of Norway and Chairman of the World Commission on Environment and Development, addresses the Conference.

03 June 1992

Rio de Janeiro, Brazil

Photo credit: UN Photo/Michos Tzovaras

After the Stockholm conference, environmental awareness expanded worldwide. In this period, awareness also expanded of the limits of economic rationality and the challenges that environmental degradation had generated for the civilising project of modernity. In fact, the 1972 Declaration of Stockholm already contained some elements related to the concept of ecodevelopment, which the Brundtland report and the Conference of Rio drew from in articulating the idea of sustainable development (paragraph 6 of the Introduction and Principle 2). The Declaration recognised that the use of natural resources, renewable and non renewable, has limits that have to be taken into account if their future exhaustion is to be avoided (Principles 4 and 5). It also highlighted that both developed and developing countries had environmental problems even through these were due to different causes, some due to industrialisation and technological development and others due to underdevelopment (paragraph 4 of the Introduction).

The Stockholm Declaration therefore proposes that the best way to assure people a healthy and good quality environment and to solve environmental problems generated by underdevelopment, is through social and economic development (Principles 8 and 9). It incorporates the need to adopt an integrated and coordinated approach to development planning, compatible with the protection of the human environment (Principles 13 and 14), and designed in such a way that the environmental policies of states enhances rather than hinders the growth of developing countries (Principle 11). The development plans of these states should therefore receive adequate financial resources for the conservation and improvement of the environment (Principle 12). Although many of the principles underpinning Stockholm and Rio are similar, the power strategies of the dominant

(UNEP) through its Res. 2997 (XXVII) (15 Dec. 1972), with the aim of promoting international cooperation in relation to the environment and coordinating programs and projects concerning it within the United Nations system.

economic have led to the manipulation of critical environmental discourse, and its submission to the rationality of economic growth.

A decade on from the Conference of Stockholm and the formulation of the principles of ecodevelopment, developing countries became caught up in the debt crisis, inflation and economic recession. In response, growth recovery became a priority for governmental policies. Neoliberal programmes were rolled out across different countries as environmental problems advanced and became more complex. In this period the ecodevelopment argument fell out of favour, to be supplanted by the rhetoric of sustainable development.

A decade on from the Conference of Stockholm many developing countries became caught up in the debt crisis, inflation and economic recession, and economic growth became a governmental political priority

With the official introduction of the concept of sustainable development at the 1992 Conference of Río de Janeiro, growing tensions among different states interests regarding environment and development seemed to relax. Focus shifted to reaching a state of solidarity and intergenerational equity through reconciling individual with common interests in environmental protection and development, as well as interests of developed and developing countries, and current and future generations. Taking a holistic approach, the Río Declaration refers to the need to integrate environmental protection with the development process in order to achieve sustainable development (Principle 2). Soon after, a global programme known as Agenda 21 was developed and adopted to regulate the development process based on the principles of sustainability. In this way, it was hoped that a precedent had been set that would enable global policy to dissolve the contradictions between environment and development.

The 'Río' process[108] continued to evolve through subsequent reviews and evaluations. The first review and evaluation occurred in 1997 at a Special Session of the General Assembly called 'Río+5'. At Rio+5 a 'Program for the application of Agenda 21' was adopted, and poverty and social inequality due to decreased levels of official development aid and increased external debt were acknowledged as major obstacles to achieving sustainable development. The review determined a need to introduce improvements in technology transfer, to promote training for participation, to improve institutional coordination, and to introduce changes in levels of production and consumption.[109] The second review took place at the World Summit on Sustainable Development held in Johannesburg from the 26th of August to the 4th of September, 2002. 'Río+10'[110]as it was called, aimed to review and evaluate the achievement of goals since 1992, and specify clear commitments that would enable the achievement of a generalised sustainable development.[111]

[108] In 1992, the General Assembly of the United Nations established the review and evaluation of Agenda 21 every five years. See Report of the United Nations Conference on Environment and Development (Rio de Janeiro 3-14 June 1992) UN Doc A/CONF.151/26/Rev.1/Vol.I.

[109] UN Doc A/RES/S-19/2 (19 Sept. 1997).

[110] Convened by UNGA Res. 55/199 (5 Feb. 2001). UN Doc A/RES/55/199.

[111] In this Summit, held in Johannesburg from the 26th of August to the 4th of September 2002, the following documents were adopted: the Johannesburg Declaration on Sustainable Development and the Plan of Implementation (4-5 Sept. 2002) (UN Doc A/CONF.199/20). The Declaration of Principles of the International Law Association on Sustainable Development adopted on the 2nd of

The third review, held in June 2012 in Río de Janeiro at the 'Rio+20' United Nations Conference on Sustainable Development confirmed the difficulties of the past twenty years in effectively applying the concept of sustainable development, and, ultimately pointed to the serious obstacles facing the achievement of broad political agreements for coping with the severity of the environmental situation of the Planet.[112] Even so, the 'guarantee of environmental sustainability' has been declared by the United Nations as one of eight development goals for the millennium, in order to 'incorporate' sustainable development principles in policies and in national programmes and reverse the loss of natural resources".[113] The concept of sustainable development is now widely regarded to rest on three convergent pillars - economic development, social development -, and environmental protection. Development, according to proponents, is believed to be sustainable if it is economically viable, socially fair and environmentally sound.[114]

According to the mainstream literature in favour of sustainable development, these three components (economic and social development, and environmental protection) are complementary, interdependent and interrelated. Each one of them is a partial objective and a prerequisite for the achievement of the others and of the global goal of sustainable development. Therefore, their achievement requires finding a proportionate balance between economic development, social development and environmental protection, in a simultaneous, mutually enforcing way. The economic development of a society requires natural resources while generating wealth that can be used to increase social justice and environmental conservation. A society with a high level of social development guarantees political freedom and opportunities that favour economic growth and environmental awareness necessary to carry out a rational use of natural resources and allocate investments to the conservation of nature. The development triangle is a reflection of the tensions and balance of its three vertices, which constitute interdependent and mutually reinforcing pillars of sustainable development. In short, the goal of sustainable development requires a balanced integration of the three dimensions in order to ensure stability of the system: economic, social and environmental.

Economic and social development and environmental protection are complementary components of sustainable development; in practice priority is given to one of them

In practice however, priority is given to one or other of the components according to the economic, social and environmental framework of different states. Developed states focus their objectives on increasing social justice and on the protection of the environment, while economic development is the first goal of developing states, since without it, it is not possible to allocate resources to social

April 2002, also relates to generalised sustainable development, Vid. ILA New Delhi Declaration of Principles of International Law on Sustainable Development, of the 2nd of April 2002, The 70th Conference of the International Law Association, New Delhi, India, 2-6 April 2002. UN Doc. A/CONF.199/8 (9 Aug. 2002).

[112] The two central issues around which the debate revolved were the green economy in the context of sustainable development and poverty eradication and the institutional framework for sustainable development. See UNGA Res. 66/288 (27 July 2012). UN Doc A/RES/66/288.

[113] UNGA Res. 55/2 (16 Sept. 2000). UN Doc A/RES/55/2.

[114] This is the famous trio Triple Botton Line, created in 1990 by the British John Elkington, founder of the NGO *SustainAbility*.

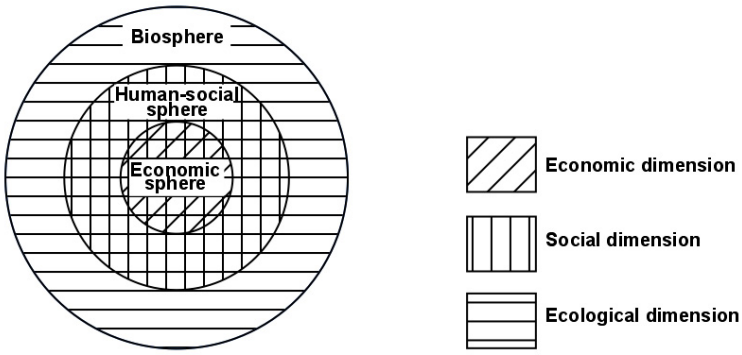
development and to environmental protection. Ecological economists have strongly challenged the 'three pillar' version. Nature existed much before human society, and human society preceded the market economy for a very long time. Ecological economists express a distaste for the 'three pillars', preferring to view relations between environment, society and economy as depicted in **Figure 1** below, with the economy embedded in the ecosystem. The economy is moreover embedded in structured property rights over environmental resources and services, and in social relations, with power and income structured along lines of gender, social class or caste.

Ecological economists also see the economy as an open system (**Fig. 4**). In thermodynamics, systems are classified as 'open' or 'closed' to the entry and exit of energy and materials, such as the Earth, and 'isolated' systems (without entry or exit of energy and materials). The availability of free energy and the cycling of materials allow life forms to become ever more organised and complex; the same applies to the economy. Dissipated energy and waste are produced in the process. If the scale of the economy is too large and its growth is too rapid, the natural cycles cannot sustainably reproduce resources or absorb or assimilate wastes, for instance, heavy metals or carbon dioxide.

Fig. 4

The economy embedded in the social system and the ecosystem

Source: René Passet, L'économique et le vivant, 1979



The ambivalence of the sustainability argument arises from the many possible meanings embodied in the term 'sustainable', which implies an internalisation of the ecological conditions of support for the economic process, and at the same time refers to the durability of the economic process itself. This ambivalence has given rise to the emergence of very different meanings of sustainable development. One view, in line with the diagnosis of the Meadows Report, *Limits to Growth* sees sustainable development as offering a framework by which production can be forecast within ecosystem limits in the long term, accepting that there are limits to economic growth, and exploring how best to transform of production and consumption patterns in industrialised countries. On the other hand, another meaning of sustainable development has evolved that favours development understood as sustained economic growth. While the contrast in these two interpretations is quite stark, it has to be said that the very ambiguity of the concept of sustainable development is what has allowed its greater acceptance by the general public.

Still, the dominant belief prevails that it will be possible to address social demands and achieve environmental recovery with positive economic growth rates. In accordance with this interpretation, development should be long-lasting/sustained, and measurable in monetary terms. Development is thus considered 'naturally' positive for Southern counties, and has to proceed at a sustained pace to avoid reversal. According to this interpretation, limits to development are not imposed by ecosystems, but by the development conditions, on which the survival of the society depends.[115] This approach represents a weak interpretation of the concept of sustainable development, one that recognises the existence of market failures, externalities and ecological costs, but advocates internalising these problems through conventional financial instruments. The result of this positioning has been an increased demand on the planet's natural resources that has exceeded ecological limits, leaving a heavy 'ecological footprint' that can be traced to the 1980s.

Neither the Bruntland Report nor the Rio Conference of 1992 or subsequent international meetings have produced a valid interpretation of sustainable development. This failure has facilitated a transition from an era of 'environmental heyday' to the current one of economic globalisation, without the need to invent a new name for the international development model. If in the seventies, the environmental crisis led to realisations of a need to put a brake on growth to prevent ecological collapse, in the nineties economic globalisation appeared as a denial. Neoliberal discourse now asserts the disappearance of contradictions between environmental preservation and growth. The market is now proposed as the optimum means of internalising ecological conditions and environmental values in the process of economic growth, signalling a shift from discursive emphasis on the balanced integration of the three pillars, and toward the so-called 'green economy', defined by UNEP as "one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities". [116]

The decline of the concept of sustainable development in favour of a 'greening' of the economy is evident in the outcome of the Rio +20 conference

The objective of contributing to a 'Green Economy' has been adopted by some companies with well-oiled marketing departments keen to demonstrate their green credentials. This had led to a proliferation of 'greenwashing', or misleading consumers about the environmental practices of companies or the environmental benefits of products or services that are often linked to causing environmental degradation and social injustice. This decline of the concept of sustainable development in favour of a 'greening' of the economy is evident in the Rio +20 conference outcome document, 'The Future We Want',[117] hailed the green economy as a vital tool for eradicating poverty, achieving sustained economic growth, increasing social inclusion, improving human welfare and creating employment opportunities and decent work for all, all while maintaining the healthy functioning of ecosystems on Earth. However, far from being an alternative to the

[115] G. Girst, *El desarrollo: historia de una creencia occidental* (Catarata 2002).

[116] See: http://www.unep.org/greeneconomy/

[117] UNGA Res 66/288 (11 Sept. 2012). UN Doc A/RES/66/288.

dominant economic model, the rationale of the green economy is premised on increasingly 'doing business with nature'.

For some, the concept of sustainable development has become a rhetorical idiom used while environmental damages continue to be inflicted and ignored. Critics such as Serge Latouche defend abandoning this concept, while others, like Riechmann, defend a reinterpretation of the concept, reinforcing the ecological and not the economic side of the concept of sustainable development.[118] EJOs have attempted to extend the prevailing discourse of modern environmentalism, based around environmental management, with the aim of incorporating considerations of social justice and equity, speaking of 'just sustainability'.[119] Faced with the impossibility of assimilating these and other critical propositions, the policy of sustainable development has become diluted, leading to the corruption of the concept of environment, and the justification of strategies of appropriation of natural resources in the context of economic globalisation. As the forces of globalisation promote sustained economic growth, the notion of 'sustainability' (like 'ecology' and 'peace'), loses significance and becomes a business opportunity.

Despite the variety of interpretations given to the concept, several global legally binding instruments on sustainable development have been agreed since the United Nations Conference on Environment and Development. These have served to promote the goals of Agenda 21 and expand the development of a legal framework that supports sustainable development across multiple scales (local, state, regional and global) and over time (intra and intergenerationally).

3.1 The integration of sustainable development into international environmental law

The integration of the concept of sustainable development into the different normative domains of international environmental law occurred largely on the heels of the Rio Conference of 1992. International environmental law was established at a time that also saw the general public growing increasingly concerned over environmental issues.

The ultimate goal of international environmental law is the protection of the common interest of mankind over and above the particular interests of states. Beyond just the survival of all human beings, the 'right' of future generations to inherit a decent environment appears as a key element in the formulation of principles and rules of 'intergenerational equity', according to the concept of

[118] S. Latouche, *Sobrevivir al desarrollo* (Icaria 2007); J. Riechmann, 'Desarrollo sostenible: la lucha por la interpretación' in J. Riechmann and others (ed), *De la economía a la ecología* (Trotta 1995) 11. However, Latouche himself abandoned long ago the concept of "development" itself, let alone "sustainable development", together with authors like Arturo Escobar, Ashish Nandy, Gustavo Esteva, and Wolfgang Sachs. See W. Sachs (ed), *The Development Dictionary. A Guide to Knowledge as Power* (2nd edn Zed Books 2010).

[119] J. Agyeman, R. Bullard and B. Evans (eds), *Just Sustainabilities: Development in an Unequal World* (MIT Press 2003).

Two normative interpretations of sustainable development have evolved respectively, in the fields of regulatory techniques and general principles

sustainable development.[120] In this sense, environmental law seeks to satisfy not only the individual interests of states in their reciprocal relations, but also, and above all, the common interest of the international community to protect and conserve the environment in which humanity inhabits.[121] For this reason, the rules of environmental law, although they seek to carry out a purpose shared by all, do not necessarily reflect (as other rules in other areas of international law do) reciprocity, or a balance between obligations and rights of states. For states, there are no immediate benefits to be derived from the application of such rules, but the enforcement of obligations and acceptance of liabilities is essential for achieving the common goal.[122]

In this context, two normative interpretations of the sustainable development concept have evolved. One is in the field of regulatory techniques, whereby conduct obligations are incorporated into international environmental treaties. These impose constraints on activities and/or behaviours that cause an impact on the environment through: obligations of asymmetric characteristics in content depending on the category of states (developed or developing) concerned; a clear relativisation of legal commitments which allows obligatory standards of environmental protection to be fixed, based on specific temporary parameters; and compensatory obligations in order to ensure a transfer of capacity from developed to developing countries, with the purpose of ensuring the achievement of the common objectives and compensation for the differences in efforts made for this work. The second interpretation is found in the field of the general principles, incorporating new principles that provide the legal framework of reference to ensure sustainable development. All new principles must necessarily coexist with the sovereign rights and duties of states, which constitute a minimum legal basis upon which the relations and behaviour of states in international society are ruled.

In this way, according to Resolution 1803 of the United Nations General Assembly (UNGA),[123] peoples and nations have the right to permanent sovereignty over their natural wealth and resources, which must be exercised in the interest of the national development and the welfare of the people of each respective state. The International Covenant on Economic, Social and Cultural Rights of 1966 makes a similar assertion in Article 1, paragraph 2, which states that “All peoples may, for their own ends, freely dispose of their natural wealth and resources without prejudice to any obligations arising out of international economic cooperation,

[120] F. Mariño, 'La protección del medio ambiente: régimen general' in M. Díez-Velasco (ed), Instituciones de derecho internacional público (12th edn Tecnos 1999) 634.

[121] The consideration of environmental protection as a common interest of humanity or as a global interest has led to the analysis by doctrine of the possibility to consider this clause as an *erga* omnes general obligation, with the consequence of being able to require the compliance of such obligations by any State not Party to a specific treaty. To further explore this issue, see J. A. Frowein. 'Reactions by Not Directly Affected States to Breaches of Public International Law' (Collected Courses of the Academy of International Law 248 The Hague 1994) 353; A. Kiss and D. Shelton, *International Environmental Law* (Transnational Publishers 2004)16ff.

[122] On this issue, see R. Wolfrum. 'The Principle of the Common Heritage of Mankind' (1983) 43 ZaöRV 312, 332ff.

[123] UNGA Resolution 1803 (XVII) (14 Dec. 1962).

based upon the principle of mutual benefit, and international law. In no case may a people be deprived of its own means of subsistence".[124]

This right expressed above transcends the sovereign power of the state when it comes to indigenous peoples. Convention No. 169 on indigenous and tribal peoples in independent countries,[125] adopted in June 1989[126] by the International Labour Organisation at its 76th International Labour Conference in Geneva, refers to the rights of independent peoples to the existing natural resources in their lands which are subject to special protection, including the right to participate in the use, management and conservation of these resources. Also, notable on a regional level, is the African Charter on Human and Peoples' Rights. Adopted by the Organisation of African Unity on the 27th of June of 1981,[127] Article 21 states that "1. All peoples shall freely dispose of their wealth and natural resources." The principle *sic utere tuo ut alienum non laedas* is the counterpart to the sovereign right of states, which sets out the obligation of states to ensure that activities within their jurisdiction of control do not cause damage to the environment of other states or areas beyond the limits of the national jurisdiction.[128] In addition, the principle of equitable utilisation, means that states, in accessing water resources for use or exploitation, must do so in equitable, non-discriminatory terms.

Together with this general legal framework governing the activities of states at international level, international environment law has set up a number of basic obligations for states, formulated through several legal principles, some of which have been formally reiterated by states in legal texts. Amongst these principles the duty to protect the environment, the partnership principle, and the precautionary principle can be highlighted.

[124] Later, on the 12th of December 1974, the General Assembly of the United Nations adopted the Charter of Economic Rights and Duties of States. The text recognises as a basic principle the right of permanent sovereignty of the States over their natural resources and in its article 2.1 establishes that "Every State has and shall freely exercise full permanent sovereignty, including possession, use and disposal, over all its wealth, natural resources and economic activities.". See UNGA Res 3281 (XXIX) (12 Dec. 1974).

[125] This Convention applies to indigenous peoples of independent countries, the social, cultural and economic conditions of which distinguish them from other sectors of the national community and those independent peoples regarded as indigenous for their descendants. Vid. Preamble of the Convention.

[126] This Convention partially revises the Convention on Indigenous and Tribal Peoples of 1957, number 107.

[127] Vid. OUA Doc. CAB/LEG/67/3 rev5, 21 ILM 58 (1982), entered into force on the 21st of October 1986.

[128] The principle of prevention was highlighted in the award related to the Trail Smelter Case and was reiterated not only in Principle 21 of the Stockholm Declaration (UN Doc A/CONF.48/14/Rev.1) and in Principle 2 of the Rio Declaration (UN Doc A/CONF.151/26/Rev.1/Vol.I), but also in the UNGA Res. 2995 (XXVII) (15 Dec. 1972), on cooperation in the field of the environment. This principle is also reflected in Principle 3 of the Draft Principles of Conduct in the field of the environment to guide States in the conservation and harmonious utilisation of natural resources shared by two or more States. See UNEP GC Dec 6/14 (19 May 1978) (UN Doc A/33/25).

The duty to protect the environment, the partnership principle, and the precautionary principle are basic legal obligations for the states set up by the international environment law

The duty to protect the environment is a general obligation of states.[129] While this is a general principle applying to all sectors of the environment, it has not often been mentioned in legal texts. Article 192 of the United Nations Convention on the Law of the Sea (1982) clearly states that "all States have the duty to protect and preserve the marine environment". Furthermore, Article 30 of the Charter of Economic Rights and Duties of States expressly establishes the different treatment that states should receive regarding their responsibility in the protection of the environment. It specifically, states that "The protection, preservation and enhancement of the environment for the present and future generations is the responsibility of all States. The environmental policies of all States should enhance and not adversely affect the present and future development potential of developing countries (…)". Article 25 moreover, emphasises the necessity for all states to pay special attention to the particular needs and problems of the least developed states, of states in transition, and of those small insular developing states.[130] The World Charter for Nature, adopted and solemnly proclaimed by the UNGA in Resolution 37/7 on the 28th of October of 1982, states that human activity, by its actions or the consequences of these, has the means to transform nature and deplete its resources and, therefore, must recognise the urgency that maintaining the balance requires, the quality of nature and the conservation of natural resources.

The partnership principle refers to the general duty of states to protect the environment and is directly linked with the principle of cooperation. This duty is included in principle 24 of the Stockholm Declaration which states that "International matters concerning the protection and improvement of the environment should be handled in a cooperative spirit by all countries, big and small, on an equal footing."[131] From this perspective, the cooperation principle affirms the duty to exchange relevant information for the protection of the environment and the duty to develop activities to promote scientific and technological research, seek technical and financial assistance for developing countries, and establish surveillance programmes, environmental assessment, etc.

The precautionary principle consists, on the one hand, of an obligation to prevent environmental damage in general, and on the other hand, another to not allow the territory of the states to be used in a way that causes harm to other states. The foundation of this principle lies in the idea of due diligence,[132] the equitable use of

[129] In this regard Kiss argues that "… the first of the principles that emerge is the duty of all States to protect and preserve the environment, not only in their relations with other States, but also in the areas under their powers as well as those that are not subject to any territorial jurisdiction". See A. Kiss. 'Droit international de l'environnement' (1994) 146 *Jurisclasseur de droit international* 11.

[130] UNGA Res 3281 (XXIX) (12 Dec. 1974).

[131] The same requirement figures in UNGA Res. 3129 (XXVIII) (13 Dec. 1973); In the principles of the UNEP of 1978 on environmental cooperation on natural resources shared by two or more States (UNEP GC Dec 6/14), in the Preamble of the World Charter for Nature of 1982 and in principle 21 of the same (UN Doc A/RES/37/7, 28 Oct. 1982).

[132] The obligation of due diligence is the basic standard of environmental protection against damage, as suggested by several international conventions, as well as resolutions and and conference reports and international organisations. See for example, art. 2 of the Vienna Convention for the

resources and, ultimately, in good faith.[133] This obligation not to allow the territory of states to be used in a way that causes harm to other states was established for the first time by international jurisprudence in the Corfú Channel incidents,[134] and in the environmental field of Trail Smelter,[135] The Gut Dam Claims[136] matters on the legality of the threat or the use of nuclear weapons[137] and the Gabcíkovo-Nagymaros case also constituted classical antecedents in this matter.[138] The declaration of Stockholm of 1972, states in Principle 21 this obligation of prevention, similar to Principle 2 of the 1992 Rio Declaration:

> States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.[139]

Protection of the Ozone Layer of 1987. Regarding resolutions and conference reports and international organisations see, for example, Principle 21 of the World Charter of Nature (UNGA Res 37/7).

[133] According to the Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, with commentaries, cit. supra, "The principle of good faith is an integral part of any requirement of consultation and negotiation. (…) The parties should obviously aim, first, at selecting those measures which may avoid any risk of causing significant transboundary harm or, if that is not possible, which minimise the risk of such harm".

[134] In this case the ICJ stated that "…certain well recognised general principles (establish) the obligation of every state not to allow the utilisation of its territory to carry out acts contrary to the rights of other States". Vid. CIJ, Recueil 1949, p. 22.

[135] The Court of Arbitration of the Trail Smelter Arbitration Case stated that, in particular "… the Trail Smelter should be required to refrain from causing damage through fumes in the State of Washington". It also understood that "under the principles of international law (…), no State has the right to use or permit the use of its territory in such a manner as to cause injury (…) in or to the territory of another or the properties or people therein, when the case is of serious consequence and the injury is established by clear and convincing evidence". Vid. Trail Smelter Arbitration Case (USA/Canada), Award of March 11, 1941. RIAA, vol. III, pp. 1965 et seq., especially pp. 1974-1980.

[136] Vid. Gut Dam Case (Canada/United States of America), Decisions of 15th January of 1968, of 12th February of 1968 and of 27th of September of 1968. Lake Ontario Claims Tribunal, ILM, vol. 8 (1969), pp. 118-143.

[137] In its advisory opinion of 8th July of 1996, the International Court of Justice stated that "…the existence of a general obligation of the States to ensure that the activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international environmental law". Vid. CIJ Recueil, 1996, pp. 241-2, paragraph 29.

[138] In the sentence of the International Court of Justice of 25th of September 1997, the ICJ cites the Principle to highlight "…the great significance that it attaches to respect for the environment, not only for States but also for the whole of mankind:". Vid. Judgement of the International Court of Justice Gabcíkovo-Nagymaros, C.I.J, Recueil, 1997, paragraph 53. Although these decisions constitute an *obiter dicta*, with these decisions, for the ICJ it is indisputable that in 1996-1997, Principle 21 of Stockholm Declaration and Principle 2 of Río's Declaration are part of the general International law.

[139] In the same sense, the Parte V of the Convention on the Law of the Sea of 1982, Arts. 20 et seq. Of the Convention on the right of use of the waterways for purposes other than navigation, of New York, of the 21st of May of 1997 and under European Law, the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, adopted in Helsinki, on the 17th of March of 1992. It is also reiterated in Principle 3 of the Principles of conduct in the field of environment for the guidance of States in the Conservation and Harmonious Utilisation of Natural Resources Shared by Two or More States, done in Nairobi on the 19th of May of 1978 UNGA Res 3129 (XXVIII). Also, the International Law Association (ILA) in Seoul Declaration of 1986 reiterates this obligation of the States. Vid. "Declaration on the Progressive development of Principles of Public International Law relating to a New International Economic Order", in ILA, The Report of the Sixty-Second Conference, Seoul, 1986, § 5. This rule is also found in Article 30 of the Charter of Economic Rights and Duties of the States, of 1974 (UNGA Res 3281 (XXIX)), as well as in Helsinki Final Act (Conference on Security and Cooperation in Europa (CSCE-OSCE), Final Act, of 1st of August of 1975, in 14 ILM 1292, of 1975).

The international Court of Justice subsequently confirmed through the Advisory Opinion on the legality of the threat or use of nuclear weapons of 1996 that "[t]he existence of a general obligation of the states to ensure that the activities carried out under its jurisdiction or under its control respect the environment of other states or of other areas situated beyond the national control constitutes part of the corpus of International Environmental Law."[140] This same dictum was reiterated in the Gabčíkovo-Nagymaros Case, of the 25th of September, 1997, in which it is established that "The Court does not lose sight, in the field of environmental protection, that vigilance and prevention are imposed because of their character, sometimes, irreversible, of damage to the environment and of the limits inherent in its own mechanism of reparation of this type of damage…"[141]

Since the Rio de Janeiro Conference of 1992, other principles have been formulated that are identified with the concept of sustainable development. These are the precautionary principle, the principle of CBDRP, the principle of environmental information and environmental participation and the polluter pays principle, included in the Río Declaration on environment and development.[142]

The precautionary principle, included in Principle 15 of the Declaration, implies the obligation of the states to adopt cost-effective measures to prevent environmental degradation, when there is a serious or irreversible threat of damage, even if there is a lack of full scientific certainty from where the damage originates. A measure should not be postponed simply because complete scientific information is lacking. In this regard, it is important to take into account the relationship between scientific capacity, which all developed states have, and environmental protection, which is of equal interest to all countries, but represents a different degree of obligation for a party with a more advanced scientific capacity to adopt measures on environmental protection, and thus take responsibility for avoiding damage.

The existence of a broad consensus on the global nature of environmental problems, necessarily involves recognising the global nature of poverty and development. Developing countries will only be able to carry out effective environmental protection policies as long as their respective economic needs are taken into account. For this reason, Principle 6 of the Río Declaration establishes the need to give special priority to the situation and needs of developing countries, in particular to the least advanced and most vulnerable from an environmental standpoint. This is the basis of the principle of CBDRP, included in Principle 7 of the Río Declaration. This principle is based on three main arguments: first, it is understood that developing states play an important role in achieving the environmental objectives agreed in international treaties on environmental matters; second, the industrialised or developed countries have a 'moral

[140] Vid. Legality of the Threat or Use of Nuclear Weapons, I.C.J. Reports 1996, pp. 241-242, parag. 29.

[141] Cit. supra. Paragraph 53 of the Veredict. On this issue, see A. Boyle. 'The Gabčíkovo-Nagymaros Case: New Law in Old Bottles' ibid13;P. Sands. 'International Courts and the Application of the Concept of "Sustainable Developement"' (1999) 3 Max-Planck Yearbook of United Nations Law 389;S. Stec and G. Eckstein. 'Of Solemn Oaths and Obligations: Environmental Impact of the ICJ's Decision in the Case Concerning the Gabčíkovo-Nagymaros Project' (1997) 8 Ybk Intl Envtl L 41.

[142] Supra n 128.

obligation' to provide financial and technical assistance to underdeveloped or developing countries; and third, the interests developed countries represent are often imposed and distinct from those of developing countries.

The principle of information and environmental participation, as provided in Principle 10 of the Río Declaration, is key to dealing with environmental issues. Following the Río Declaration, this principle implies that each individual shall have appropriate access to information held by public authorities concerning the environment, including information on materials and activities that represent a danger to their communities, as well as the opportunity to participate in decision-making processes.

The principle of information and environmental participation represents fundamental rules of transparency, equity and accountability in decision-making, and it is fundamental to environmental democracy and good governance

Twenty years after the approval of Principle 10 of Río Declaration on Environment and Development, a consensus has evolved that this principle represents fundamental rules of transparency, equity and accountability in decision-making, and that it is fundamental to environmental democracy and good governance. Access to information encourages openness and transparency in decision-making, which helps to increase the efficiency and effectiveness of environmental regulation. It also makes it possible to rely fully on decisions taken by authorities to demonstrate the existence of a problem not previously seen, or to pose an alternative solution. The participation of informed citizens is a mechanism for integrating the concerns and knowledge of the public into political decisions that affect the environment. Access to justice provides individuals and organisations in civil society with tools to protect their environmental rights through an independent and expeditious judicial process that covers reparation for environmental damage. Access to justice is thus fundamental to ensuring environmental rights for those who have traditionally been excluded from decision-making. These rights are counterbalanced by the obligation of states to facilitate and encourage public awareness and participation by making information available to all, and providing effective access to judicial and administrative procedures, including compensation for damage and relevant resources.

The principle of information and environmental participation acquires special relevance in relation to natural resources and indigenous people and is expressed, as discussed below, in relation to prior, free and informed consent, included in Convention No. 169 of the International Labour Organisation on Indigenous and Tribal Peoples in Independent Countries.[143] Article 7.1 contains one of the most important principles of Convention No. 169. This rule states that "The peoples concerned shall have the right to decide their own priorities for the process of development as it affects their lives, beliefs, institutions and spiritual well-being and the lands they occupy or otherwise use, and to exercise control, to

[143] The ILO Convention on Indigenous and Tribal Peoples in Independent Countries. Adopted by the 76th Session of the International Labour Organisation, in Geneva on the 7th of June 1989. Available [on line], ILO (1989). 28 ILM 1382; accessed on the 15th of April 2013, available at: http://www.ilo.org/ilolex/cgi-lex/convds.pl?C169. Its entry into force took place on the 5th of September 1991. See F. J. Palacios-Romeo. 'El proceso normativo internacional sobre derechos de los pueblos indígenas: evolución jurídica y proyección política' (1998) 2 Revista Aragonesa de Administración Pública 105, 118-9. See also Art. 32 of the United Nations Declaration on the Rights of Indigenous Peoples (2007).

the extent possible, over their own economic, social and cultural development. In addition, they shall participate in the formulation, implementation and evaluation of plans and programmes for national and regional development which may affect them directly".

Principle 16 of the Río Declaration, the polluter pays principle, consists of an obligation to internalise environmental costs and promote the use of economic instruments, taking into account that the polluter should bear the costs of pollution. This principle is a very important axiom for allocating responsibilities and recognition for compensation. The complement to this principle is Principle 13 of the Río Declaration, which says states shall develop national and international legal instruments regarding liability and compensation for the victims of pollution and other environmental damage.

Some of the principles recognised in the Declaration of Río, were reaffirmed by the International Law Association in its New Delhi Declaration on Principles of International Law Relating to Sustainable Development. [144] Adopted in 2002, it identifies, without being exhaustive, seven specific principles to be recognised internationally. These are the obligation of the states to ensure a sustainable use of natural resources, equity and eradication of poverty, common but differentiated responsibilities, the criteria of precaution applied to health, natural resources and ecosystems, public participation and access to information and justice, good management of public affairs, and the integration and interaction of all these principles, particularly with regard to human rights and the economic, social and environmental objectives.

These above mentioned principles can contribute to the resolution of conflicts related to sustainable development, supporting the integration of law and policies in the intersection of economic, social and environmental international law, and guiding the implementation of measures concerning environmental law. While they are not yet sufficiently effective to solve international environmental conflicts on their own, they in fact serve as axioms, which by way of soft law provide information for the elaboration of policies, guide the behaviour of the states in their internal and international relationships and reinforce internal and external rules.

3.2 Limitations of international rulings on sensitive areas of ecological debt

Ecological debt, as indicated in the first part of this report, is the result of a complex historical process and is reflected in many sectors of the economy. However, in three sectors, this debt is particularly visible: climate change, exploitation of biodiversity and the export of hazardous waste. It is therefore appropriate to refer to the main instruments that international law has articulated to regulate these areas, and to refer to the limitations of these instruments in especially sensitive areas, notably, the UNFCCC of May 9th 1992, the Convention

[144] Ibid.

on Biological Diversity (CBD) of June 5th 1992, and the Basel Convention on Transboundary Movements of Hazardous Wastes and their Disposal (March 22nd 1989). These international legal instruments on environmental matters have been designed to prevent so - called 'ecocide', namely the extensive destruction of the environment and natural resources as a result of direct or indirect action of humans on ecosystems, but in turn influences the social, economic and cultural impacts that environmental degradation has on the lives and health of people. In this sense, the sectorialisation of the regulation of the protection of human rights and environmental protection has not promoted the integrated protection of both legal goods.

Moreover, international treaties have progressively tried to respond to environmental problems that are conceived as externalities of the economic system. The problem is that without appropriate instruments, international treaties cannot tackle the various forms of air, water and soil pollution, deforestation, loss of biodiversity, erosion, desertification and loss of soil fertility, global warming, degradation of the ozone layer, or overall degradation of peoples' quality of life.

3.2.1 Climate change: global challenge, unequal responsibility

Disproportionate contamination of the atmosphere by emissions from industrialised countries have caused the deterioration of the ozone layer and the increase in the greenhouse effect, highlighting the role and responsibility of rich nations in generating alterations in the climate system. Moreover, it is estimated that 75% of historical emissions of greenhouse gases were produced by 'developed' countries, inhabited by only 20% of the world's population. This reality should be evidence upon which to apply the polluter pays principle and the principle of CBDRP, and legally clarify responsibilities, commitments and compensations. Nevertheless, the legal force of these principles, although they are generally accepted internationally, is not sufficient in itself to produce the appropriate legal consequences.

Fig. 5

United Nations Conference on Environment and Development (UNCED)

George Bush, President of the United States, signing the UN Framework Convention on Climate Change on behalf of his nation. [3-14 June 1992]

03 June 1992

Rio de Janeiro, Brazil

Photo credit: UN Photo

However, these same principles are incorporated into the UNFCCC of 1992,[145] which recognises this reality and uneven responsibility for generating the problem, in its introduction, which says that developed countries have a historical responsibility for these emissions, and asserts that they should take the lead to fight climate change. In this regard, the Preamble of the Convention refers explicitly that "…the largest share of historical and current global emissions of greenhouse gases has originated in developed countries, that per capita emissions in developing countries are still relatively low and that the share of global emissions originating in developing countries will grow to meet their social and development needs".

In this same preamble, it is also recognised "…that the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response, in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions". Additionally, it states "that responses to climate change should be coordinated with social and economic development in an integrated manner with a view to avoiding adverse impacts on the latter, taking into full account the legitimate priority needs of developing countries for the achievement of sustained economic growth and the eradication of poverty". Legally speaking, this implies the recognition of the existence of a commonly known 'climate debt', the redress of which translates into unequal commitments for the Parties and compensation measures for those countries who are not responsible for, yet suffer the consequences of climate change.

The Kyoto Protocol regulates unequal commitments in terms of emission reduction obligations, where the only countries with binding commitments to reduce greenhouse gases are developed countries, included in Annex I of the Protocol. In order to meet reduction requirements, the Protocol provides 'flexible mechanisms', i.e. emissions trading (Article 17), joint implementation (Article 6) and the clean development mechanism (Article 12).

These project-based mechanisms, in particular joint implementation (JI) and the clean development mechanism (CDM), are important for achieving the goals of reducing global emissions of greenhouse gases and increasing cost efficiency.[146] At the international level, they are directed at promoting sustainable development by providing increased assistance and financial resources for developing and transitional states, because they provide an exchange of favourable interests both for development and for the protection of the environment. Focusing on the CDM, the purpose is twofold: first, to assist Parties not included in Annexe I in achieving sustainable development and secondly, to help achieve the ultimate goal of the UNFCCC, as well as to assist the Parties included in Annex I in achieving

[145] UNFCCC (9th of May of 1992) 1771 UNTS 107, (1992) 31 ILM 851.

[146] In Marrakech Accords of 2001, governments adopted a series of decisions relating to these cooperation mechanisms, as well as recommendations for the First Conference of the Parties. See Report of the 7th Conference of the Parties to the United Nations Framework Convention on the Climate Change (Marrakesh, 29th Oct. – 10th Nov. 2001) UN Doc FCCC/CP/2001/13/Add.2.

compliance with their quantified limitation and reduction of emissions commitments.

In practise however, the actual effectiveness of the CDM has been questioned. Evidence indicates that many such projects have had substantial negative environmental and social impacts, and have not sufficiently compensated for greenhouse gases emitted into the atmosphere. Far from contributing to the sustainable development of less developed countries, the CDM has actually increased the ecological deficit in the already existing climate debt.[147] If the CDM is to successfully promote sustainable development and climate protection, it must exclude certain types of projects such as forestry projects ('sinks'), large hydroelectric projects (over 10 MW), and hydroelectric projects that do not meet the criteria of the World Commission on Dams (WCD) and coal energy projects.

In addition to the flexibility mechanisms, Article 4 of the UNFCCC assumes that the most industrialised states will provide cooperation to developing countries in technology transfer and conservation of carbon sinks and adaptation. The Bali Action Plan agreed in 2007 reiterated the importance of the transfer of new transparent, measurable and verifiable additional funds. They are considered 'new funds' since they are in addition to the official development assistance objectives of 0.7% of GNP. In this regard, the proposal to create a GCF to compensate damage suffered by less developed countries from the historic and current emissions of the most industrialised ones was approved at COP17. It seemed that the GCF was to become the main fund to finance the fight against climate change, with the mobilisation of USD 100 billion for environmental protection and adaptation to climate change from 2020 on, for the benefit of the least developed countries. However, industrialised nations have only committed to a transfer of USD 30 billion, on loan rather than given, and prioritising funding for the reduction of emissions from emerging economies, over the needs of adaptation to the effects of the climate change in the least developed countries.

3.2.2 Biodiversity protection: biopiracy

Another sensitive area where there is an imbalance in the relationship between developed and less developed countries as a result of environmental alteration, is biodiversity.Activities that impact biodiversity such as illegal access to natural resources, appropriation and plunder of the same, intellectual appropriation of ancestral knowledge related to seeds, and appropriation from benefits arising from the use of medicinal and other plants fall under the label of 'biopiracy'. The concept of biopiracy, coined for first the time in 1993 by Pat Mooney, director of RAFI (Rural Advancement Foundation International, now ETC) and made popular by Vandana Shiva and other authors, is another dimension of ecological debt, as

[147] On this issue, see Bond, P., Sharife, K., Allen F., Amisi B., Brunner K, Castel-Branco, R., Dorsey D., Gambirazzio, G., Hathaway, T., Nel, A., Nham, W., 2012. 'The CDM cannot deliver the money to Africa. Why the Clean Development Mechanism won't save the planet from climate change, and how African civil society is resisting', *EJOLT Report No. 2*, 120 p.

again the damages are inflicted on developing countries by the activities of developed countries.

'Biopiracy' refers to the unauthorised extraction of biological resources, such as plants with medicinal properties, and associated traditional knowledge from indigenous peoples and local communities, or to the patenting of spurious 'inventions' based on such knowledge or resources without compensation. To illustrate, some example cases of biopiracy are useful. One of the first legal precedents is found in the 'Neem' case. The Neem tree (*Azadirachta indica*) has been used for centuries, especially in India, as an agricultural insecticide and in human and veterinary medicine, and in cosmetics. In many local cultures, religions and literatures, it is a sacred tree, venerated as the 'free tree'. In India, over 70 patents have already been taken out by (mainly American) corporations that use the tree's medicinal properties for commercial purposes, with no compensation to indigenous peoples, who have used it for over 4,000 years. With a rush for claims to the Neem tree's properties underway by big businesses under Western-imposed Intellectual Property Rights (IPR). The Technical Board of Appeals of the European Patent Office (EPO) on March 8th, 2005, in fact revoked in its entirety, a patent on a fungicide made from seeds of the Neem tree. This action concluded a ten-year battle, the world's first legal challenge to a biopiracy patent. This is a crucial example of case law on biopiracy patents filed in the EPO and it represents a civil society victory against biopiracy.[148]

This case shows how piracy and patents (without agreements on benefit sharing) can have negative effects, not only on traditional indigenous or local knowledge, but also on the welfare, food and health security of such communities. In this sense, other relevant cases of biopiracy relate to basmati rice in India, *quinua* varieties in Bolivia, yellow beans in Mexico, and *ayahuasca* in Amazonia. All of them have a common pattern, featuring the commercial exploitation of biological material, especially through patents, while failing to obtain permission from, or pay compensation to the indigenous or local communities from which such material originates, and preventing indigenous groups from using specific plant materials.

These cases illustrate how biopiracy continues as a problem and major injustice, and that much remains to be done to eliminate it. Today around 90% of genetic resources are in the South and 90% of the patents are in the North, In this context, countries like India and Brazil have begun to crack down on companies that patent products made from rare plants and animals without adequately compensating the country or its indigenous peoples.[149] New rules are thus emerging with regard to

[148] The case had originally been brought to the EPO in 1995 by Indian environmentalist Vandana Shiva, Magda Aelvoet (then MEP and President of the Greens in the European Parliament), and the International Federation of Organic Agriculture Movements (IFOAM).

[149] In 2003, the state of Acre was the first in Brazil to launch a nationwide campaign against the biopiracy. But there is a lack of specific legislation focused on the crime of biopiracy in Brazil. There's just the Article 30 of Law 9.605/98, which deals with environmental crimes and prohibits the unauthorized export of amphibian and reptile skins and hides, as well as the generic crime of smuggling and embezzlement.

biodiversity prospecting and natural product research, to try to limit at the international level, 'take and run' approaches to biodiversity.

The Rio de Janeiro Convention on Biological Diversity (CBD),[150] signed June 5th 1992 by 193 states, is the first treaty to reaffirm the sovereign rights of countries to regulate access to their biological resources, with informed consent as a central element.[151] The CBD is an instrument of the United Nations that seeks the preservation of life on Earth in all aspects: genetic, population, species, habitat and ecosystems. That is to say, it wants "the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources" (Art. 1).In this sense, Article 1 of the CBD establishes three main aims: a) the conservation of biological diversity; b) the sustainable use of biodiversity components; and c) the fair and equitable sharing of the benefits arising out of the commercial and other kind of use of genetic resources. The most important aspects of the CBD are: the preservation of traditional knowledge of the indigenous and local communities associated with biodiversity (Art. 8j) and the regulation of access to genetic resources and the fair and equitable sharing of the benefits arising out of their use (ABS- Access and Benefit Sharing; Art. 15).

Bioprospection processes and activities integrate biopiracy, the illegal and unfair exploitative of indigenous forms of knowledge by commercial actors, without prior informed knowledge and permission from indigenous people and without any compensation or recognition to themselves

Contrary to the provisions in this Convention, biopiracy activities violate standards and principles of international law, notably, the sovereign right over natural resources, the polluter pays principle, and the right to free, prior and informed consent. The unauthorised access, misappropriation and exploitation of natural resources therefore violates the sovereign right to natural resources, and the right to a fair and equitable share of the benefits arising from the use of these resources. The use of intellectual property mechanisms that guarantee the monopolistic use of appropriated resources, also violates the right to "a fair and equitable share' enjoyed by local communities and indigenous peoples, whose knowledge about biodiversity has paradoxically allowed them to preserve, use and improve biological diversity. Biopiracy feeds on the violation of the right to be informed and to take part in environmental matters, preventing the granting of prior, free and informed consent that must precede any activity, which means the possibility to access, use and benefit from the natural resources of others.

In this regard, it is important to equally consider the environmental and social components of protection against biopiracy, especially as most of the existing biodiversity on the planet affects the way of life of indigenous populations whose subsistence depends directly on nature. The United Nations Declaration on the Rights of Indigenous Peoples of 2007[152] contains several articles related to

[150] CBD (5th of June 1992) 1760 UNTS 79, (1992) 31 ILM 822.

[151] Article 15(1) of the CBD establishes that "Recognizing the sovereign rights of States over their natural resources, the authority to determine access to genetic resources rests with the national governments and is subject to national legislation"; and in its fifth paragraph recognises that "Access to genetic resources shall be subject to prior informed consent of the Contracting Party providing such resources, unless otherwise determined by that Party."

[152] UNGA Res. 61/295 (13 Sept. 2007). UN Doc A/RES/ 61/295. The Declaration was adopted with 144 votes in favour, 4 against (Australia, Canada, New Zealand and U.S.A.) and 11 abstentions (Azerbaijan, Bangladesh, Bhutan, Burundi, Colombia, Georgia, Kenya, Nigeria, the Russian

sustainable development and the use of natural resources and biodiversity, Article 29 being the most important. This article states that indigenous peoples have the right to the conservation and protection of the environment and the productive capacity of their lands or territories and resources. states shall establish and implement assistance programmes for indigenous peoples for such conservation and protection, without discrimination. States shall take effective measures to ensure that no storage or disposal of hazardous materials shall take place in the lands or territories of indigenous people without their free, prior and informed consent. The states shall also take effective measures to ensure, as needed, that programmes for monitoring, maintaining and restoring the health of indigenous peoples, as developed and implemented by the peoples affected by such materials, are duly implemented.[153]

The most potentially significant text for the indigenous peoples is, without any doubt, The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation to the Convention on Biological Diversity, adopted by the Conference of the Parties (COP) in Nagoya on the 29th of October 2010. [154] This protocol addresses the conditions of access to traditional knowledge of indigenous peoples when this knowledge is related to genetic resources, and is connected with the objective of the Convention on Biological Diversity, of the fair and equitable sharing of benefits arising from the use of genetic resources.

The Nagoya Protocol starts from the “interrelationship between genetic resources and traditional knowledge, their inseparable nature for indigenous and local communities, the importance of traditional knowledge for the conservation of biological diversity and the sustainable use of components, and for the sustainable livelihoods of these communities”. It is mindful of indigenous communities through its provisions particularly in its requirement of “prior, informed consent or approval and involvement of indigenous and local communities for access to genetic resources where they have the established right to grant access to such resources” as well as to access the traditional knowledge associated with the same (Articles 6.2 and 7).[155]

Federation, Samoa and Ukraine).

[153] While the Declaration is not legally binding, it is a complementary instrument to others that are and include the recognition of other rights which are of great importance.

[154] Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilisation to the Convention on Biological Diversity (29 Oct. 2010, not yet in force). CBD Decision 10/1, UN Doc UNEP/CBD/COP/10/27 (20 Jan. 2011).

[155] It also refers specifically to indigenous peoples in terms of national regulation of their participation in the benefits arising from genetic resources and the traditional knowledge associated with them (art. 5(2) & (5)), in cases in which these traditional knowledge associated with genetic resources are shared by one or more indigenous communities in various States Parties (Article 11),to information on conditions for access to genetic resources and traditional knowledge associated with them (Articles 12, 13 and 14), compliance with legislation or national regulatory requirements on access and participation in the benefits for the traditional knowledge associated with genetic resources (Article 16), to measures of awareness about the importance of genetic resources and traditional knowledge associated with genetic resources, and related matters of access and participation in the benefits (Article 21), and to training and financial resources (Articles 22 and 25).

Regarding IPR, the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS),[156] annexed to the Treaty establishing the WTO,[157] has important implications for the industrial biotechnology sector. This legislation seeks to standardise the criteria of protection for intellectual property worldwide, regulating the minimum rights to be enjoyed by the owner of the rights in question. It includes all aspects that are subject to intellectual property law - author's right, trademarks or trade factory, geographical indications, industrial design and industrial models, and invention patents.[158] The Parties in the Agreement on TRIPS intend to provide incentives for innovation by setting aside economic benefits from this innovation for the person whose intellectual effort has made innovation possible. TRIPS, unlike CBD which recognises state sovereign rights on the biological resources, intend to regulate private IPR to promote free trade.[159] Thus the paradox in the international legal order arises - the CBD aims at conservation, the sustainable use of biodiversity and the fair and equitable sharing of benefits arising from the use of genetic resources, whereas TRIPS promote the intellectual property of innovation, and the protection and enforcement of these rights. A traditional formula for IPR is the patent. But states have different legal regimes for processes for inventions and for patenting. This provision gives states the freedom to exclude certain plants, animals, and biological processes from patentability, and to protect plant varieties in the face of the development of new ones. [160]

The TRIPS Agreement demands that state members grant patents in all fields of technology, whether products or processes (Article 27), excluding therapeutic and

[156] Vid. OMC, Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) Marrakesh, 15th of April 1994.

[157] By joining the WTO, the members adhere to 18 specific agreements which are annexed to the Agreement establishing the WTO. The most important side agreements for health are: the Agreement on the Trade-Related Aspects of Intellectual Property Rights (TRIPs Agreement); the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS); the Agreement on Technical Barriers to Trade (TBT); the General Agreement on Tariffs and Trade (GATT) and the General Agreement on Trade in Services (GATS). Of these Agreements, TRIPs is expected to be the one which has major impact on the pharmaceutical sector.

[158] The aim of the TRIPs Agreement appears in Article 7, and it provides for the protection and enforcement of intellectual property rights which should contribute to the promotion of technical innovation and to the transfer and technological diffusion, to the mutual advantage of producers and users of technological knowledge and in a manner that favours social and economic welfare and balance of rights and obligations. In principle, the Agreement covers all forms of intellectual property and tries to harmonise and strengthen protection standards and to facilitate effective enforcement nationally and internationally.

[159] Therefore, intellectual property agreements relating to trade allow the appropriation of living beings and only give value to industrial inventions, regardless of the value of innovations developed communally by the peasants and indigenous peoples during hundreds of years. In this regard, States that are signatory to the CBD and TRIP should take into consideration the provisions of the two instruments when formulating their own legislation.

[160] In the case of a protected plant variety, its protection supposes that its use requires a license or other permission from the holder, for example the patent holder. The question about whether and to what extent the recognition of such protection in another jurisdiction should be accepted is a different question. WTO also recommends, as model rules for intellectual property rights related to plants, the regulation contained in the Convention of International Union for the Protection of New Varieties of Plants (UPOV), for being functional in the interest of transnational seed production corporations, biotechnological or pharmaceutical, in search of patents to protect their inventions. Vid. WTO, Advance on commercial aspects of intellectual property rights, Implementation Issues Referred to the Council for TRIPs, Report by the Chairman of the Council on his own Responsibility, IP/C/21, 4th of December 2000.

diagnostic methods for the treatment of humans or animals, and inventions, the commercial exploitation of which must be prevented to protect public order, morality or that which may cause prejudice to human, animal or plant life health and to the environment. In addition, they "shall provide for the protection of plant varieties either by patents or by an effective system."[161] The main problem is that although patent protection can lead to social benefits through the discovery of new medicines, the rules of the TRIPS agreement are derived from those of the industrialised countries and are not necessarily the most appropriate countries with different levels of development. The interests of public health should be taken into account when implementing the Agreement, so that national objectives and intellectual property protection are also in accordance with the other sectors of state activities considered necessary, provided this does not mean contravention of the Agreement.

TRIPS, while trying to protect plant varieties through a monopoly system of intellectual property or patents,[162] particularly affect the rights of indigenous peoples, who have preserved the accumulated knowledge on nutritional, medicinal and spiritual plants and animals around them. The granting of a patent restricts indigenous use and overrides the basic rights of these local populations to use their natural resources.[163] In this respect, although the CBD recognises the value of traditional knowledge, innovations and practices of indigenous and local communities, TRIPS only recognises as inventive and worthy of patent protection what is considered new, useful, and of industrial application. In order to avoid this situation, some developing countries have tried to apply the CBD, which requires that whoever tries to patent genetic material, gains the original and prior consent of the country or the local community from which it was obtained.

While the CBD recognises that the use of genetic resources must involve a fair and equitable sharing of the benefits arising on mutually agreed terms (MAT), TRIPS do not include profit sharing between the patentee and the country of origin of the resources or the traditional knowledge used. Nor is there any regulation requiring prior, informed consent of the country of origin or the indigenous community or owner of the knowledge, innovation or traditional practice used.

[161] Article 27.3 on TRIPs establishes that:" Members may also exclude from patentability: (…) b) plants and animals other than micro-organisms and essentially biological processes for the production of plants or animals other than non-biological or microbiological. However, Members shall provide for the protection of all plant varieties either by patents or by an effective sui generis' system or by any combination thereof." The instrumentation of this article 27.3 is still one of the most controversial issues within the WTO.

[162] An alternative to intellectual property rights on plants is the recognition of the "breeder's right", as defined in the Conventions of 1978 and 1991 of the International Union for the Protection of New Varieties of Plants (UPOV).

[163] For example the worldwide discovery of the powder obtained from the toasted bark of the tepezcohuite tree (Mimosa tenuiflora) which has healing properties for skin burns and had been used in Chiapas (Mexico) for hundreds of years by the indigenous peoples, generated the bioprospection of the tree and caused a reduction in the access of the local populations that have to compete for its use with those who traded it in Mexico. This is just an example of how a patent and an intellectual property protection system applied to vegetables can affect the basic rights of the local populations and biodiversity.

Along with the appropriation of rights of intellectual property related to natural resources, the European Union (EU) is a contributor to the privatisation of nature, as current legislation allows the growing of selected seeds with large quantities of chemicals. This affects the conservation of agricultural biodiversity, health, the environment and the autonomy of farmers. Patented seeds are a threat to the right to food, giving economic benefits to only a few multinationals, decreasing access to seeds for home use, and restricting farmers' crops. EU legislation aims at the privatisation of the entire market for seeds of plants and trees. According to this new legislation, it is illegal to grow or sell any vegetable seed not previously approved by the new 'Plant Variety Agency of the European Union' under the pretext of obtaining greater protection for consumers. The Agency will develop a list of plants approved and shall be paid an annual fee to keep seeds in the list. Failure to pay means a failure to comply with regulations, making the crop prohibited. Consequently, these measures favour large transnational corporations in biotechnology, through the extension of IPR and the promotion of new technologies for the control of all commercial plant varieties. The EU has apparently succumbed to the pressures of the seed industry, among its key actors, Monsanto, Bayer and Syngenta, the activities of which have expanded rapidly in the field of seed trade. These companies complain of economic losses amounting to 40% of potential markets because of 'illegal reproductions' and unregistered seed production. Their lobbyists are exerting intense pressure on the EU, demanding the strengthening of IPRs and their protection.[164]

The protection of biodiversity is undoubtedly one of the most worrying issues in terms of avoiding further accumulation of ecological debt, but also with regard to preventing the plundering of natural resources and the destruction of indigenous peoples.

3.2.3 The transboundary movement of hazardous wastes

Finally, the transboundary movement of toxic waste originating in industrialised countries and deposited in the poorest countries is another manifestation of ecological debt.

The industrial system produces a large amount of waste with different degrees of toxicity, the treatment of which is very expensive process. The cost of treatment depends on the environmental standards of the countries where it is taking place. This is why northern companies have found it convenient to export their toxic waste to so-called 'environmental paradises' or 'environmental heavens', countries where environmental legislation is relatively weaker and security requirements are lower, making waste disposal cheaper, as in the case of for example of electrical and electronic waste.

In this way, toxic waste originating in northern countries is exported to poor countries that function as inexpensive landfills. The free trade of waste leaves

[164] See Proposal for a Regulation of the European Parliament and of the Council on the production and making available on the market of plant reproductive material (plant reproductive material law) Brussels, 6.5.2013 COM(2013) 262 final.

impoverished communities facing the choice of continuing to live in poverty or accepting hazardous waste in spite of the health risks. The transfer of pollution to 'environmental havens' was justified as an opportunity by Lawrence H. Summers, former WB chief economist, in his Memorandum published in December 1991.[165] He justified the transfer of waste to poorer countries stating that "the logic of a decision to dump toxic waste in Africa is an impeccable logic. It should pollute less contaminated countries, and Africa is undercontaminated; it is necessary to place the toxic waste in countries where wages are lower." The logic of Summers, which takes the theory of liberalism to its highest expression, is based on mainstream economic rationale - countries with low income levels, low life expectancy, and high rates of premature death due to environmental degradation do not represent as serious an economic loss as industrialised countries. Dumping toxic waste in areas where people already have shorter lives is thus seen as an economically efficient means of redistributing waste. The conclusion is that it is justified to dispose of toxic waste in underpolluted countries where life expectancy and wages are low. This logic essentially reduces the value of beings and things to a monetary value.

The most significant challenge to this sort of economic reasoning is the 'Basel Convention on the Transboundary Movement of Hazardous Wastes and their Disposal'. Adopted in 1989 and entering into force in 1992, [166] the Convention was created to deal with the concerns about the management, elimination, and transboundary movements of the estimated 400 million tons of hazardous waste that is being generated worldwide every year. The Basel Convention is intended to reduce the volume of waste exchanged to protect human health and the environment, controlling import and export and elimination processes of hazardous waste. Its guiding principles argue that the transboundary movement of hazardous waste must be reduced to a minimum, managed in an environmentally rational way, treated and eliminated as closely as possible to the source that generated it, and be minimised at origin.

Currently with 178 parties, the Convention obliges its signatories to prohibit the export and import of hazardous and other waste going to or coming from a state that is not a party of the Convention. It also prohibits the export of waste if the importing state has not provided its specific written approval to their import. states must communicate with affected states, providing information about proposed transboundary movements by means of a notification form allowing affected states to evaluate the consequences of proposed movements on human health and the environment. States can only authorise transboundary movements when the transport and elimination of waste is deemed free from danger. Parties are also obliged to pack, label and transport waste according to international standards and to provide a movement document showing the place of origin and route to the

[165] Internal Memorandum of the World Bank, in *The Economist* (8 Feb. 1992), 'Let Them Eat Pollution' 82 (UK edn).

[166] Basel Convention on the Transboundary Movement of Hazardous Wastes and their Disposal (22nd March 1989) 1673 UNTS 57, (1989) 28 ILM 649.

place of elimination. There Convention also allows that all Parties can impose additional conditions, provided they are compatible with those of the Convention.

This Convention was initially criticised by environmental groups who felt that the agreement was not capable effectively prohibiting the massive export of waste to non-industrialised and/or impoverished countries with much weaker legislation. Moreover, a great deal of concern was expressed over the fact that the United States, the largest toxic waste producer in the world, is not a signatory, substantially limiting the Convention's scope. Nevertheless, in the third Conference of the Parties of the Basel Convention (COP 3) in Geneva in 1995, an amendment (referred to as the 'Ban Amendment'[167]) was adopted by means of Decision III/1, to prohibit all exports of hazardous wastes for final elimination and recycling from countries known as Annex VII countries (Parties in the Basel Convention that are members of the EU and the OECD, as well as Liechtenstein) to the non-Annex VII countries (all the rest of the Parties in the Convention), The Ban Amendment is set to enter into force after being ratified by at least three-fourths of the state parties. However, debate over the exact number of ratifications needed meant that it was until the tenth meeting of the Convention of the Parties (COP10), in Cartagena, Colombia in 2011, when 17 more Parties ratified it.[168] The Basel Convention has thus been a key development, establishing a global regime for liability and adequate and prompt compensation for damages resulting from transboundary movements of hazardous and other wastes and their elimination, including illegal traffic of those wastes.

In spite of these agreements, practices such as shipbreaking, recycling of electric and electronic equipment, incineration of plastics, creation of acid pools and uncontrolled dumping are still being carried out in rural areas of countries with weak legislation. Industrialised countries produce around 80% of the 400 million tons of toxic waste generated worldwide every year, and of that proportion 10% is exported (mainly) to underdeveloped countries with huge economic needs. These activities do not only violate the Basel Convention in most cases, but also the principles of sustainable development. This includes the polluter pays principle, as generators of pollution (waste in this case) fail to internalise the costs of waste management and/or disposal. The prevention principle is also violated when environmental damage results from the unauthorised moving and storage of toxic wastes that particularly affect the health and wellbeing of host populations. One of the incidents which led to the adoption of the Basel Convention was the *Khian Sea*

[167] The Human Rights Commission, in its Resolution 1996/14 related to "Adverse effects of illicit movement and dumping of toxic and dangerous products and wastes on the enjoyment of human rights", welcomed the decision taken by the States Parties to the Basel Convention to introduce this amendment to the Convention and urged all States Parties to the Basel Convention to ratify the amendment to facilitate its early entry into force. Available on line at: http://www.unhchr.ch/Huridocda/Huridoca.nsf/0/bf1e61b20897192b8025668a0057c3d4?Opendocument (access on the 15th of April 2013).

[168] This decision was possible thanks to the "Indonessian-Swiss-country led initiative (CLI) to improve the effectiveness of the Basel Convention", presented to the Secretariat of the Convention and that allowed the adoption of the omnibus decision on the Indonessian-Swiss CLI to improve the effectiveness of the Basel Convention (UNEP/CHW.10/CRP.25). To date, the Ban Amendment has been ratified by 75 parties. See in this regard http://www.basel.int/Countries/StatusofRatifications/BanAmendment/tabid/1344/Default.aspx.

waste disposal incident, in which a ship carrying incinerator ash from the city of Philadelphia in the United States dumped half of its load on a beach in Haiti before being forced away. Another is the 1988 Koko case in which 5 ships transported 8,000 barrels of hazardous waste from Italy to the small town of Koko in Nigeria in exchange for USD 100 monthly rent which was paid to a Nigerian for the use of his farmland. All these practices have been deemed 'Toxic colonialism' by many developing countries, not only because of the harmful consequences of such illegal activities, but also because many of them fail the principle of free, prior and informed consent, a right of population affected to decide what happens to their own land and freely pursue their economic, social and cultural development.

Therefore, industrialised countries have acquired a debt to non-industrialised countries for waste exports that remain unacknowledged and unpaid. The quantification of this debt is difficult to estimate, but if we calculate the cost of recycling and purification of solid waste and contaminated water to a 'developed' economy in economic and energetic terms, we will surely find that the flexibility of environmental rules and restrictions of countries with weaker economies is justified in the interest of polluting countries keen to sustain their level of economic growth and increase the profitability of their production processes. Once again, sustainable development seems to be a spectrum before the everyday reality of many countries.

3.3 The limitations of sustainable development

Different approaches to sustainable development can contradict each, as both have evolved in response to conflicting logics. Development processes have evolved in a linear pattern, increasingly exploiting nature and favouring private accumulation. The notion of sustainability on the other hand, is rooted in ecological and life science, the logic of which is circular and inclusive. It represents the dynamic balance of ecosystems, in all their interdependence and cooperation. Development and sustainability are thus based on antagonist logics. One privileges the individual and the other the group. One promotes competition and the other cooperation. One promotes the evolution of the most competent, the other the evolution of the interconnected.

Sustainable development advocates continuous growth, yet it does not require economic systems to internalise the ecological and social conditions of equity, justice and democracy in the process. Ecological sustainability is an inescapable condition of the sustainability of the economic process, however dominant discourse prioritises the restoration and maintenance of economic growth, and relies on market mechanisms to maintain the conditions of ecological sustainability. In this sense, nature has been incorporated into the global economic order through a double strategy of trying on the one hand to internalise the environmental costs of development, and on the other, in conceiving the individual, culture and nature as a new kind of capital (human, cultural and natural capital) subject to processes of appropriation and economic expansion. The concept of sustainable development, paradoxically, aims to trigger economic

growth, denying the limits of growth and diluting cultural identities, and the value of life and nature in favour of the logic of the market.

Such development would be sustainable if it linked economic decisions to social and ecological well-being, that is to say, if quality of life were linked to the quality of the environment and, therefore, to economic rationality and social welfare. In other words, development is sustainable if it improves the quality and standards of human life while ensuring and conserving the natural resources of the planet. This doesn't just require the integration of environmental costs into economic accounting (by for example making sure prices reflect as far as possible the actual cost of replacement and renewal of natural resources consumed). Nor does this mean that a polluter that pays has bought the right to pollute, for the point of such a principle is to prevent the destruction of natural resources that cannot be regenerated. What is require rather, is a rethinking of production and consumption patterns in the North to reverse the trend of the increasing consumption of resources and energy.

The concept of sustainable development in fact supports a diachronic perspective that is concerned with present and future generations. However, it does not assume or determine historical or compensatory responsibilities for states choosing to undertake this model of development over alternative ones. The persistence of poverty moreoever that afflicts a substantial part of the world's population as global processes of accumulation concentrate wealth in fewer and fewer hands, shows the enormous challenge faced by the current system in its efforts to reconcile the economic with the social dimension of sustainable development, in sum, to practically reflect intergenerational equity and support the fulfillment of the Millennium Development Goals.[169] Sustainable development we argue, will not be achieved until the principles discussed above are internalised, to effectively guide states in their domestic and international policies.

The use of speculative instruments related to the environment are false solutions to economic problems and not only fail to internalize environmental liabilities, but also generate new environmental and social liabilities

[169] Vid. Economistas sin Fronteras (EsF), Perspectivas de cumplimiento de los Objetivos del Milenio: de mal en peor, 2009. Available on line at: http://www.2015ymas.org/documentos_ver.asp?id=39 (access the 15th of April 2013). Also EsF: "La situación de los Objetivos del Milenio a mitad de camino para 2015", in Plataforma 2015 and El perfil social del desarrollo, Icaria Editorial, 2007.

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4

Foundations for a systemic change in International Law

by Antonio Cardesa-Salzmann

4.1 Reconstructing international law for environmental justice

The above analysis has demonstrated that current international law has neither been able to shape a real, nor an equitable, answer to the global ecological crisis under the paradigm of sustainable development.[170] There is widespread consensus about the fact that governmentality[171] and governance[172] of the Earth System require a major overhaul if the international community hopes to meet that challenge. In this section, echoing a growing academic debate, we argue that a reinterpretation and reconstruction of the existing international legal order in terms of global constitutionalism offers a plausible way to mitigate and correct some of

[170] J. E. Viñuales. 'The Rise and Fall of Sustainable Development' (2013) 22 *Review of European Community and International Environmental Law* 3.

[171] On the notion of governmentality, see generally M. Foucault, 'Governmentality' in G. Burchell, C. Gordon and P. Miller (eds), *The Foucault Effect. Studies in Governmentality with Two Lectures by and an Interview with Michel Foucault* (University of Chicago Press 1991) 87. On the distinction between the notions of governance and governmentality, Lövbrand et al. sustain that 'while the governance concept is concerned with the loci and modes of governing, the governmentality concept draws attention to the systematic thinking that renders different governing strategies possible'. See E. Lövbrand, J. Stripple and B. Wiman. 'Earth System governmentality: Reflections on science in the Anthropocene' (2009) 19 *Global Environmental Change* 7, 8.

[172] F. Biermann and others. 'Earth system governance: a research framework' (2010) 10 *International Environmental Agreements: Politics, Law and Economics* 277.

the deficiencies identified and described in previous sections.[173] Our main point is that global patterns of ecologically unequal exchange will not be corrected by minor adaptations of existing international regimes. Nor will change come through the formal enactment of a given principle alone, as there is no inevitability of global (environmental) justice through law.[174] Rather, what it will take is a profound reconceptualisation of global governance in cosmopolitan terms.[175] In this sense, the formal recognition of the environment as a global public good, combined with an enhanced human rights approach to international (environmental) regimes is considered to be a pragmatic first step in this direction.[176]

Global patterns of ecologically unequal exchange will not be corrected by minor adaptations of existing international regimes; nor will change come through the formal enactment of a given set of principles. It will rather take a reconceptualisation of global governance in cosmopolitan terms

In view of the subject of this report - international debates on claims for a climate/ecological debt -, we draw inspiration from a combination of constitutional and Third World Approaches to International Law (TWAIL). Despite being inherently vague, and having clearly divergent foci, constitutionalism and TWAIL do have areas of convergence. For one, constitutionalism has been defined as a 'mindset', a project of political and moral regeneration, according to which international lawyers resort to a vocabulary of institutional hierarchies and fundamental values in the application of law, without being necessarily tied to any definite institutional project.[177] In particular, normative conceptions of international constitutionalism reassess the global legal order from the perspective of principles such as democracy, human rights, equality and solidarity, checks and balances, and the rule of law, so as to set up the legal foundation for the allocation of public powers in the international sphere, and submit them to constraint.[178] However, beyond and in addition to this dimension, as legal and political constraints to power, Poiares Maduro also conceives of constitutionalism as "a repository of the notions of the common good prevalent in a certain community and as an instrument for organising power in pursuit of that common good (constitutionalism as an expression of polity)"[179]. As he continues to argue, constitutionalism also furthers

> a deliberative framework in which competing notions of the common good can be made compatible or arbitrated in a manner acceptable to all, thereby balancing democratic concerns with the control of the political process by a few with the risk of a tyranny by the many (constitutionalism as deliberation).[180]

[173] See generally C. F. J. Schwöbel, *Global Constitutionalism in International Legal Perspective* (Martinus Nijhoff 2011). See also J. Klabbers, A. Peters and G. Ulfstein, *The Constitutionalization of International Law* (OUP 2009).

[174] J. Brunnée, 'Climate Change, Global Environmental Justice and International Environmental Law' in J. Ebbesson and P. Okowa (eds), *Environmental Law and Justice in Context* (CUP 2009) 316, 328.

[175] P. G. Harris, 'Reconceptualizing Global Governance' in J. S. Dryzek, R. B. Norgaard and D. Schlosberg (eds), *The Oxford Handbook of Climate Change and Society* (OUP 2011) 639.

[176] A. Boyle. 'Human Rights and the Environment: Where Next?' (2012) 23 *EJIL* 613.

[177] M. Koskenniemi. 'Constitutionalism as Mindset: Reflections on Kantian Themes About International Law and Globalization' (2007) 8 *Theoretical Inquiries in Law* 9.

[178] A. L. Paulus, 'The International Legal System as a Constitution' in J. L. Dunoff and J. P. Trachtman (eds), *Ruling the World? Constitutionalism, International Law, and Global Governance* (CUP 2009) 69, 90-3.

[179] M. Poiares Maduro. 'The importance of being called a constitution: Constitutional authority and the authority of constitutionalism' (2005) 3 *International Journal of Constitutional Law* 332, 333.

[180] Ibid.

In relation to this particular idea of a deliberative framework for the discernment of competing notions of the common good, Third World approaches, for their part, pursue an agenda of reconstructing the international legal order to overcome its structural bias toward the interests of Western developed countries. As one of the leading authors of TWAIL puts it, the end of the Cold War meant an acceleration of the process of economic globalisation underpinned by bespoke developments in international law and institutions that accommodate the interests of a transnational ruling elite. Within this process, "international law is coming to define the meaning of a 'democratic state' and relocating sovereign economic powers in international institutions, greatly limiting the possibilities of third world states to pursue independent self-reliant development"[181]. Accordingly, TWAIL scholars pursue a research agenda that addresses the concerns of marginal and oppressed groups and peoples, suggesting concrete changes in existing international regimes.[182]

Hence, the agendas of both approaches - those of global constitutionalism and TWAIL - seem to merge on specific items such as the promotion of transparency and accountability by international institutions and transnational corporations, the enhancement of an effective use of the language of rights by injecting peoples' interests in non-territorialised legal orders, and the promotion of sustainability and equity.[183] These parallel research agendas therefore seem to converge in what Louis J. Kotzé recently described as 'global environmental constitutionalism'.[184] Drawing from what Christine Schwöbel has identified as the social, institutional, normative and analogical perspectives or dimensions of global constitutionalism,[185] this author takes the view that a more general idea of global constitutionalism implies *inter alia* the institutionalisation and legitimisation of global governance by: posing limits on single *loci* of power (checks and balances); increasing participation and representation; enacting higher (constitutional) laws based on a common universal value system, including fundamental rights; and identifying common interests of humankind to be pursued as overarching objectives by any public authority.[186]

Admittedly, significant criticism has been raised with respect to the prospects of assessing international environmental law in terms of constitutionalism.[187] Indeed, as Kotzé acknowledges, for the time being (environmental) constitutionalism cannot realistically be considered as a globally dominant ideology, nor can this be expected to come about any time soon. Still, in his words:

[181] B. S. Chimni. 'Third World Approaches to International Law: A Manifesto' (2006) 8 *International Community Law Review* 3, 7.

[182] Ibid.

[183] Ibid.

[184] L. J. Kotzé. 'Arguing Global Environmental Constitutionalism' (2012) 1 *Transnational Environmental Law* 199.

[185] Schwöbel (n 173), ch1.

[186] Kotzé (n 184), 216.

[187] D. Bodansky. 'Is There an International Environmental Constitution?' (2009) 16 *Indiana Journal of Global Legal Studies* 565.

> [o]ne could nevertheless reasonably expect that, because of the causal reciprocity and interlinkages between domestic and supranational law and governance regimes, a gradually increased process of domestic constitutionalisation of law and governance generally, and environmental law and governance specifically, could contribute in a bottom-up way to establish global environmental constitutionalism as a dominant prevailing ideology. So too could the expansion of established global constitutionalist elements such as universal human rights contribute to its global ideological growth and entrenchment.[188]

As usual, several caveats apply. In the first place, we are aware of the fact that embracing constitutionalism means relying on a predominantly European perspective on international law. Therefore, while promoting our arguments, attention will necessarily be paid to avoiding excessive West-centrism, by keeping in mind and duly acknowledging the global society's trans- or multi-civilisational dimension. In this sense, we share Onuma Yasuaki's position, who upholds the fundamental importance of civilisational factors for a thorough, more nuanced and comprehensive understanding of international law in contemporary globalised society. He argues that the international and transnational perspectives under which international law has been predominantly scrutinised need to be complemented by a third, transcivilisational perspective, as a way to overcome analytical approaches flawed by West-centrism and state-centrism. Yet, this author does not conceive of the transcivilisational perspective as an alternative theory or methodology of international law. Rather, he defines it as a 'perspective from which we see, sense, recognise, interpret, assess, and seek to propose solutions to ideas, activities, phenomena and problems transcending national boundaries, by developing a cognitive and evaluative framework based on the recognition of plurality of civilisations and cultures that have long existed in human history.'[189]

The second caveat regards the purpose of this section, which does not aim at fully exploring the potential of the global constitutional paradigm so as to correct present patterns of ecologically unequal exchange. This will be dealt with in the next Chapter (5). Rather, the present one tries to identify existing elements of the global legal order that may serve as anchoring points for an eventual process of constitutionalisation.

Accordingly, we will briefly appraise existing global environmental regimes so as to assess their present degree of constitutionalisation and, hence, their actual contribution to global environmental justice (4.2). On this basis, we will reflect

[188] Kotzé (n 184), 229. Kotzé's expectation seems to be in line with Eyal Benvenisti's more general argument, according to which the intensification of transnational legal process in the present context of globalization is not only a top-down, but also a bottom-up process, which is contributing to erode the traditional deferential approach that domestic courts had shown towards their governments in the conduct of the country's international relations. According to this author, the transnational legal process seems to further and intensify the strategic use of foreign and international law by national courts, which thereby 'seek to resist globalization's threat to their own national democratic processes, and to their own recent achievements to bolster their institutional independence'. See E. Benvenisti. 'Reclaiming Democracy: The Strategic Uses of Foreign and International Law by National Courts' (2008) 102 *AJIL* 241, 244.

[189] Y. Onuma, *A Transcivilizational Perspective on International Law. Questioning Prevalent Cognitive Frameworks in the Emerging Multi-Polar and Multi-Civilizational World of the Twenty-First Century* (Martinus Nijhoff 2010), 81.

upon the potential of concepts arising from social movements, such as environmental justice and climate/ecological debt, so as to underpin a bottom-up transformation process from public *international* law to global *public* law. The incorporation of principles of inter- and intra-generational equity into global environmental law can thereby contribute to changing the formerly discretionary role of states in their mutual relations, towards a more functional role. According to Ellen Hey, a more functional role would imply that '[s]tates are to act in the interest of individuals and groups in society and in the common interest'[190] (4.3). To conclude, despite the significant scepticism that has been voiced in this regard,[191] we will reflect on the convenience and feasibility of an enhanced human rights approach to global environmental regimes as a pragmatic strategy to trigger a process of global environmental constitutionalisation (4.4).

4.2 What basis for constitutionalising global environmental law?

In the field of international environmental law, traditional principles concerning the use and exploitation of shared resources in the context of mutual, bilateral relations of neighbourliness in classic international law, have been complemented by multilateral treaties addressing the protection of global environmental goods, which are explicitly or implicitly regarded to be of 'common concern'[192]. In this broad normative context, environmental regimes are typically shaped as dynamic, sectoral legal systems in which a multilateral enviromental agreement (MEA) sets the foundational legal instrument that establishes the commonly agreed definition of the specific environmental problem being addressed, as well as the elementary principles, rules and institutions that will serve as a basis for the process of cooperation. These principles and rules constitute the backbone of the regime and are typically defined in open terms, hence allowing their development in the MEA's institutional settings, as scientific and political consensus on the measures necessary to cope with the environmental problem evolving.[193] Within this legal framework, the measures foreseen in MEAs are applied through the use of different regulatory approaches, ranging from direct regulation (command-and-control) to the use of different kinds of economic instruments, with an increasing trend towards a more prominent use of systems of economic incentive.[194]

Despite the trend toward the protection of common versus individual interests in global environmental regimes, dominant conceptions of justice influencing their design are consistent with neoliberal political economic ideology

[190] E. Hey. 'Common Interests and the (Re)constitution of Public Space' (2009) 39 *Environmental Policy & Law* 152, 154.

[191] M. Koskenniemi. 'Human Rights Mainstreaming as a Strategy for Institutional Power' (2010) 1 *Humanity: An International Journal of Human Rights, Humanitarianism, and Development* 47. From a TWAIL perspective, see B. Rajagopal, *International Law from Below. Development, Social Movements and Third World Resistance* (CUP 2003), 246.

[192] M. Fitzmaurice. 'International environmental law as a special field' (1994) 25 *Netherlands Yearbook of International Law* 181, 220-1. See also P. M. Dupuy. 'Où en est le droit international de l'environnement à la fin du siècle?' (1997) 101 *Revue Générale de Droit International Public* 873.

[193] T. Gehring, 'Treaty-Making and Treaty Evolution' in D. Bodansky, J. Brunnée and E. Hey (eds), *The Oxford Handbook of International Environmental Law* (OUP 2007) 467, 473-5.

[194] R. B. Stewart, 'Economic Incentives for Environmental Protection: Opportunities and Obstacles' in R. L. Revesz, P. Sands and R. B. Stewart (eds), *Environmental Law, the Economy, and Sustainable Development* (CUP 2000) 171, 220-7.

Conceived as a far more effective means for the internalisation of environmental costs, their implementation by national authorities in the quest for sustainable development is encouraged in Principle 16 of the 1992 Rio Declaration on Environment and Development,[195] as an expression of the polluter-pays principle.

These techniques have also permeated international law. As it has already been argued elsewhere,[196] three types of environmental regimes may be distinguished on the basis of their underlying regulatory approaches. In a first group of environmental regimes aiming at the protection of global common themes - such as the ozone[197] and climate change regimes[198], and also the persistent organic pollutants regime[199] - MEAs establish measures of direct regulation, which are combined with economic incentive systems. These regimes set up global standards, such as the progressive reduction and elimination of controlled substances,[200] or the quantified limitation or reduction commitments of certain emissions,[201] whose implementation is to be incentivised through the use of various market-based instruments, such as restrictions in trade with controlled substances[202] or the so-called 'flexible mechanisms' under the Kyoto Protocol.[203]

In contrast, in a second set of regimes established for the protection of components of the global ecosystem that are natural resources under the jurisdiction of states, such as biodiversity[204] and desertification regimes,[205] the measures envisaged by MEAs enhance the application of principles and duties of general international law[206] within their respective scopes of application through economic instruments of a more general nature. As developed by the 2010 Nagoya Protocol,[207] the CBD establishes instruments for the equitable participation in the benefits and charges derived from the utilisation of genetic resources, as a way to incentivise the conservation and sustainable use of the

[195] UN Doc A/CONF.151/26/Rev.1 (Vol 1) (1992), Annex I.

[196] A. Cardesa-Salzmann. 'Constitutionalising Secondary Rules in Global Environmental Regimes: Non-Compliance Procedures and the Enforcement of Multilateral Environmental Agreements' (2012) 24 *JEL* 103.

[197] Vienna Convention for the Protection of the Ozone Layer (22 March 1985) 1513 UNTS 293, (1987) 26 ILM 1529; Montreal Protocol on Substances That Deplete the Ozone Layer (16 September 1987) 1522 UNTS 3, (1987) 26 ILM 1541.

[198] United Nations Framework Convention on Climate Change (9 May 1992) 1771 UNTS 107, (1992) 31 ILM 851; Kyoto Protocol (11 December 1997) 2303 UNTS 148, (1998) 37 ILM 22.

[199] Stockholm Convention on Persistent Organic Pollutants (23 May 2001) 2256 UNTS 119, (2001) 40 ILM 532.

[200] Arts 2 and 2A to 2I in relation with Annexes A, B, C and E Montreal Protocol; arts 3,4 and 6 in relation with Annexes A, B and C Stockholm Convention.

[201] Art 3 and Annex B Kyoto Protocol.

[202] Arts 4, 4A and 4B Montreal Protocol; art. 3(2) Stockholm Convention.

[203] Arts 6, 12 and 17 Kyoto Protocol.

[204] Convention on Biological Diversity (5 June 1992) 1760 UNTS 79, (1992) 31 ILM 822; International Treaty on Plant Genetic Resources for Food and Agriculture (3 November 2001) 2400 UNTS 379.

[205] Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, particularly in Africa (17 June 1994) 1954 UNTS 3, (1994) 33 ILM 1328.

[206] Art 3 CBD; Preamble, §15 UNCCD.

[207] COP Decision X/1, Annex I. UN Doc UNEP/CBD/COP/10/27 (2011).

components of biological diversity,[208] whereas the UN Convention to Combat Desertification envisages the sustainable use of soil by offering financial, scientific and technical development aid to developing countries.

A third group of environmental regimes - such as the hazardous wastes,[209] the biosafety[210] and the pesticides[211] regimes - specifically regulate international movements of products that pose a risk to the environment and human health in a way consistent with the WTO agreements, by submitting them to a prior informed consent procedure.[212] In complement, strict liability regimes for environmental damage are to be developed as a means of implementing the polluter-pays principle. However, none of the international legal instruments necessary to put them in place is yet in force. The Cartagena Protocol's COP-MOP just adopted the Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress in October 2010,[213] and the 1999 Basel Protocol on Liability and Compensation for Damage Resulting from Transboundary Movements of Hazardous Wastes has so far failed to obtain the required number of ratifications.[214] As for the pesticides regime, the Rotterdam Convention does not foresee the adoption of liability rules. Efforts made within the Conference of Plenipotentiaries to set in motion a process to close this loophole prior to the Convention coming into force did not succeed and were abandoned.[215]

The legal analysis of global MEAs reveals a decreasing degree of constitutionalisation of the principle rules in the three mentioned types of regimes. The core of the treaty obligations in the first group of regimes is certainly of a collective nature, as the problems addressed therein affect the global common themes and are considered to be a 'common concern of humankind',[216] Parties to these MEAs have agreed to a combination of direct regulation measures with economic instruments. Consequently, these MEAs establish global standards that are binding for all Parties, despite the different treatment accorded to them in view of their diverging degrees of economic development.[217] Parties to these regimes actually undertake obligations *erga omnes partes*, meaning that all states parties have an expressed or necessarily implied common legal interest in the

[208] The same approach is followed in the International Treaty on Plant Genetic Resources for Food and Agriculture, which is linked both to FAO and the CBD.

[209] Basel Convention on the Transboundary Movement of Hazardous Wastes and their Disposal (22 March 1989) 1673 UNTS 57, (1989) 28 ILM 649.

[210] Cartagena Protocol on Biosafety to the Convention on Biological Diversity (29 January 2000) 2226 UNTS 208, (2000) 39 ILM 1027.

[211] Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (10 September 1998) 2244 UNTS 337, (1999) 38 ILM 1.

[212] See generally C. Hilson, 'Information Disclosure and the Regulation of Traded Product Risks' (2005) 17 *JEL* 305.

[213] COP-MOP Decision BS-V/11. UN Doc UNEP/CBD/BS/COP-MOP/5/17 (2010).

[214] See <http://www.basel.int/ratif/protocol.htm> accessed 25 June 2013.

[215] A. Daniel. 'Civil Liability Regimes as Complement to Multilateral Environmental Agreements: Sound International Policy or False Comfort?' (2003) 12 *Review of European Community and International Environmental Law* 225, 234-5.

[216] Preamble, §1, UNFCCC.

[217] See generally, L. Rajamani, *Differential Treatment in International Environmental Law* (OUP 2006).

maintenance and implementation of the international regime.[218] This common legal interest is rooted and finds its expression in the political - and in a way, also *constitutional* - qualification of the issue area as, a common concern of humankind'.[219]

MEAs in the second set of regimes also address global environmental problems considered to be of 'common concern to humankind'.[220] However, as they relate to natural resources that are to a great extent under state jurisdiction, developed and developing countries have opposed (for different reasons) the establishment of direct regulatory measures.[221] In this second set of environmental regimes, MEAs reinstate the principle of sovereignty in their respective scope of application, as well as the prevention principle (*sic utere tuo ut alienum non laedas*). Hence, these MEAs establish a conventional framework for the application of collective obligations arising out of general international law in relation to the sustainable use of the natural resources concerned. However, the economic instruments for their application that comprise the core of the conventional regimes are bilateral and reciprocal in nature. In the following, I will refer to them as 'mixed regimes'.

Finally, with respect to the third group of regimes, MEAs regulating international movements of hazardous products that pose a risk to the environment and human health, also contribute to the protection of the global environment. Nevertheless, by regulating transboundary movements of these products between specific Parties, the provisions of these treaties are indeed multilateral, but contain a bundle of bilateral obligations of a reciprocal nature.

Nevertheless, despite this range of intensities in the protection of common versus (national) individualist interests in the aforementioned types of regimes, one might agree with the general argument put forward by Chukwumerijie Okereke, according to which dominant conceptions of justice that are indeed present in these regimes - namely those of justice as property rights and as self-interested reciprocity - are consistent with neoliberal political economic ideology.[222] Accordingly, this author sustains that 'the compromise over the neoliberal political doctrine has led to aspirations of global environmental justice being downgraded and co-opted for neoliberal ends much to the disadvantage of the South and in negation of the original vision of global sustainability.'[223] Moreover, even if one

[218] Third Report on State Responsibility by Mr. James Crawford, Special Rapporteur. UN Doc A/CN.4/507 (2000), §106.b.

[219] J. Brunnée, 'Common Areas, Common Heritage and Common Concern' in D. Bodansky, J. Brunnée and E. Hey (eds), *The Oxford Handbook of International Environmental Law* (OUP 2007) 550, 564-7.

[220] Preamble, §3, CBD and Preamble, §§1 and 3, UNCCD.

[221] F. Burhenne-Guilmin and S. Casey-Lefkowitz. 'The Convention on Biological Diversity: A Hard Won Global Achievement' (1992) 3 *Ybk Intl Envtl L* 43, 47.

[222] See C. Okereke, *Global Justice and Neoliberal Environmental Governance. Ethics, Sustainable Development and International Cooperation* (Routledge 2008) 256, chs 7-9. For a representative account of neoliberal thought on the balance of interests in the design of international regimes, see J. Pauwelyn, *Optimal Protection of International Law. Navigating between European Absolutism and American Voluntarism* (CUP 2008).

[223] Okereke (n 222), 123.

While acknowledging the scepticism they face in present legal scholarship, notions developed in the realm of social movements, such as *environmental justice*, or those of *ecological/climate debt*, have a potential contribution to make to the reconceptualisation of global governance

abstracts from these inherent biases in present international law and acknowledges the progression towards the protection of common (environmental) interests, what Ellen Hey has described as a mismatch between substantive elements and institutional and decision-making patterns in global environmental law continues to exist.[224] As a matter of fact, these patterns have failed to grant participatory rights to the *public concerned* - borrowing the terminology of the Aarhus Convention - [225] that are able to sustain an interactional process that fosters the legitimacy of global environmental law.[226] Therefore, as Hey suggests, researchers should focus

> on how existing patterns of decision-making and dominant paradigms in legal doctrine foster a system of law which institutionalizes the inequalities between the South and the North and on the implications of a multi-faceted system of decision-making for enhancing procedural fairness. The former requires a critical stance towards our own discipline; the latter a creative approach (…).[227]

Does global environmental constitutionalism provide a useful theoretical framework for such a creative endeavour?

4.3 Contributions by social movements

In theory, constitutionalism advocates for a global order in which more open, representative and participative law-making and law-enforcing processes and institutions shape an international economic system that fosters more equal patterns of exchange and is also more sensitive for values such as ecological integrity and human dignity. Its deliberative facet actually seems to allow the integratation of counter-hegemonic claims, such as those implicit in environmental justice[228] or ecological/climate debt,[229] into the collective discernment of competing notions of the common good.[230] Yet, from a TWAIL perspective, some aspects of global constitutionalism are probably still very close to hegemonic or imperialistic narratives of international law. In this sense, Rajagopal acknowledges that some socio-legal theorists and constitutionalists in Europe and the United States have engaged in critical reviews of liberal theories of rights, justice, and democracy taking into account social movements literature.[231] Nevertheless, he

[224] E. Hey, 'Global Environmental Law and Global Institutions: A System Lacking Good Process' in R. Pierik and W. Werner (eds), *Cosmopolitanism in Context. Perspectives from International Law and Political Theory* (CUP 2010) 45, 70-2.

[225] Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (25 June 1998) 2161 UNTS 447, (1999) 38 ILM 517.

[226] On this theoretical issue, see J. Brunnée and S. J. Toope, *Legitimacy and Legality in International Law. An Interactional Account* (CUP 2010).

[227] Hey (n 224), 72.

[228] On the notion of environmental justice, see generally D. Schlosberg, *Defining Environmental Justice: Theories, Movements, and Nature* (OUP 2007).

[229] For an appraisal of the notions of ecologically unequal exchange, ecological debt and climate justice, see J. T. Roberts and B. C. Parks. 'Ecologically Unequal Exchange, Ecological Debt, and Climate Justice. The History and Implications of Three Related Ideas for a New Social Movement' (2009) 50 *International Journal of Comparative Sociology* 385, 388.

[230] See n 179 *supra*.

[231] Rajagopal (n 191), 234. Among the authors he explicitly refers to, he mentions Jürgen Habermas and his discourse theory on law and democracy: see J. Habermas, *Faktizität und Geltung. Beiträge*

reproaches international law and mainstream international legal scholarship for an artificially narrow outlook, which "remains trapped in a version of politics that is narrowly focused on institutional practice, and an understanding of the 'social' that takes the unity of the agent as given"[232]. As a consequence, so his argument goes, extra-institutional social contestation in the Third World is simply not apprehended by international legal scholarship.[233] For this author

> [s]ocial movements arise, then, as a challenge to liberalism and Marxism, and, therefore, by extention, to extant theories of international law… Social movements reverse both these ways of imagining an international order: they seek to preserve the autonomy implied in the positivist vision, but by abandoning the nation state as the collectivity that would guarantee such autonomy; they also share the naturalists' deep suspicion of the leviathan, but allow a multiplicity of arenas including the community (rather than the individual alone) as political actors. Instead of the unified political space allowed by these extant theories, social movements seek to redefine the very boundaries of what is properly 'political.'[234]

As has been highlighted in previous sections, despite temporary compromises such as the one enshrined in Principle 7 of the Rio Declaration, there has been a persistent dissonance in international environmental dialogue between the North and the South that may be traced back to the days of the 1972 Stockholm Conference. As Lavanja Rajamani put it, "[a]t the root of the divergence between them lies a struggle to influence the values underpinning international environmental law and therefore the burden-sharing arrangement for global environmental protection"[235]. While developing countries' claims are based on the culpability/entitlement premise,[236] which derives from a vested right and is rooted in obligation and liability,[237] developed countries rely on the consideration/capacity premise,[238] which in turn derives from benevolence and is rooted in morality, humanity and goodwill.[239] However, as Rajamani stresses, despite presenting itself as neutral, the consideration/capacity premise is fundamentally flawed, in that "it seeks to wipe the colonial past from our collective memories, and start afresh, as if past patterns of exploitation have little bearing on current inequities …"[240] The culpability/entitlement narrative, for its part, is also profoundly ideology driven, but highlights "that contemporary environmental problems must be viewed in context, and that appropriate mechanisms must be developed by the international community to recognize and right certain historical wrongs"[241].

zur Diskurstheorie des Rechts und des demokratischen Rechtsstaates (Suhrkamp 1992).

[232] Ibid., 235.

[233] Ibid.

[234] Ibid, 243.

[235] Rajamani (n 217), 71-2. Footnotes omitted.

[236] Ibid., 72.

[237] Ibid., 86.

[238] Ibid., 79.

[239] Ibid., 86.

[240] Ibid., 87.

[241] Ibid., 88.

This debate has defined the major fault line in global environmental diplomacy over the past decades, and will certainly continue to do so in the future. However, the debate about the burden-sharing for global environmental protection cannot be regarded exclusively in its intergovernmental dimension. Social movements, such as EJOs, also have a clear stake in it. Undoubtedly, this is an area of research in which an enhanced dialogue between the legal (academic) community and social activism is still needed. Despite the significant scepticism that predominates in present international legal scholarship,[242] we take the view that notions developed in the realm of social movements, such as 'environmental justice', which might also imply that of ecological/climate debt, have a potential role to play in this context.[243]

Nevertheless, the gap between these movements' claims and mainstream legal narratives needs to be bridged. Such an endeavour demands an effort of creativity, which takes duly into account the trans - or multi - civilisational dimension of global society,[244] so as to devise a post-Westphalian order that overcomes what Rajagopal calls "the limitations of a Kantian liberal world order based primarily on individual autonomy and rights, and a realist world order based primarily on state sovereignty"[245]. As a matter of fact, the necessity to deal with global heterarchy and normative/cultural plurality is one of the existential challenges of environmental law scholarship and, especially, of international environmental law scholarship.[246] By suggesting the need for a post-Westphalian order forwarding *inter alia* counter-hegemonic claims, however, one also needs to be aware that what is proposed comes with a heavy ideological stance. At the same time however, attitudes implying a "resolutely single-minded pursuit of an end" must be avoided.[247]

An enhanced collaboration between legal scholarship and environmental justice activism may be useful for grasping 'peripherical' reivindications so as to draw them to the core of the global legal system

Returning to the subject of this report, legal debates on claims for an ecological/climate debt may be classified among culpability/entitlement narratives. As reflected in Chapter 1 of this report, these debates represent a partial aspect of a broader political and legal debate that may be traced back to the days of the New International Economic Order (NIEO). The notion of ecological debt was actually advanced by CSOs in the Global Forum that was held in parallel to the

[242] In his recently edited book on *Global Justice and Sustainable Development*, Duncan French claims to avoid deliberately the term environmental justice in favour of that of global justice. By focusing almost exclusively on incorporating the 'social' within the 'environmental', without properly acknowledging the intrinsic worth of what he regards to be the moral imperative of human development, French does not consider '…that the term [of environmental justice] has ever intended to be sufficiently inclusive to incorporate the entire complexity of human development and, more specifically, the moral-cum-political *problematique* of North-South in equality'. See D. French, 'Sustainable Development and the Instinctive Imperative of Justice in the Global Order' in D. French (ed), *Global Justice and Sustainable Development* (Martinus Nijhoff 2010) 3, 5.

[243] K. Mickelson, 'Critical Approaches' in D. Bodansky, J. Brunnée and E. Hey (eds), *The Oxford Handbook of International Environmental Law* (OUP 2007), 262, 274.

[244] See n 189 *supra*.

[245] Rajagopal (n 191), 245.

[246] E. Fisher and others, 'Maturity and Methodology: Starting a Debate about Environmental Law Scholarship' (2009) 21 *JEL* 213, 241.

[247] Ibid., 224.

UN Conference on Environment and Development (UNCED) in Rio de Janeiro in June 1992.[248] On that occasion, the participant NGOs adopted a series of alternative treaties, which included *inter alia* the so-called Debt Treaty (see extract in box 4).[249] In its preamble, the signatory NGOs recognised

> the existence of a planetary ecological debt of the North; this 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;[250]

On this basis, these NGOs pledged to "work for the recognition and compensation of the planetary ecological debt of the North with respect to the South"[251] and devised a series of strategies for action, including "work with jurists and lawyers to establish regulations and legislation on international transactions [and] put pressure to make them binding to nations and to corporations"[252]. One of the most active NGOs in this domain has been *Acción Ecológica*. Since its 1999 campaign,[253] it has rallied Southern, as well as Northern, EJOs to put pressure on corporations, governments and international institutions in support of the reparation of past ecological debt and the prevention of its continuing growth.[254]

Admittedly, despite being a terminology foreign to existing MEAs, "[c]ertain principles of international environmental law address issues that are part of the concept of ecological debt and some of the ideas that frame the concept are, to some extent, already rendered in the wording of existing MEAs"[255]. Beyond specific mechanisms established in MEAs that contribute one way or the other to correct historical wrongs however, the legal status of the polluter-pays and CBDRP principles remains unclear. Moreover, inter-state or transnational legal claims for the restitution of ecological/climate debt are complex. In addition to the jurisdictional limitations that we have highlighted elsewhere,[256] historical claims also have to face constraints based on substantive law. As Dinah Shelton suggests, based on the experience of victims of the Holocaust, historical claims might warrant reparations in three circumstances:

> First, many historical wrongs have consequences that continue into the present; these continuing wrongs result in a convergence in the notions of inter- and intragenerational equity. Second, redress is due when the acts were illegal at the time committed and no reparations have been afforded. Third, reparations are justified where reliance on the earlier law was not reasonable and expectations were

[248] Mickelson (n 243), 274-5. See also <www.ejolt.org/2013/05/ecological-debt/> (accessed 25 Aug. 2013).

[249] <www.stakeholderforum.org/fileadmin/files/Earth_Summit_2012/1992_treaties/Debt_Treaty.pdf> (accessed 25 Aug. 2013).

[250] Ibid., para. 2.

[251] Ibid., para. 16.

[252] Ibid., para. 34.

[253] Acción Ecológica, 'No More Plunder. They Owe Us the Ecological Debt!' (1999) 78 *Green Alert*.

[254] For further details, see ch 2 above.

[255] E. Paredis and others, *The Concept of Ecological Debt: its Meaning and Applicability in International Policy* (Academia Press 2008), 89.

[256] A. Pigrau and others, 'Legal Avenues for EJOs to Claim Environmental Liability' (2012) 4 *EJOLT Reports* (ejolt.org).

> not settled because the law patently conflicted with fundamental principles then in force.[257]

Yet, the fate of inter-state claims for the restitution of ecological debt, such as in *Certain Phosphate Lands (Nauru vs. Australia)*, or transnational claims, as in the *Kivalina* case and the *Chevron-Texaco* case - to mention just a few examples - illustrates this complexity, as well as the legal system's reluctance to give up the very premises of the global economic structures in place. In addition to public interest litigation, however, social movements also have other ways to express their contestation against a state of affairs that comes close to a systemic exclusion of their claims. Activism and, especially, tribunals of opinion, such as the *Tribunale Permanente dei Popoli*, channel an outcry from the global legal system's periphery against exclusion, by which social movements voice alternative interpretations of existing law and vindicate concrete changes.[258] As Karin Mickelson has written,

> The critiques that emerge from civil society, in particular, are forced to strike a balance between envisioning alternatives and confronting the reality of entrenched power structures. However, there is little room for despair in their work. These activists may not always be optimistic about the prospects for radical change, but most seem to maintain and draw on some sense of hope for a better future. It is this sense of hope that may be the most important contribution that critical approaches can offer the discipline of international environmental law, which bears such an enormous responsibility for steering us towards a more just and sustainable international order.[259]

Under these circumstances, and in line with the strategy set out in paragraph 34 of the Debt Treaty drafted in the 1992 Global Forum held in Rio, an enhanced collaboration between legal scholarship and environmental justice activism may be useful for grasping these 'peripherical' revindications so as to draw them to the core of the global legal system. Research into the various discourses inherent to 'environmental justice' may clarify the role of equity, or other more specific criteria (entitlements, capacities, needs, historical responsibilities, etc.),[260] as a useful tool to qualify, re-interpret and even re-conceptualise core principles of international law and, hence, the obligations that states have in the context of international and transnational relations.[261] In this way, 'environmental justice' could play a role as a factor of systemic integrity of the international legal order, driven towards 'sustainability' in its original sense. This is also a normative context in which the relationship between international environmental norms and norms relating to the protection of *human rights*, *international humanitarian law*, and even *international criminal law* needs to be assessed.

[257] D. Shelton, 'Intergenerational Equity' in R. Wolfrum and C. Kojima (eds), *Solidarity: A Structural Principle of International Law* (Springer 2010) 213, 236.

[258] A. Fischer-Lescano, *Globalverfassung. Die Geltungsbegründung der Menschenrechte* (Velbrück 2005), 154-7. See also M. Pianta, 'Parallel Summits of Global Civil Society' in H. Anheier, M. Glasius and M. Kaldor (eds), *Global Civil Society* (OUP 2001), 169, 173.

[259] Mickelson (n 243), 289.

[260] D. Shelton, 'Describing the elephant: international justice and environmental law' in J. Ebbesson and P. Okowa (eds), *Environmental Law and Justice in Context* (CUP 2009) 55.

[261] A. Nollkaemper, 'Sovereignty and Environmental Justice in International Law' in J. Ebbesson and P. Okowa (eds), *Environmental Law and Justice in Context* (CUP 2009) 253.

Box 4 Debt Treaty
NGO Alternative Treaties from the Global Forum at Rio de Janeiro, 1-15 June 1992
Source: http://www.stakeholderforum.org

Debt Treaty

Concerns and Pledges of Development and Environment Social Movements and Non-Government Organizations (NGOs)

(The terms South and North presuppose that there is a North in the South and a South in the North).

1. Considering that the foreign debt is the most recent mechanism of the exploitation of Southern peoples and the environment by the North, thus adding an extra burden to the historical, resource and cultural debt of the North to the South;
2. Considering the existence of a planetary ecological debt of the North; this is essentially constituted by economic and trade relations based on the indiscriminate exploitation of resources, and its ecological impacts (intensification of erosion and desertification, destruction of tropical forests, loss of biodiversity and growing disparities in lifestyles), including global environmental deterioration, most of which is the responsibility of the North;
3. Considering that the Southern countries' debt burden is a major drain on their development and ecological resources: they pay out over USD 50 billion more in debt service each year than they receive in new capital from the North, and yet the foreign debt continues to grow dramatically; this has rendered Southern countries totally or partially incapable of paying the debt;
4. Considering that the indebtedness of Southern countries is rooted in a development model which is not responsive to the needs of the majorities of their populations, but rather involves the harmful exploitation of people, resources and the environment of Southern countries, through adverse terms of trade, trade protectionism and the power wielded by international capital by, for example, transnational corporations;
5. Considering that the perverse logic of the debt crisis -- the more Southern countries pay the debt, the more they owe -- has generated massive net financial transfers from the poor to the rich, thus perpetuating a process of decapitalisation, impoverishment and environmental destruction that has devastating consequences for the South; there are also negative impacts to the peoples of the North with taxpayers' money bailing out banks, growth in unemployment and an increase in drug abuse;
6. Considering that the illegal and fraudulent debts, which are characterised either by violation of national laws, capital flight or corruption, were used to finance overpriced and substandard projects and were perpetrated both by the creditors and recipients;
7. Considering that steps to reduce or cancel the debt are necessary but insufficient to overcome social inequity and environmental degradation, unless a structural transformation of development objectives, priorities and methods is undertaken; this includes a) structural transformation in the financial, commercial and technological relations between rich and poor, and b) a participatory and democratic political process;

[…]

We Pledge To: (All pledges are meant to take into account the full participation of women and indigenous peoples)

15. Pressure governments and banks to establish a democratic process for the resolution of the debt problem by submitting to full transparency and greater accountability through freedom of access to information, public audits with definite deadlines and the participation of people's organisations and NGOs in the making of debt policies
16. Work for the recognition and compensation of the planetary ecological debt of the North with respect to the South
17. Work strategically for the effective cancellation of the debt, for the elimination of net transfers of resources from the South to North, for the generation of local technologies and for the establishment of transfers of appropriate technology to the South within this decade
18. Work tactically for massive reduction of the debt burden starting with the immediate repudiation of all illegal and fraudulent debts
19. Oppose all debt conversion measures that do not meet people's interests (including swaps tied to conditionality, sale of agricultural lands, loss of sovereignty over national territory, extraction of genetic material from areas that are rich in biodiversity, increase in inflation and public expenditure) nor undertake appropriate actions consistent with our debt-management strategies
20. Strive to replace the present global development model with sustainable, equitable and participatory models, including structural transformation in the North and global and national redistribution of income and wealth and access to resources, which place resources and decisions in the hands of local communities and organised society
21. Put pressure on Northern governments and international institutions to get fairer and just terms of trade for the South, including the dismantling of all unfair protective measures imposed by the North
22. Hold Northern governments accountable to the minimum level of Overseas Development Assistance at 0.7% of Gross National Product; while working to ensure that financial flows to the South support ecologically, socially sustainable and participatory development; with the ultimate goal of eliminating the dependence of the South on this form of assistance

[…]

Strategies for Action

29. Set up a coordinating committee whose principal task is to further develop and particularise the campaigns and pledges contained in this treaty, and start a global network on debt, development and the environment.
30. Undertake joint campaigns against the debt, building on case studies from the regions of Latin America, Africa and Asia. These campaigns will be addressed at the local, provincial, national, regional and international level. The campaigns will include a policy statement on illegal and fraudulent debts that will reinforce demands for the cancellation of the debt.
31. Develop joint policy positions on the debt regarding freedom of information, transfer of resources, accountability and public participation in policy making; press for the democratisation of the dialogue between creditor institutions and governments so as to include social organisations and NGOs. These policy positions will be addressed to multilateral lending agencies, creditor governments, relevant official institutions, social movements and the NGO community.
32. Put pressure 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.
33. Establish a 'Global Day for Freedom from Debt' (date to be established by the coordinating committee). Actions on this day could involve pressure on creditor banks, education, demonstrations, and symbolic forms of action.
34. Work with jurists and lawyers to establish regulations and legislation on international transactions; put pressure to make them binding to nations and to corporations.
35. Put pressure for bank transparency regarding financial transfers, including those of private citizens, from South to North, such as an annual bank deposit statement by country.
36. Withdraw our funds from those banks and companies which support or implement environmentally and socially destructive activities and initiate campaigns to target them.

Fig. 6

The 1992 Global Forum

As world leaders and their delegations met for the United Nations Conference on Environment and Development (UNCED), or Earth Summit, from 3-14 June 1992 in Rio de Janeiro, Brazil, an unprecedented number of non-governmental organisations (NGOs) convened in Rio for the '92 Global Forum. A panel discussion at Global Forum.

11 June 1992

United Nations, New York

Photo credit: UN Photo/Ruby Mera

The 'environmental justice' discourse may influence the adoption of new substantive and procedural norms of international law, aimed at promoting corrective, distributional and procedural fairness as a means to achieve international (environmental) justice. Research into the moral and philosophical foundations of 'international justice' and 'international environmental justice'[262] may eventually contribute to the identification of "norm[s] accepted and recognized by the international community of states as a whole as a norm from which no derogation is permitted", i.e., peremptory norms of the international legal order concerning the protection of the environment.

4.4 A human rights approach to global environmental regimes

In this subsection we will specifically address the suitability of a human rights approach to global environmental regimes as a useful and pragmatic tool to foster global (environmental) justice. In so doing, however, one needs to be aware of the fact that the appropriateness of such an attempt is contested from different angles. Martti Koskenniemi has expressed his "scepticism about the virtues of human rights mainstreaming as a general, abstract project of administrative empowerment", as the implicit ideological load of such an operation and its uncertain outcome may very well dilute the 'revolutionary' within human rights.[263] In similar terms, Malcolm Langford, Wouter Vandenhole, Martin Scheinin and Willem van Genugten warn about "the potential dangers of depoliticising general justice claims by squeezing them into the framework of law, and, even more narrowly, international law"[264].

[262] See L. H. Meyer (ed), *Legitimacy, Justice and Public International Law* (CUP 2009).

[263] Koskenniemi (n 191), 54-5.

[264] See M. Langford and others (ed), *Global Justice, State Duties. The Extraterritorial Scope of Economic, Social and Cultural Rights in International Law* (CUP 2013), 30.

From a different perspective, Balakrishnan Rajagopal also criticises the fact that human rights law continues invariably linked to its Lockian liberal roots, which do not apprehend, nor respond to, the multi-civilisational reality of the global society. In this tradition, human rights are conceived of as negative rights, *i.e.* as spaces of individual autonomy *vis-à-vis* the state that do not call into question "the structural or sociopolitical root causes of human-rights violations such as patterns of land ownership, militarisation, local autonomy, or control over natural resources"[265]. In this way, he considers that human rights law has lost much of its tranformatory potential "to reflect pluriversal ways of achieving human dignity and freedom", as the "articulation of any emancipatory project in the language of rights is limited within its rationalistic and disciplinary terms, which emphasize individual autonomy over relationships and trust"[266].

Should existing human rights be 'greened'? Or should a new human right to a decent environment be developed? Whith what content?

Still, regardless of the manifold reasons to think that human rights do not lead to *panacea*, one could agree with Chimni in that "[t]here is a need to make effective use of the language of human rights to defend the interest of the poor and marginal groups"[267]. Moreover, despite its inherent limitations, (international) human rights law has accredited a remarkable capacity to evolve and adapt to changing realities and societal demands.[268] As a matter of fact, one of the areas to which human rights law seems to be expanding is indeed that of environmental protection.

As Alan Boyle acknowledges, the relationship between human rights and the environment is far from being simple or straightforward.[269] The complexity of the issue is multi-faceted. First of all, there is the question of how to sensibly grasp environmental protection through human rights law. Should existing human rights - including civil and political, as well as economic, social and cultural rights - be 'greened'? Or should a new third generation human right to a decent environment be developed, and with what content? As Boyle points out, so far

> the most important contribution existing human rights law has to offer with regard to environmental protection and sustainable development is the empowerment of individuals and groups affected by environmental problems, and for whom the opportunity to participate in decisions is the most useful and direct means of influencing the balance of environmental, social, and economic interests.[270]

Despite being a regional treaty, the Aarhus Convention offers a source of inspiration in this regard, as it fosters 'environmental democracy' by recognising individual and CSO rights of access to information, participation in decision-making and access to justice in environmental matters.[271] Nevertheless, according

[265] Rajagopal (n 191), 247.

[266] Ibid., 247-8.

[267] Chimni (n 181), 24.

[268] Langford and others (n 263), 29.

[269] See Boyle (n 176).

[270] Ibid., 625.

[271] C. Larssen, 'La convention d'Århus: 'avancée majeure du droit international'?' in J. Crawford and S. Nouwen (eds), *Select Proceedings of the European Society of International Law: Volume 3 2010* (Hart 2011).

to Boyle, any future attempt to formulate a meaningful human right to a decent environment in a treaty needs to address the environment as a global public good and balance it against the hitherto overarching economic and developmental priorities of existing human rights.[272]

Secondly, there is the question of the actual enforceability of human rights with respect to global environmental problems that are faced by humankind in its entirety. Access to justice is generally recognised as a fundamental human right under global and regional treaties. Yet, it is doubtful whether these international access-to-justice standards actually encompass transnational (human rights) litigation.[273] As Francesco Francioni has pointed out, access to justice emerged under customary international law as a minimum standard of treatment of aliens (foreigners), from where it permeated other areas of international law, before consolidating in modern human rights law.[274] There it is characterised as a procedural right to ensure the fulfilment of other substantive rights under domestic law.[275] Indeed, human rights law and the treatment of non-nationals are among the few areas in which national courts have been empowered by international law, meaning that states have an international obligation to recognise a right for remedy for affected persons, hence attributing powers to their domestic courts.[276]

Arguably, the right of victims of transboundary (environmental) harm to access the courts of the country in which the causing activity was carried out also falls within this category.[277] Notwithstanding this empowerment however, it is unclear whether - and if so, to what extent - global access-to-justice standards under contemporary international law go as far as encroaching on the way in which the extra-territorial jurisdiction of domestic courts is defined and exerted, by levering out rules of general international law that impose limitations on extraterritoriality.[278] In summary, to borrow once again Boyle's terms,

> [t]his development shows how victims of transboundary pollution already have rights in international law which they can exercise within the legal system of the polluting state; what remains uncertain is whether they also have human rights exercisable against the polluting state.[279]

[272] Boyle (n 176), 628-9.

[273] See J. Zerk. 'Extraterritorial Jurisdiction: Lessons for the Business and Human Rights Sphere from Six Regulatory Areas' (2010) (59) *Corporate Social Responsibility Initiative Working Paper*, 148.

[274] See F. Francioni, 'The Rights of Access to Justice under Customary International Law' in F. Francioni (ed), *Access to Justice as a Human Right* (OUP 2007) 1, 54-5.

[275] Ibid., 41.

[276] A. Nollkaemper, *National Courts and the International Rule of Law* (OUP 2011), 35-8. In the same sense, see also C. M. Vázquez. 'Tort Claims and the Status of Customary International Law' (2012) 106(3) *AJIL* 531, who relies on *Sosa v. Alvarez-Machain* 542 U.S. 692 (2004).

[277] See the ILC's Draft principles on the allocation of loss in the case of transboundary harm arising out of hazardous activities, Principle 6. UNGA Res 62/68 (6 Dec. 2007) UN Doc A/RES/62/68.

[278] However, this is a field in which, traditionally, opinions diverge on the extent to which extra-territorial jurisdiction—to prescribe and to adjudge—goes in conformity with the *Lotus* principle. See R. Higgins, *Problems and Process. International Law and How We Use it* (Clarendon Press 1994), 77. See also O. de Schutter, 'Extraterritorial Jurisdiction as a Tool for Improving the Human Rights Accountability of Transnational Corporations' *Faculté de Droit de l'Université Catholique de Louvain* (Louvain 22 December 2006), 25-9.

[279] Boyle (n 176), 635.

In this regard, this author distinguishes instances of inadequately controlled transboundary pollution - which may be grasped from the perspective of general international law and, arguably, also from a human rights angle - from instances of non-compliance with commitments undertaken by states in the context of the climate change regime.[280] In this second case, as we shall see, enforcement mechanisms foreseen in general international law and international human rights law show clear limitations. This does not mean, however, that a somewhat differently conceived human rights approach to climate change would be entirely out of place.

With the aforementioned caveat in mind, we will address in the following the potentials of human rights approaches in global environmental regimes, distinguishing between those regimes that we have previously qualified as mixed and bilateralised regimes on the one hand, and those other regimes that we classify as collective.[281] In particular, following the examples used in the previous section, we will focus on the hazardous wastes and biodiversity regimes to assess the human rights approach in events of transboundary environmental harm (4.4.1), turning to human rights and climate change in a final subsection (4.4.2).

4.4.1 Human Rights and Transboundary Environmental Harm

Human rights approaches to the hazardous wastes and biodiversity regimes seem to follow divergent fates. Whereas states have shown reluctance to appraise environmental harm derived from transboundary movements of hazardous wastes from a human rights angle, the 2010 Nagoya Protocol on Access and Benefit-Sharing to some extent clarifies the duties of states *vis-à-vis* indigenous and local communities, thereby reinforcing the prospects for a meaningful human rights approach to the biodiversity regime.

What is so remarkable about the hazardous wastes regime is that, despite the human rights concerns that the issue has raised, which ultimately led to the adoption of a thematic mandate by the former UN Commission on Human Rights back in 1995,[282] no substantial progress seems to have been made in this regard.[283] Quite the contrary, in the context of the last revision of this thematic mandate, the Special Rapporteur complained especially about

> [t]he lack of attention paid to the mandate. During consultations with Member States, the Special Rapporteur is often confronted with arguments that issues of toxic waste management are more appropriately discussed in environmental forums than at the Human Rights Council. He would like to remind Member States that the transboundary movement of hazardous toxic and dangerous products and wastes has far-reaching human rights implications, as demonstrated by the impact of the Probo Koala incident in the city of Abidjan… He calls on the Human Rights Council to take this issue more seriously. He is discouraged by the limited number of States

Despite the human rights concerns about the hazardous wastes management, no substantial progress seems to have been made

[280] Ibid., 640-1.

[281] See subsection 2.

[282] UNCHR Res 1995/81 (8 March 1995). UN Doc E/CN.4/RES/1995/81.

[283] Boyle (n 176), 619.

willing to engage in constructive dialogue with him on the mandate during the interactive sessions at the Human Rights Council.[284]

The lack of appropriate attention that transboundary movements of hazardous products and wastes face in human rights' bodies of the UN system does not mean, however, that domestic courts that may be accessed by victims of transboundary environmental harm - as in the aforementioned *Trafigura* case - will be receptive to claims directly or indirectly based on human rights violations. This may apply particularly to the criminal proceedings carried out in the Netherlands in the context of the *Trafigura* case.[285]

Fig. 7

Special Rapporteur on Toxic Waste Addresses Rights Council

Marc Pallemaerts, UN Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes, addresses the 24th session of the Human Rights Council.

11 September 2013

Geneva, Switzerland

UN Photo/Jean-Marc Ferré

Developments concerning a human rights approach in the biodiversity regime have been somewhat more promising lately. An implementation of the CBD and its various protocols taking human dignity and human rights as threshold standards has long been advocated, especially - though not exclusively - as regards the provisions on access to biological resources and the sharing of benefits obtained from their (sustainable) utilisation.[286] As we have previously claimed, the biodiversity regime is a mixed regime that establishes loose obligations for states that pursue objectives of 'common concern to humankind'. In turn, most of these obligations are to be implemented through bilateral and public-private arrangements. Human rights have been identified as especially relevant within the biodiversity regime in the specific context of access to genetic resources and benefit sharing derived from their utilisation. Under the Convention's regime of

[284] UNHRC, Report of the Special Rapporteur on the adverse effects of the illicit movement and dumping of toxic and dangerous products and wastes on the enjoyment of human rights, Okechukwu Ibeanu, UN Doc A/HRC/9/22 (13 Aug. 2008), para. 34.

[285] For more details, see Pigrau and others (n 256), 54.

[286] E. Louka, *Biodiversity and Human Rights. The International Rules for the Protection of Biodiversity* (Transnational Publishers 2002), 19ff.

access to genetic resources, a balance was sought between the interests of provider and user countries: the former had recognised their sovereign rights over these resources, whilst they agreed to provide facilitated access to the latter states. However, as Cullet pointed out, no such compromise was reached with respect to knowledge related to genetic resources. In this way, states left the international regulation of this issue under the realm of the WTO and its TRIPS Agreement, a regime "skewed in favour of certain types of knowledge and in favour of the commercial use of this knowledge"[287].

In this specific context, the 2010 Nagoya Protocol on Access and Benefit-Sharing[288] has contributed to clarify state parties' commitments and reinforces the international protection of the rights of indigenous and local communities. In particular, the Protocol requires states to ensure that access to genetic resources and associated traditional knowledge held by indigenous and local communities is granted with their "prior informed consent or approval and involvement"[289]. It also foresees that benefits arising from the utilisation of these resources are to be shared in a fair and equitable manner with the indigenous and local communities concerned on the basis of MAT.[290] Also here, as Annalisa Savaresi has recently argued, the Protocol's "references to [prior informed consent] and requirements concerning participation and access to justice and information associated with MAT could and should be read through a human rights lens"[291].

As this author argues, the wording of the relevant provisions in the Nagoya Protocol seems to provide states a wide margin of discretion so as to define the actual right-holders, as well as substantive and procedural aspects of the participation of indigenous and local communities in any decision to provide access to genetic resources and associated traditional knowledge, and in the benefits arising from their utilisation. Yet, international human rights law provides hermeneutical standards according to which states - and especially their domestic courts - have to interpret the provisions in the Nagoya Protocol, thereby limiting the aforementioned discretion.[292] In particular, regarding the enforcement of the commitments undertaken by public or private parties with indigenous and local communities through MAT, the Nagoya Protocol foresees that the states shall "ensure that an opportunity to seek recourse is available under their legal systems, consistent with applicable jurisdictional requirements, in cases of

[287] P. Cullet, 'Environmental Justice in the Use, Knowledge and Exploitation of Genetic Resources' in J. Ebbesson and P. Okowa (eds), *Environmental Law and Justice in Context* (CUP 2009) 371, 378.

[288] Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilisation to the Convention on Biological Diversity (29 October 2010, not yet in force). CBD Decision 10/1, UN Doc UNEP/CBD/COP/10/27 (20 January 2011).

[289] Arts. 6(2) and 7 Nagoya Protocol.

[290] Art. 5(2).

[291] A. Savaresi, 'The International Human Rights Law Implications of the Nagoya Protocol' in E. Morgera, M. Buck and E. Tsioumani (eds), *The 2010 Nagoya Protocol on Access and Benefit-sharing in Perspective: Implications for International Law and Implementation Challenges* (Martinus Nijhoff 2013) 53, 68.

[292] Ibid., 68-79.

disputes arising from MAT"[293]. In this regard, Savaresi expects a similar development as has historically occurred under bilateral investment treaties (BIT). Namely, that any contracting party - and, eventually, also indigenous and local communities - may end up claiming before human rights treaty bodies, on grounds of denial of justice, if states do not provide for adequate access to justice to claim for their contractual rights under the MAT (*e.g.* against a domiciled agricultural/pharmaceutical/bio-tech corporation). In this sense, "human rights standards could be deployed by domestic courts, as well as international bodies, to assess whether parties to a dispute concerning MAT have been granted adequate access to justice"[294].

Very much in the line of thought put forward in previous parts of this section, these brief reflections suggest that domestic courts have an outstanding role to play in under-pinning a bottom-up process of constitutionalisation of global (environmental) law, especially in the context of bilateralised and mixed environmental regimes.[295] However, things seem to be somewhat more complex with regard to collective regimes, such as the climate change regime, as we shall see in the next sub-section.

4.4.2 Human Rights and Climate Change[296]

In the following we will address the question of whether - and if so, to what extent - human rights as recognised under widely ratified treaties, such as the 1966 International Covenants on Civil and Political Rights (hereinafter ICCPR), and on Economic, Social and Cultural Rights (ICESCR), may offer a suitable complementary legal basis for international cooperation in the context of mitigation and adaptation measures under the climate change regime. While it is generally recognised that human rights have the potential of providing a sound moral and philosophical basis for mitigation and adaptation measures that would increase their social acceptance, a major obstacle for a prominent human rights approach under the climate change regime seems to lie in a divergent rationale in both branches of international law. One of the most significant differences between both types of regimes lies in the deeply dissimilar design of what might be considered to be their primary rules, namely, the international obligations undertaken by states in the field of the protection of human rights - either on the basis of treaties, or of customary law - and in those other obligations undertaken through the UNFCCC and its Kyoto Protocol.

Primary rules in the field of international human rights law deal essentially with the preservation of a sphere of human dignity of individuals *vis-à-vis* specific state acts. They imply the assumption of international obligations by the state not to

[293] Art. 18(2).

[294] Savaresi (n 291), 72.

[295] Supra n 188.

[296] This part of the report is based on A. Cardesa-Salzmann, 'Reflections on the Suitability of a Human Rights Approach in the Context of the Climate Change Regime' in R. Giles-Carnero (ed), *Cambio climático, energía y Derecho internacional: perspectivas de futuro* (Thompson-Aranzadi 2012) 169.

interfere through its acts with the enjoyment of specific human rights by individuals within its territorial boundaries or elsewhere under its jurisdiction or control.[297]

Ideally then, the enforcement of human rights standards takes place in the internal order before national judiciaries. However, complementary thereto, judicial or quasi-judicial enforcement mechanisms have been set up in regional and global human rights treaties, providing some sort of standing to individuals. Moreover, states may exert diplomatic protection of their nationals in cases of human rights violations. Even if highly controversial, the well-known *obiter dictum* of the International Court of Justice in the *Barcelona Traction* case, declaring that obligations undertaken by states in the field of the protection of the human rights are of an *erga omnes* character,[298] would also seem to open up the possibility for the invocation of state responsibility for human rights violations by states other than that of the nationality of victims,[299] even if the Court showed itself reluctant in this regard.[300]

In contrast, primary rules in the climate change regime deal with the mitigation of and adaptation to, the consequences of global warming,[301] with the objective of achieving the stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.[302] This objective has to be achieved through collective action, base on the principles of 'precaution' and of CBDRP, among others.[303] The climate change regime sets up global standards, such as the quantified limitation or reduction commitments of anthropogenic emissions of greenhouse gases,[304] the implementation of which is incentivised through the so-called 'flexible mechanisms' under the Kyoto Protocol.[305]

The core of the treaty obligations in this regime is of a collective nature. As the problems addressed therein affect the global common themes and are considered to be a 'common concern of humankind'[306], the state parties have agreed to establish global standards that are binding for all, despite the differential treatment accorded them in view of their diverging degree of economic development. Parties to these regimes actually undertake obligations *erga omnes partes*, as all state

[297] B. Simma, *Das Reziprozitätselement im Zustandekommen völkerrechtlicher Verträge. Gedanken zu einem Bauprinzip der internationalen Rechtsbeziehungen* (Duncker & Humblot 1972), 194.

[298] *Case Concerning the Barcelona Traction, Light and Power Company, Limited (Belgium v Spain) Second Phase* [1970] ICJ Rep 3, 32 (para. 33).

[299] See generally J. A. Carrillo-Salcedo, *Soberanía de los Estados y derechos humanos en Derecho internacional contemporáneo* (2nd edn Tecnos 2001). With respect to the latter aspect, see also R. A. Alija-Fernández. 'Las quejas interestatales ante órganos judiciales o cuasi-judiciales de garantía de los derechos humanos: ¿Un mecanismo útil en situaciones de crisis?' (2011) 22 *Revista Electrónica de Estudios Internacionales* 1, 4-10.

[300] [1970] ICJ Rep 47 (para. 91).

[301] Art. 4 FCCC.

[302] Art. 2 FCCC.

[303] Art. 3 FCCC.

[304] Art. 3 Kyoto Protocol.

[305] Arts. 6, 12, and 17 Kyoto Protocol.

[306] FCCC, Preamble.

parties have an expressed or necessarily implied common legal interest in the maintenance and implementation of the international regime.[307] Its enforcement is provided for through an endogenous, non-adversarial compliance mechanism, rather than through an adjudicative dispute settlement.[308] However, despite being highly innovative in many regards, the climate change regime is fairly traditional, at least to the extent that it has been designed as a pure inter-state regime.

Therefore, one may agree with Stephen Humphreys in that both types of regimes remain fundamentally dissimilar. In the conclusion to his recently edited book, he compares the climate change regime to the human rights regimes, to state that

> [o]ne is a regime of flexibility, compromise, soft principles and differential treatment; the other of judiciaries, policing, formal equality and universal truths. Faced with injustice, one regime tends to negotiation, the other to prosecution. But neither on its own seems quite up to the challenge presented by climate change. […]
> It may be that the justice claims generated by climate change are simply too large and unsettling to be effectively treated by either regime alone. Or perhaps there is scope for learning to combine the strengths of each … with a view to forging an increased capacity for justice in an interdependent world.[309]

How may then these two branches of international law be brought together? One possible way would be to sue states not engaging in, or not complying with, obligations under the climate change regime before international human rights courts or treaty bodies, for the allegedly deleterious effects of their conduct on the enjoyment of human rights by individuals. Think for instance of the petition filed by the Inuit against the US before the Inter-American Commission of Human Rights.[310] However, these judicial avenues may prove of little help in providing redress for victims. In particular, the determination of jurisdiction, the standing, the direct or indirect injury, and above all, the causal link between acts of state and injury may be extremely difficult, if not altogether impossible[311] On the other hand, national courts do have a significant role to play in holding authorities to account and enforcing the states' international obligations stemming from human rights treaties and/or the climate change regime.[312] Admittedly, the argument of the limited effectiveness of the judicial avenue in order to obtain redress by individual victims may also be made here. Accordingly, authors like Eric Posner, consider human rights litigation in the context of climate change only as second best to international cooperation in this field.[313] Nonetheless, human rights-based climate

[307] Supra n 218.

[308] Art. 18 Kyoto Protocol.

[309] S. Humphreys, 'Conceiving Justice: Articulating Common Causes in Distinct Regimes' in S. Humphreys (ed), *Human Rights and Climate Change* (CUP 2010), 316-7.

[310] Petition to the Inter-American Commission on Human Rights seeking relief from violations resulting from global warming caused by acts and omissions of the United States, submitted by Sheila Watt-Cloutier, with the support of the Inuit Circumpolar Conference, on behalf of all Inuit of the Arctic regions of the United States and Canada (7 December 2005). Available at < http://inuitcircumpolar.com/files/uploads/icc-files/FINALPetitionICC.pdf> (accessed: 15 February 2012).

[311] See generally C. Schall. 'Public Interest Litigation Concerning Environmental Matters before Human Rights Courts: A Promising Future Concept?' (2008) 20 *JEL* 417.

[312] Generally, on the role of national courts in the enforcement of international law, see A. Nollkaemper, *National Courts and the International Rule of Law* (OUP 2011).

[313] E. A. Posner. 'Climate Change and International Human Rights Litigation: A Critical Appraisal'

litigation should not be completely dismissed. As Lavanya Rajamani has recently pointed out, whatever the outcome of national or international climate litigation may be, cases like *Massachusetts v. EPA*[314] before the US Supreme Court, or the Inuit petition before the Inter-American Commission of Human Rights - just to highlight two of the most prominent cases - clearly demonstrate that resorting to national or international courts does raise public awareness and builds indirect pressure for policy and legislative action.[315] Although the sceptical views on the immediate effectiveness of climate change litigation to hold public authorities accountable are indeed well-founded, such litigation may be of strategic importance in view of an eventual process of global constitutionalisation of environmental governance.[316]

Whatever the outcome of national or international climate litigation may be, resorting to national or international courts does raise public awareness and builds indirect pressure for policy and legislative action

However, as Rajamani also suggests, a much more promising and ambitious approach seems to lie in addressing the impacts of climate change, more broadly from a human rights optic. In this way, internationally recognised human rights, such as the right to life,[317] liberty and security,[318] the right to an adequate standard of living, including adequate food and housing,[319] or the right to health,[320] impose obligations for states that are parties to the 1966 International Covenants and the climate change treaties "to approach the climate change problem not just as a global environmental problem, but also as a human rights concern"[321], particularly when they adopt and implement their national climate change policies.[322]

Yet, the standards and benchmarks that derive from the aforementioned human rights give rise to an international obligation to integrate human rights concerns into policy planning not only at the internal - i.e. national - level, but arguably also at the international level. At least with respect to the rights recognised under the ICESCR, which states that parties undertake "to take steps, individually *and through international assistance and co-operation*, especially economic and technical, to the maximum of its available resources, with a view to progressively achieving progressively the full realisation of the rights recognized"[323]. The Committee of Economic, Social and Cultural Rights interpreted this provision in the sense that

> in accordance with Articles 55 and 56 of the Charter of the United Nations, with well-established principles of international law, and with the provisions of the Covenant

(2007) 155(6) *University of Pennsylvania Law Review* 1925.

[314] *Massachusetts v. EPA*, 549 U.S. 497 (2007).

[315] See L. Rajamani. 'The Increasing Currency and Relevance of Rights-Based Perspectives in the International Negotiations on Climate Change' (2010) 22 *JEL* 391, 417-8.

[316] Supra n 188.

[317] Art. 6 International Covenant on Civil and Political Rights (hereinafter ICCPR).

[318] Art. 9 ICCPR.

[319] Art. 11 International Covenant on Economic, Social and Cultural Rights (ICESCR).

[320] Art. 12 ICESCR.

[321] Rajamani (n 217), 412. See also M. Wewerinke and F. J. Doebbler. 'Exploring the Legal Basis of a Human Rights Approach to Climate Change' (2011) 10 *Chinese JIL* 141.

[322] A similar approach seems to be taken by Alan Boyle, at n 175, 640-1.

[323] Art. 2.1 ICESCR. Emphasis added.

> itself, international co-operation for development and thus for the realisation of economic, social and cultural rights is an obligation of all states. It is particularly incumbent upon those states which are in a position to assist others in this regard.[324]

Hence, the scope of the obligation to take steps towards the progressive realisation of the rights recognised in the ICESCR is not limited to the internal jurisdiction of each state party, but extends beyond state boundaries, imposing a responsibility upon developed states to assist developing states in their efforts to meet the Covenant's objective. Therefore, the point can be made that Article 2 (1) ICESCR, read in combination with other relevant provisions recognising substantive rights (such as Articles 11 and 12 ICESCR), seem to provide a suitable legal basis for such a human rights approach in the climate change regime, if taken as a "relevant rule of international law applicable in the relations between the parties"[325] necessary for consistent interpretation of the relevant provisions of the UNFCCC and its Kyoto Protocol. In this way, internationally recognised human rights standards might very well be used as hermeneutical tools able to qualify in a significant way the content of the obligations that developed and developing states have undertaken in the framework of the climate change regime.

From the perspective of moral and political philosophy, Simon Caney considers that such an approach would offer a much needed theoretical counter-balance to cost-benefit and security-based analyses that presently underlie mitigation and adaptation policies.[326] In this sense, integrating a human rights approach into the climate change regime would require a fundamental reassessment and reconception of the costs involved in mitigation and adaptation, by admitting in the very first place that some costs are incommensurable. In particular, it would imply recognising that climate change itself, as well as the mitigation and adaptation measures adopted in response, do have consequences for the enjoyment of human rights that should not and will not be accepted below a given level.

Translating these theoretical reflections into the legal domain, the integration of human rights into the climate change regime would not only broaden the basis for states' mitigation and adaptation duties: it would also provide one for duties of compensation if they fail to take all necessary measures.[327] This would imply that human rights considerations guide not only the evaluation of the impact of climate change, but also the distribution of the duties to uphold the human rights threatened by climate change, thereby substantially broadening the moral and legal basis for claims of distributive, procedural and corrective justice to be addressed within the climate change regime.[328] From this perspective, taken seriously into consideration as thresholds, the aforementioned human rights would

[324] General Comment 3. The nature of states parties obligations (Art. 2, para. 1), 14 December 1990, para. 14. UN Doc. E/1991/23.

[325] Art. 31.3, c) Vienna Convention on the Law of the Treaties (VCLT).

[326] S. Caney, 'Climate Change, Human Rights and Moral Thresholds' in S. Humphreys (ed), *Human Rights and Climate Change* (CUP 2010) 69.

[327] Idem., 86.

[328] Ibid.

provide valuable hermeneutical tools able to re-interpret some of the key principles, upon which the climate change regime is based, namely, the precautionary principle and the principle of CBDRP, as set out in Article 3 UNFCCC.

With respect to the precautionary principle, human rights - especially the rights to adequate food and to the highest attainable standard of physical and mental health - may provide quite useful operational criteria for its application.[329] On the one hand, the actual or foreseeable situation of the enjoyment of these rights may very well contribute to appreciate the existence of "threats of serious or irreversible damage" to vulnerable peoples and communities that would require precautionary action by the states under the climate change regime. On the other hand, human rights would also have to be considered as part of the "different socio-economic contexts" that states parties and the climate change regime's treaty bodies have to take into account in the design and implementation of precautionary measures.

Moreover, human rights considerations are prone to reshaping the interpretation of the CBDRP,[330] a principle that already channels claims of fairness and equity in international climate change law.[331] For instance, it might require taking seriously into consideration Henry Shue's distinction between subsistence and luxury emissions[332] or, as Rajamani puts it, between trivial and non-trivial climate endangering activities, in the negotiation of future burden sharing agreements between the states.[333] Moreover, as Philippe Cullet has suggested, it might also require giving a central role to the criterion of vulnerability - foremost of peoples and communities - in the operation of the CBDRP, in order to complement the hitherto dominant environmental and economic considerations, and properly integrate human rights aspects into the formulation and implementation of the mitigation and adaptation measures, including the flexible mechanisms.[334]

Nevertheless, a human rights approach not only contributes to re-interpreting the principle CBDRP within the strict realm of the climate change regime, but may project its effectiveness beyond. Namely, it may contribute to clarify the relationship and enhance synergies between the implementation measures of the climate change regime - which is generally perceived by Southern countries as the convention of the rich - and implementation measures of directly related conventions, such as for example, the United Nations Convention to Combat Desertification (UNCCD). As Bo Kjellén recalls, the original reason why desertification became an issue in the Rio process, and the UNCCD was

[329] Rajamani (n 217).

[330] Art. 3, paras. 1 and 2 FCCC.

[331] Brunnée (n 243), 324-8. See more generally F. Soltau, *Fairness in International Climate Change Law and Policy* (CUP 2009) 289. Rajamani (n 217) *supra*.

[332] H. Shue. 'Subsistence Emissions and Luxury Emissions' (1993) 15 *Policy and Law* 39.

[333] Rajamani (n 217).

[334] P. Cullet, 'The Kyoto Protocol and Vulnerability: Human Rights and Equity Dimensions' in S. Humphreys (ed), *Human Rights and Climate Change* (CUP 2010) 183.

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ultimately negotiated and adopted, was “the sense of exclusion by a number of poor countries, suffering from drought and desertification”[335].

Based on a very delicate compromise reached in the preliminary stages of the 1992 Rio Summit between developing states themselves on the one hand, and developing and developed states, on the other hand,[336] this latter treaty gives rise to an international regime for the protection of a component of the global ecosystem (the soil) which is a natural resource under the jurisdiction of states. Adopting a strictly legal perspective, the UNCCD builds upon obligations stemming from general international law - such as the preventative or ‘do no harm’ principle[337] - by setting up a global framework of inter-state and transnational cooperation to address the causes leading to aridification and desertification, by promoting the sustainable use of land.[338] In so doing, the UNCCD relies significantly on the differential treatment of developed and developing states,[339] on the basis of the general acknowledgement that there is a “high concentration of developing countries, notably the least developed countries, among those experiencing serious drought and/or desertification”.[340] Accordingly, countries affected by drought or desertification on the one hand, and developed countries on the other, each undertake different sets of obligations: whereas the former undertake to give due priority to the issue and to adopt measures to prevent and mitigate desertification to the extent of their available resources,[341] developed states - either individually or jointly - undertake, for their part, to support those efforts by providing financial and technological means.[342] The intertwined nature of these commitments is made particularly evident in Article 20 UNCCD, one of the convention’s central provisions concerning financial resources, in which it is stated that:

> [t]he full implementation by affected developing country Parties (...) of their obligations under the Convention will be greatly assisted by the fulfilment by developed country Parties of their obligations under the Convention, including in particular those regarding financial resources and transfer of technology. In fulfilling their obligations, developed country Parties should take fully into account that economic and social development and poverty eradication are the first priorities of affected developing country Parties, (...).[343]

This mechanism also has the potential to operate so as to further ‘environmental justice’ through the correction of some consequences of ecological debt and ecologically unequal exchange.

[335] See B. Kjellén, 'Justice in Global Environmental Negotiations: the Case of Desertification' in J. Ebbesson and P. Okowa (eds), *Environmental Law and Justice in Context* (CUP 2009) 333, 346.

[336] Ibid., 337-9. See also A. Konate. 'L’Afrique et la Convention des Nations Unies sur la lutte contre la désertification' (2000) 12 *African Journal of International and Comparative Law* 718, 730-1.

[337] UNCCD, Preamble, para. 15.

[338] Art. 4.

[339] See Rajamani (n 217).

[340] Preamble, para. 5.

[341] Art. 5.

[342] Art. 6.

[343] Art. 20 (7).

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5 Governing a global community

The necessary transformation of international law into a constitutional order to address unequal exchange

by Jordi Jaria i Manzano

5.1 The starting point: a system of nation-states, global social metabolism, and unequal exchange

Ecological debt can refer to different concepts[344] and generally consists of a metaphorical rather than defining expression.[345] This by no means implies the denial of its practical effects, but underlines that focusing too narrowly on concrete compensation can be misleading, especially with regard to the current global crisis of social metabolism. In the current international order some compensatory measures are conceivable to mitigate the effects of unequal exchange of resources,[346] which includes the plundering of natural resources from the peripheral countries,[347] the disproportionate occupation of the oceans and the

[344] In this sense, see E. Paredis and others (n 5), 43ff.

[345] See N. Hemley, 'Ecological Debt: An Inquiry for Clarification of the Concept' Centre for Human Ecology - University of Edinburgh (Edinburgh 2005), 70.

[346] On the idea of ecologically unequal exchange, see A. Hornborg. 'Zero-Sum World Challenges in Conceptualizing Environmental Load Displacement and Ecologically Unequal Exchange in the World-System' (2009) 50 *International Journal of Comparative Sociology* 237, 245ff; and J. T. Roberts and B. C. Parks. 'Ecologically Unequal Exchange, Ecological Debt, and Climate Justice. The History and Implications of Three Related Ideas for a New Social Movement' (2009) 50 *International Journal of Comparative Sociology* 385, 388ff.

[347] There are several examples of that plunder, often with violations of human rights. Land grabbing can be used as one of them. See a current case analysis in F. J. Zamora Cabot, "Acaparamiento de tierras (land grabbing) y empresas multinacionales: el caso Mubende-Neumann" (2013) 5 *Papeles 'El tiempo de los derechos'*.

To understand the international legal order underpinning the economic structure that allows unequal exchange, one should start from the historical connection between state and market

atmosphere by central countries,[348] and the appropriation of know-how of cultures located at the periphery, known as biopiracy.[349] However, in order to face up the problem in all its dimensions the restructuring of that order should move forward, starting from a realistic consideration of its operation, which, in a way, unveils the inequities and shortcomings of the current legal framework.

First, the role of the nation-state system must be analyzed, and the form it takes in both the international legal order and the capitalist world-system,[350] both of which fundamentally determine social metabolism[351] at a global level, and explain ecologically unequal exchange and the disproportionate use of common goods. To understand the international legal order that underpins the economic structure that allows unequal exchange of resources, one should start from the historical connection between state and market. This approach allows an understanding of the role of Law as a cultural product in the organisation of social metabolism and the legitimacy of social structures that determine it.[352] The state is the institutional structure which allows the deployment of the capitalist accumulation process, facilitating exchange conditions through the establishment of homogeneous rules and coactive institutions which guarantee commercial exchange in the context of an emerging domestic market.[353]

Due to geopolitical and technological conditioning, the state appears as the appropriate framework for the articulation of the market as an exchange space. We cross from emerging national markets into colonial empires, which determine a larger space for capitalist accumulation and are presented as the institutional structure for unequal exchange.[354] In both phases of the process the nation-state (in the second phase through its imperial extension) operates as an institutional

[348] See an early calculation of debt in this domain in C. Azar and J. Holmberg. 'Defining the Generational Debt' (1995) 14(1) Ecological Economics ;J. Martínez-Alier. 'Ecological Debt and Property Rights on Carbon Sinks and Reservoirs' (2002) 13(1) Capitalism Nature Socialism

[349] See D. F. Robinson, *Confronting Biopiracy. Challenges, Cases and International Debates* (Routledge 2010).

[350] To have a general view on the theory of world-systems, developed from the work of Immanuel Wallerstein, see C. A. Martínez-Vela. 'World System Theory' (Research Seminar in Engineering Systems MIT, Cambridge 2001) <http://web.mit.edu/esd.83/www/notebook/WorldSystem.pdf>.

[351] The idea of social metabolism can be traced to Marx, who starts using the biologic metaphor of metabolism to describe the exchanges between nature and society. Later, his idea was developed particularly in the area of ecologic economy and connected to the notion of unequal exchange and, specifically, ecologically unequal exchange. See H. Weisz, 'Combining Social Metabolism and Input-Output Analysis to Account for Ecologically Unequal Trade' in A. Hornborg, J. McNeill and J. Martínez-Alier (eds), *Rethinking Environmental History: World-System History and Global Environmental Change* (AltaMira 2007) 289. See also M. Fischer-Kowalski. 'Society's Metabolism: The Intellectual History of Materials Flow Analysis, Part I, 1860-1970' (1998) 2 *Journal of Industrial Ecology* 61;M. Fischer-Kowalski and W. Hüttler. 'Society's Metabolism: The Intellectual History of Materials Flow Analysis, Part II, 1980-1998' (1998) *Journal of Industrial Ecology* 107.

[352] The idea of law as a cultural phenomenon has not been very much considered among the jurists, probably too focused on the forensic side of the law. Nevertheless it has recently been developed by Peter Häberle. See for instance P. Häberle, 'Die Verfassung "im Kontext"' in D. Thürer, J. -F Aubert and J. P. Müller (eds), *Verfassungsrecht der Schweiz / Droit constitutionnel suisse* (Schulthess 2001), 18.

[353] J. Jaria i Manzano, La cuestión ambiental y la transformación de lo público (Tirant lo Blanch 2011), 92ff.

[354] This would be a classic thesis, already defended by Hobson in 1902. See . J. A. Hobson, *Imperialism. A Study* (Spokesman 2011).

and legal framework. However, in a third phase after a process of so-called 'decolonisation', the state gradually stops being the reference point of a capitalist accumulation space, projecting itself as a world-system, globally, under the aegis of the United States.[355] This apparently causes the loss of harmony between political structure (the division of global political space in many dozens of nation-states) and economic structure (global market). This discrepancy allows on the one hand, the development of informal and opaque structures of power, which accelerate the process of capitalist accumulation based on the unequal exchange of resources, and on the other hand, the maintenance of domination structures through a legal curtain based on the Westphalian paradigm of equality of sovereign states, which can hardly hide imbalances and inequalities of the system, that, deep down, become an imperial constellation of states around the centre of the capitalist accumulation process.[356]

This way, the nation-state becomes the framework for the net-like structure of power in which the global market unfolds.[357] The interstate system is the essential piece of the economic infrastructure which allows the existence of physical supports for deployment of the global networks, as well as ensuring goods, services and capital exchange, both from the legal point of view (guaranteeing the reliability of transactions through the rules and corresponding judicial structures) and the strictly physical point of view (via police and military organisations which defend the global structures of domination, as well as the infrastructures that allow the circulation of the material, the movement of which is at the origin of ecologically unequal exchange).[358]

In this context, the nation-state system becomes an imperial structure, out of which arise extremely unequal relationships between the various members of the club, which are supposedly each equal sovereign political subjects attending the international scene.[359] So, some states occupy the centre and ensure space for deployment, under more or less safe conditions, in the life model of system winners. Others meanwhile are located at the periphery, becoming simple partial structures of domination, aimed at the social control of the system losers and at the assurance of the flow of resources towards the centre.[360]

[355] An overview, from the historic point of view, of such process in J. Fontana, *Por el bien del imperio. Una historia del mundo desde 1945* (Pasado & Presente 2011).

[356] P. Evans, '¿El eclipse del Estado? Reflexiones sobre la estatalidad en la época de la globalización' in M. Carbonell and R. Vázquez (eds), *Globalización y Derecho* (Ministerio de Justicia y Derechos Humanos 2009) 39, 43.

[357] Despite the argument in relation to overcoming it that seems to go hand in hand with the ideology of the so called Washington Consensus, in the context of the process of integration of markets, the state does not retreat, but changes its functions and fundamentally takes an instrumental role in relation to the global market, which surely should not be emphasized, in order to maintain strategies to legitimise the *statu quo*. On the Washington Consensus, see J. Williamson. 'A Short History of the Washington Consensus' (From the Washington Consensus towards a new Global Governance 2004 2004) <http://www.iie.com/publications/papers/williamson0904-2.pdf>.

[358] On the dependence of the contemporary phase of the capitalist accumulation system in relation to the state, see G. Burdeau, *L'État* (Points 1970), 185ff.

[359] See A. Epiney, 'Beziehungen zum Ausland' in D. Thürer, J. -F Aubert and J. P. Müller (eds), *Verfassungsrecht der Schweiz / Droit constitutionnel suisse* (Schulthess 2001) 871, 872.

[360] On the idea of centre and periphery in the functioning of the capitalist world-system, see P. J. Taylor

Fig. 8

United Nations Cocoa Conference Opens 1966 Session

Discussing a document are Raul Prebisch (left), Secretary-General of the UN Conference on Trade and Development (UNCTAD), and Jean-Baptiste Beieoken of the Federal Republic of Cameroon.

23 May 1966

United Nations, New York

Photo credit: UN Photo/Teddy Chen

Consequently, the international order can hardly be anything but a legitimising cover for a social global metabolism based on unequal exchange of resources. From within this framework the idea of ecological debt has been formulated by activists as a calculation of the differential in favour of the periphery in the accounting of the terms of exchange, due to the plundering of natural resources and traditional know-how, and use of the share of commons corresponding to peripheral countries.[361] In this context, the international order corresponds to a system of nation-states which ensures the functioning of the global economy and, consequently, unequal exchange. It is clear that there is no market without a legal system, without some institutional apparatus to ensure the secure flow of goods and services within a particular regulatory scheme,[362] but that does not diminish the vulnerability of the state at the moment of trying to pursue its own domestic agenda in the face of the impositions of structures of global power and exchange,

and C. Flint, *Geografía política. Economía-mundo, estado-nación y localidad* (Trama 2002), 21ff. This idea was developed in the context of the Economic Commission for Latin America (ECLA) by economists such as the Argentinian Raúl Prebisch, who published the work "Crecimiento, desequilibrio y disparidades: interpretación del proceso de desarrollo económico" in 1949, within the *Estudio económico de América Latina*, edited by the aforementioned organisation. This pattern of interpretation of global exchange of resources is consolidating thereafter with new contributions that emphasize the structural nature of the distinction between centre and periphery. See S. Conti, *Geografia economica. Teorie e metodi* (UTET 1996), 129ff.

[361] In this way, the Southern Peoples Ecological Debt Creditors Alliance defines ecological debt as: "… essentially the responsibility of the Northern industrialised countries, its institutions, the economic elite and their corporations for the gradual appropriation and control of natural resources as well as the destruction of the planet caused by their consumption and production patterns, affecting local sustainability and the future of humanity. Based on this definition, Southern peoples are creditors of the debt and Northern peoples are the debtors. This debt is based on the current model of industrial production, full production of waste such as the emission of greenhouse gasses, capitalism and free market." Own translation from <http://www.deudaecologica.org/Que-es-Deuda-Ecologica/>.

[362] In relation to the link between the legal system and market, from the origin of the modern state, vid., for example, C. De Cabo, 'La función histórica del constitucionalismo y sus posibles transformaciones' in M. Carbonell (ed), *Teoría de la Constitución. Ensayos escogidos* (Porrúa 2005) 45, 46-7.

the vulnerability of which is becoming more dramatic as we move away from the centre of the system.[363]

In short, the global power structures which ensure the flow of resources and the movement of capital are partly opaque, and impose themselves on democratic decisions that emerge in the political and legal framework of the nation-state, which ends up playing a role of servitude in relation to them. This does not make that role less important in the global power network, but in this case, places it in a subordinate position and changes the basis of its legitimacy, farther and farther away from the democratic will of the citizenship. The nation-states, in the framework of the global market structure they serve, are in a subordinate position, both by the conditions imposed on them to access capital,[364] and by the need to take part in the global trade networks of production.[365]

In their current situation, the productive economy and the financial world determine the dependence and neediness of peripheral states

This subordination is particularly painful at the periphery, where the conditions for accessing credit markets are increasingly difficult Furthermore, the connection to the global market structures is based on the unequal exchange of resources and the appropriation of common goods such as the atmosphere and oceans (climate debt), so that the productive economy and the financial world in their current situation determine the dependence and neediness of these peripheral states.[366] In fact the international economic-legal structure, which is mostly built around the GATT and the WTO, is consubstantial to the financial dependency status and resource drain that these states are in.[367] Consequently, it seems that any formula of international law through which it is intended to compensate unequal exchange in its historical dimension - which is the main aim the notion of ecological debt itself pursues - seems to demand a review of such a model and the design of an alternative legal space.

[363] In this regard, the capacity of central states to intervene in the regulation of the world economy does not prevent the finding of the individual weakness of the majority, nor above all, the weakness of those who are located at the periphery. See J. Fulcher. 'Globalisation, the Nation-State and Global Society' (2000) 48 *The Sociological Review* 522, 530ff.

[364] In this context the legitimacy of the nation-state, particularly in the centre, goes from democratic legitimacy, rooted in the political community, according to the constitutional tradition towards the legitimacy of the client, which is, the capacity of the state to ensure the access to goods and services. However, this legitimacy depends on the access to credit markets, so that the state remains under global structures beyond its control. In this sense, (the difficulties of the states' access) to capitals determine internal political decisions, so that the democratic legitimacy of the decisions is severely eroded. A clear sign of this is, in the case of Spain, the recent Organic Law 2/2012, of the 27th of April, on Budgetary Stability and Financial Sustainability (Official Gazette of the 30th of April 2012), and, particularly its article 14, which prioritises serving the debt within the whole public expense. Thus, the markets influence public policies through pressure instruments different from democratic vote — the currency price fixing, access to capital—, highlighting a new grammar of power different from that which is formally held— the democratic foundation of power—, based on money availability, the abstract form of capital. See P. Evans (n 356) 46.

[365] Here we highlight technological and geopolitical elements which allow the global exchange system, with its inherent inequity. See A. Barreda. 'Geopolítica, recursos estratégicos y multinacionales' Pueblos Revista de información y debate (2005), and Evans (n 356), 44.

[366] See Conti (n 360), 173ff.

[367] This structure would condition the internal political dynamics of the states, manifesting as a real limit to their sovereignty, a supraconstitution, as defined by Clarkson and Wood. See S. Clarkson and S. Wood, *A Perilous Imbalance. The Globalization of Canadian Law and Governance* (UBC Press 2009), 161ff.

In this regard, when considering the possible legal enforceability of ecological debt, beyond the conceptual problems raised by its definition, it is clear that a profound modification of the system of international relations should be considered, to the extent that ecologically unequal exchange is inherent to it in its current form. In this sense it does not seem that appropriate strategies can be defined for the recognition and cancellation of ecological debt in the current system of international relations, as this system tends to generate conditions for the emergence of such debt. The system also makes the cancellation of such debt at a particular moment futile, because without a deep change in the global conditions of production and consumption, it would tend to be produced again. The fundamental problem here is the deep and historical interconnectedness between ecologically unequal exchange, the capitalist world-system and the current international order.

5.2 Challenges ahead: articulating ecological debt as a legal relationship, and addressing inequitable global power distribution

Paredis, Lambrecht, Goemine and Vanhove suggest a possible definition of ecological debt as a triple approach, the components of which are mutually accumulative. Thus, the ecological debt of a given state would consist of:

> 1. The ecological damage caused over time by that state in other states or areas under the jurisdiction of other states through its production and consumption patterns.
> 2. (and/or) The ecological damage caused over time by that state in ecosystems beyond its national jurisdiction through its production and consumption patterns.
> 3. (and/or) The exploitation or use over time of ecosystems and goods belonging to ecosystems by that state at the expense of the rights to those ecosystems of the states or individuals.[368]

The first definition suggests rather obviously an issue of compensation between states, whereas in the third definition suggests compensation between states is, or the identity of the creditor is not clear. From a legal point of view, two main issues arise *prima facie*, which are, first, determination of the unit to measure liability (that is the amount of favourable flow in relation to the social metabolism of that state) and its subsequent calculation,[369] and, secondly, determination of the creditor, which may not be clear in all the cases if we take this triple definition as a starting point. It should be noted however, that it is possible to have a clear idea of the debtor, namely, a particular nation-state, from the centre of the capitalist world-system, which on the whole has enjoyed (and enjoys) a favourable flow of material resources from outside, by unequal terms of exchange.

[368] Paredis and others (n 5), 50.

[369] The difficulty of converting material flow into money is obvious, although the reality of measuring ecological debt in monetary terms has been highlighted, as a way to make it understandable for audiences from the centre of the world economy. See, in this sense, J. Martínez-Alier, *The Environmentalism of the Poor. A Study of Ecological Conflicts and Valuation* (Edward Elgar 2003), 47ff.

In relation to deciding the debt content, one could try to monetarily evaluate the unaccounted externalities that lead to ecological liability, (notably gross import of material, free acquisition of ancestral knowledge, exports of emissions and wastes export[370]). This would allow one to overcome the first obstacle - that is, determination of the unit of measurement - but not the second - the calculation of the amount. Presumably this calculation should be determined through political negotiation with the corresponding scientific collaboration, including economists, biologists, engineers, etc. With a methodology for deciding ecological liability established, no major legal problems would be anticipated.

The definition of debtor in the obligation constituted by the ecological debt involves several problems

However, in relation to the definition of debtor in the obligation constituted by the ecological debt, deeper problems present themselves. Firstly, and from a formal point of view, it is true that states are subject to international law and, are apparently, the only ones in a position to assume international obligations. That implies from a practical point of view, that the taxpayers of a particular state should bear the costs of their historical ecological liability, without taking into consideration the sharing, probably unequal, in relation to the enjoyment of this liability in the past. In this way, the citizens of the central states would ultimately answer for the unfair enrichment of those states - the ecological debt in legal terms -[371] of which they have not necessarily been beneficiaries. The question here is then whether it is fair that states and not companies are the debtors in such a case?[372]

On the other hand, there are equally relevant issues with regard to the definition of the creditors. Accepting that there is (and there has been) an unequal exchange of resources between the centre and the periphery of the capitalist world-system does not mean accepting that unequal exchange has occurred between states beyond a formal or statistical point of view.[373] This is important because any possible compensation for the ecological debt paid to periphery states does not necessarily imply a real compensation to those affected by the unequal exchange.

It should be noted that, in many cases the periphery states, rather than possessing democratic and representative institutional systems to guarantee (if this were possible) an adequate sharing of the capital obtained through the payment of the ecological debt, function more or less as structures of domination, complicit in the ecological decapitalisation of their respective territories, and focused on attracting investment in exchange for allowing access to resources. [374] This does not exactly make them ideal candidates for receiving compensation for

[370] An overview on that in ibid.

[371] In relation to unfair enrichment and its status as the basis for extracontractual responsibility, see J. M. Bustos-Lago and F. Peña-López. 'Enriquecimiento injusto y responsabilidad civil extracontractual' (1997) 1 *Anuario de la Facultad de Derecho de la Universidad de A Coruña* 141.

[372] Paredis and others (n 5), 59-60.

[373] In this regard, the creditor may be the planet itself, as shown by Acción Ecológica. In Acción Ecológica. 'No More Plunder, They Owe Us the Ecological Debt!' (1999) 78 *Green Alert*.

[374] J. Jaria i Manzano. 'Democracias fragmentadas, control del poder y principio de responsabilidad. Un nuevo constitucionalismo en la era del mercado global' (2012) 60 *Estudios de Deusto* 303, 309-10.

the ecological debt, as in fact, in many cases they would have behaved as adjuncts to the generation of ecologic liability.

Conversely, compensation to peripheral states for the historical ecological debt does not guarantee that the unequal exchange of resources is not going to take place in the future, and without systemic change, the compensation of ecological debt would not prevent its further accumulation. This is important because, contrary to what happens with financial debt, (which has become normalised) ecological debt is based on the consumption of non-renewable resources - the use of vulnerable and limited resources - so its indefinite projection in time cannot be permitted. Furthermore, unlike regular financial debt, ecological debt is the result of responsibility owing to unfair enrichment, so it could not be considered a 'normal' financing method - through drainage of resources from the periphery - for the economies of the centre of the capitalist world-system.

This leads us to three provisional conclusions. First, the payment of ecological debt between states does not guarantee the adequate compensation of those harmed by unequal exchange of resources and the irrational exploitation of natural resources, for example, future generations, including the ones from the central states. [375] Second, the consideration of ecological debt as a legal relationship arising between states does not allow an adequate definition of responsibilities, to the extent that creditors and debtors determined as such are not necessarily the subjects who profited or were harmed by the effective cause of the debt, which includes the unfair appropriation of natural resources and traditional knowledge from peripheral countries. Finally, it is worth mentioning that the cancellation of ecological debt in these terms does not guarantee in any way conditions of future use of natural resources in sustainable and equitable conditions. This is why EJOs who decide to represent the 'creditors' of the ecological debt often state that their main goal is to prevent the further growth of the ecological debt, more than being repaid.

Even though compensation for ecological debt leads to a decapitalisation of the economy from the centre of the system, reducing its capacity to assimilate resources and export waste, it does not imply a loss in the capacity of the system as a whole for aggression towards ecosystems. Nor does it guarantee in any way that the global ecological liability will not continue to increase. This is mainly due to issues with determining the identity of candidates for compensation, and because of how the legal and economic structures that allow the plundering of natural resources are maintained, harming future generations (in anthropocentric terms) and to non-human realities (in ecocentric terms).

One could imagine a possible international authority that would receive funds assigned to the payment of the ecological debt, investing them in a way that would contribute to the compensation of the present creditors, or by placing funds in trust for compensation of future creditors. Nevertheless, such an authority would only seem to be possible in an international constitutional framework that, by its nature,

[375] As for future generations as ecological debt creditors, see Paredis and others (n 5), 58.

would imply an overcoming of the current exchange relations and current legal structures. Even in this case, the ecological debt would appear as a tool in the design of a more equitable system, rather than as a definitive intrasystemic compensation. Ecological debt as a tool would define the inequities to overcome them rather than compensate them - although the latter, of course, cannot be excluded, as long as both the object and the subjects of the legal relationship are appropriately defined.

Ecological debt would be a pathway for pursuing a more equitable system, rather than a definitive intrasystemic compensation

The idea of ecological debt serves to underline the inequitable and unsustainable consequences of the social metabolism of the capitalist world-system. Its recognition could serve as a moral compensation for people affected, however, it may not be an adequate conceptual matrix for moving towards a more balanced and less predatory global social metabolism. Consequently, its virtuality as a transforming tool could be limited to introducing elements of distributive and compensatory justice into the system. This is because the cancellation of the debt in present time will not on its own prevent the generation of more debt and for this reason do not solve the problem of consumption of non-renewable resources, making the situation progressively closer to a collapse of the system and exhaustion of the means of payment.

5.3 Limited resources, ecological debt and global social metabolism

Effectively, ecological debt, which uses a terminology characteristic of hegemonic languages, is presented as a response from the periphery to the unequal exchange of resources and the unfair appropriation of environmental space.[376] However, its formulation in terms of debt seems to imply that there is an unlimited amount of resources available to service its reduction and cancellation. Yet this seems not to be the case. The payment of ecological debt, under certain conditions, might momentarily decrease the capacity of the economic system to assimilate resources and the produce waste, consequently reducing environmental externalities as well. Nevertheless, ecological debt itself is insufficient to construct global conditions of exchange which may be fairer from a human point of view and less burdensome for nature.

Given the scarcity and vulnerability of natural resources that feed the global metabolism, not only the elimination of unequal exchange needs be considered, but pressure on resources needs to be reduced as well. This means compensating for past misuse (confronting the economic difficulty of accounting the amount owed, and the legal difficulty of defining the subject of the obligation) and avoiding future misuse. The implication is that ecological debt must be redirected towards a metaphoric use, forming a conceptual starting point that reveals the (internal) inequities of the system and its (external) unsustainability,

[376] Responds to the idea, in short, that “the language of chrematistics is well understood in the North.” In J. Martínez-Alier. 'The Ecological Debt' (2002) 4 *Kurswechsel* 5, 11.

and defining responsibilities in order to fund the measures of correction and mitigation required.

The inequitable and predatory character of the social metabolism of the capitalist world-system is related to implicit ideas about monetary accounting for natural resources. This allows resources to be treated in similar terms, as if they have a permanent capacity for growth by generating gains and benefits and through substitutability[377] This concept obviously does not correspond to the vulnerable and limited character of natural resources, which makes it difficult to redirect their (inequitable) use towards a private legal obligation with a corresponding creditor, debtor, and amount owed, through the idea of extracontractual responsibility derived from unfair enrichment.

To reconstruct the social metabolism in more equitable terms there must be progress not only in the internalisation of costs, but also, above all, in the setting of absolute limits in relation to the exploitation of natural resources. A key first step is the denial of total interchangeability, and subjecting individual rights to conditions consistent with the limited and vulnerable character of the resources that have to satisfy them.[378] This implies a profound cultural change, which can be powered through the generation of international structures, which from a constitutional standard, favours the construction of a global social filter regarding technological development and exploitation of natural resources.[379]

In this context, the expression of ecological debt would be interesting, not as an amount payable to some difficult to define creditors, but rather as an expression of a profoundly unfair situation that must be overcome in terms of a new global governance system, which promotes more equitable living conditions for humans, regardless of where they live, and a less aggressive social attitude regarding the environment. In short, at this point, it seems more interesting to move towards a constitutionalisation of the responsibilities of a global, human community, rather than an accounting and payment of ecological debt.

The inequitable and predatory character of the social metabolism of the capitalist world-system is related to implicit ideas about monetary accounting for natural resources

Such a move would be instrumental in moving society toward a phase of greater sustainability, institutionally built on the idea of international constitutionalism, overcoming the current system of international relations. Here ecological debt would serve to define the origins of the inequitable situation and establish partial compensation mechanisms in the context of a new international order.

[377] J. M. Serrano-Moreno, *Ecología y Derecho: principios de Derecho Ambiental y Ecología jurídica* (Comares 1992), 87ff.

[378] The idea of responsibility as a framework for a realistic and measured redefinition of rights has been spreading in recent constitutional tradition, as shown by the Polish Constitution of 1997, the Swiss of 1999 or the French Charter on the environment of 2005. In relation to the idea of responsibility and ethical implications in defining the social metabolism. See H. Jonas, *El principio de responsabilidad. Ensayo de una ética para la civilización tecnológica* (Herder 1995), 32ff. In the case of the Swiss Constitution of 1999, it is particularly noteworthy the mention of both the *Verantwortung gegenüber der Schöpfung* and the *Verantwortung gegenüber den künftigen Generationen*. See R. Rhinow, 'Wirtschafts- und Eigentumsverfassung' in D. Thürer, J. -F Aubert and J. P. Müller (eds), *Verfassungsrecht der Schweiz / Droit constitutionnel suisse* (Schulthess 2001) 565, 569.

[379] C. Calliess, *Rechtstaat und Umweltstaat* (Mohr Siebeck 2001), 65.

Instruments traditionally used in the framework of the European social state in relation to the transfer of resources to palliate internal inequities of the system,[380] could be an inspiration for this new constitutionalism.

If we want a real cancellation of ecological debt - that is to say, a cancellation of its conditions of possibility - international actors, including southern states, must move in this direction. To make this possible, social organisations would need to lobby in favour of extending and securing international human rights, in a realistic and pragmatic framework in relation to the exploitation of natural resources. Ecological debt could function as a driving force for the defence of such a governing framework, appearing as a comprehensive expression of the situation of extreme injustice that makes a global social contract necessary rather than an effective legal relationship between debtors and creditors.

5.4 Justice as a core for a global constitutionalism: an institutional alternative to inequality

Given the internationalisation of problems, the interdependence of states, the introduction of new actors beyond states themselves and the relativisation of sovereignty, a new institutional framework for international law needs to be built.[381] In this regard, progress has been made in recent times in the constitutionalisation of international Law, at least in theoretical terms.[382]

If we combine the limited and vulnerable nature of available resources with the idea of global citizenship, defined by equal conditions of access to the benefits of social metabolism and equal ecological charges, environmental justice can be the framework for defining the basis of global constitutionalism.[383] In this sense, environmental justice could be defined in terms of equitable access to natural resources and environmental services derived by ecosystems and a fair distribution of the burden from their uses.[384] The ecological debt would in this context be the expression of a historical environmental injustice both territorially, through the unequal exchange of resources between the periphery and the centre of the world economy, and temporally, through the overuse of available resources to the detriment of future generations.

Thus, the calculation of the ecological debt would serve the purpose of resolving historical injustices, for example by financing policies of mitigation and adaptation to climate change. Accordingly, it should not be defined in terms of a relationship between creditors and debtors, but in terms of the overuse of natural resources by the entire capitalist world-system, to determine sufficient funds to alleviate and put

[380] M. A. García-Herrera and G. Maestro-Buelga. 'Regulación constitucional y posibilidad del Estado social' (1988) 22 *Revista Vasca de Administración Pública* 87.

[381] Epiney (n 359), 872.

[382] On the value of constitutionalism as a fundamental element to the construction of a global governance, see L. J. Kotzé (n 183).

[383] J. Jaria i Manzano. 'Environmental Justice, Social Change and Pluralism' (2012) 1 *IUCN Academy of Environmental Law e-Journal* 18, 20ff.

[384] Jaria i Manzano (n 383), 17.

right both spatial and temporal situations of inequity, which should be financed by the states and companies in a position to do so.

The ultimate purpose of quantifying the debt would be to decide who is responsible for the financing of public policies necessary to redress the balance, as part of a concept of global community that ensures a minimum status to its members in a situation of limited availability of resources. In this way, within a constitutional framework of global governance, ecological debt would serve to assign responsibilities in the construction of an equitable situation, according to the general principle of responsibility[385] (which, in a restricted version, is taken on by the environmental law as the polluter pays principle) and its modification through the principle of CBDRP.[386]

The ultimate purpose of quantifying the debt would be to decide who is responsible for the financing of public policies necessary to redress the balance, as part of a concept of global community that ensures a minimum status to its members in a situation of limited availability of resources

The status of citizenship at a global level must be determined in terms of a broad spectrum environmental justice, defined according to the consideration of both the equal distribution of environmental damage and access to social benefits arising from the use of natural resources, that is, along lines of adequate participation in the social metabolism, or global exchange between society and nature. This basic status would be the determining factor for defining the content and the subject of ecological debt, which would become an instrument for redressing the balance, although, as has already been mentioned, could not guarantee the *pro futuro* balance. In whichever case it would play an instrumental role in relation to the creation of a more equitable situation for humans under the deployment of a global existential constitutionalism, which should be the guarantee for preventing the generation of new debt in the future.

The principle of precaution[387] should play a role of primary importance in defining limits for the use of natural resources and preventing new environmental injustices (inter and intra-generationally), and thus the generation of new ecological debt. In relation to this, the idea of responsibility should be taken as a factor of redefinition of the culture of rights in a context of environmental justice and limited and vulnerable resources.[388]

[385] See, in particular, M. Ronellenfitsch, *Selbstverantwortung und Deregulierung im Ordnungs- und Umweltrecht* (Duncker & Humblot 1995), 27.

[386] See for instance M. A. Elizalde Carranza. 'Desarrollo y cambio climático' (2010) 1 *Revista Catalana de Dret Ambiental* , 11-2.

[387] On the precautionary principle, among many others, see J. Benedickson, *Environmental Law* (Irwin Law 1997), 18ff; M. Cecchetti, *Principi costituzionali per la tutela dell'ambiente* (Giuffrè 2000), 169ff; N. De Sadeleer. 'Reflexiones sobre el estatuto jurídico del principio de precaución' (2000) 25 *Revista de Derecho Ambiental* 9; W. Erbguth, *Rechtssystematische Grundfragen des Umweltrechts* (Duncker & Humblot 1987), 92ff; A. Petitpierre-Sauvain, 'Fondements écologiques de l'ordre constitutionnel suisse' in D. Thürer, J. -F Aubert and J. P. Müller (eds), *Verfassungsrecht der Schweiz / Droit constitutionnel suisse* (Schulthess 2001) 579, 585-6.

[388] H. Rolston III. 'Rights and Responsibilities on the Home Planet' (1993) 18 *Yale Journal of International Law* 251, 252.

5.5 Redefining international legal culture: the role of non-hegemonic cultures

The definition of a minimum personal status in relation to the functioning of the global social metabolism is necessary for the deployment of a global governing strategy based on the constitutional paradigm, that is, considering the international community as a political community in which its members enjoy certain living conditions. For this, it would be particularly important to take into account intercultural dialogue, to reach a truly inclusive notion of the status of the members of the global community.[389]

However, to do so on the basis of taken for granted hegemonic cultural assumptions, would doubtlessly produce a fractured and exclusive global political community. Instead, other cultural heritages must be taken into account in order to define ecological debt, because it would be unfair and eurocentric to limit its definition to hegemonic forms of valuation, i.e. in the terms fixed by global markets. Moreover, non-hegemonic cultures and their implicit concerns with justice and pluralism in the formulation of global governance strategies, as they may offer appropriate approaches to redressing the current state of predation of society over nature.

This implies the overcoming of Wesphalian system of international relations, based on states, allowing indigenous peoples, NGO's, local governments and other actors to participate en the processes of global governance. The determination of the foundations of global governance starting from an environmental justice model should take into account not only states, but also the numerous political and economic actors of the global social metabolism, in order to overcome the deadlock that traditional diplomacy faces when trying to discipline the so-called social metabolism, as the recent Conference of Rio+20 proved. In this context, non-hegemonic cultures and indigenous peoples in particular could make valuable contributions to the redirection of global social metabolism, towards sustainable, respectful and equitable parameters.[390] Consequently, a post Westphalian system of global governance should be designed, in which different cultural communities would articulate various regulatory spaces as a bid for intercultural dialogue.[391]

[389] See in relation to the intercultural dialogue in the generation of inclusive community spaces M. Mora, 'Las experiencias de la autonomía indígena zapatista frente al Estado neoliberal mexicano' in M. González, A. Burguete-Cal y Mayor and P. Ortiz-T. (eds), *La autonomía a debate. Autogobierno indígena y Estado plurinacional en América Latina* (FLACSO, GTZ, IWGIA, CIESAS, UNICH 2005) 291, 309.

[390] H. P. Glenn, *Legal Traditions of the World* (3rd edn OUP 2003), 73.

[391] J. Jaria i Manzano. 'Circles of Consensus: the Preservation of Cultural Diversity through Political Processes' (2012) 8 *Utrecht Law Review* 92.

6 Conclusions

The concepts of ecological and climate debt are driven from the bottom-up by social organisations and movements that often lack a significant presence in the institutional settings of international relations. These concepts are multi-functional, exposing the social and economic dynamics of the external debt in the South, providing a means of legitimising opposition to paying this debt based on its unjust nature, exposing the inequality of the North/South relationship from the point of view of access to natural resources and environmental services, and functioning as a way to demand compensation.

Although the claims around ecological or climate debt have not had a direct and express impact in the regulatory area of international environmental law as such, these claims have long been present in international decision-making forums, and are more or less directly connected with other theoretical and conceptual structures from specific academic ambits or activist action that have been influential on the international justice scene. These claims in fact mirror older ones made by developing countries about inequalities in international economic relations, as well as underlining others of ecologically unequal exchange in the form of massive exploitation of natural resources (including genetic resources) in the economic interests of foreign countries, and the disproportionally high access of industrialised countries to environmental services provided by global ecosystems. For this reason, ecological debt is intrinsically linked with studies about social metabolism analysis and concepts like unequal exchange, ecological footprint and environmental space. These studies underline the elements of unsustainability and disproportional access to natural resources, and to environmental services in the dominant economic model.

The externalisation of the environmental load in general allows industrialised states to maintain a high environmental quality within their own frontiers, while transferring any negative environmental consequences arising from their production processes and consumerism, such as deforestation, the loss of biodiversity or waste products, to other parts of the world. These other parts may be other states or areas outside state jurisdiction, such as the high seas or the atmosphere beyond the airspace of these states. This reality, which embodies the concept of Environmental Load Displacement, is directly connected with the essence of environmental justice as it originated in the United States, and is the basis for justifying the extrapolation of environmental justice to an international level. This extrapolation can be made both in its material dimension (the unequal

distribution of benefits and burdens) – as in its procedural aspects – the incapacity of effective participation in the important decision-making that influences the system. In this sense restorative, distributive and participative justice would be clear components of environmental justice at the international level. All three aspects could be reflected in the debate about ecological debt, which calls for mending the historic debt.

In the area of international environmental law, the notion of environmental justice is in the process of being accepted. The aspects that have begun to enter into the regulatory system have done so under the umbrella of sustainable development. In this respect, contributions can be seen in at least three material matters of relevance for environmental justice: the role of intra and intergenerational equality in international law; the differing treatment allocated to states depending on their level of economic development and respective capacities; and access to information, participation in decision-making and access to justice in environmental issues.

Differential treatment, formalised through the principle of CBDRP, takes place mainly on the level of inter-state relationships. Intra and intergenerational equity have also developed in the international arena, focusing on international measures against global problems such as poverty or climate change. In contrast, environmental laws related to information access, participation, and access to justice are formed directly as individual rights, constituting a fundamental provision in international environmental law over the area of human rights. Human rights try to put legal tools at the disposal of individuals and their organisations that defend other related rights, such as the right to life and the right to health.

According to the often-mentioned study of Paredis, Lambrecht, Goeminne and Vanhove, ecological debt could have a definition in legal terms that includes three seemingly complementary components: “(1)) the ecological damage caused over time by country A in other countries or in an area under jurisdiction of another country through its production and consumption patterns, and/or (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 ecosystem goods and services over time by country A at the expense of the equitable rights to these ecosystems and ecosystem goods and services by other countries or individuals.”

As this report points out, many questions of legal importance are raised from such thinking. Among them, deciding the date from which the debt is calculated, identifying debtors and creditors, defining damage and content of redress, identifying damages and the causal relationship from which they originated and their valuation, identifying pertinent ecosystems and the benefits and services provided by these, and defining equitable rights which correspond to each country or individual. Without any doubt, all these require a further effort to make them work at the judicial level.

The main obstacle: the political conditions for opening up a formal debate about the concept of ecological debt in inter-governmental forums do not exist

However, the main obstacle to operationalising a legal format for the concept of ecological debt is that the necessary political conditions for opening up a formal

Evidence of the ecological debt is particularly apparent in three sectors: climate change, exploitation of biodiversity, and export of hazardous waste. International legal regimes in these sectors stumble over formidable obstacles in trying to be effective

debate about the concept in inter-governmental forums do not exist. In fact, on the inter-governmental level, even those who have employed the concept do not appear to have done so with the aim of establishing a legal method for proceeding with the calculation of such debt or the mechanisms to make its payment effective. In other words, they have not used it as a concept destined to generate in itself legal consequences.

Rather, it has been used, especially in the international climate change regime, as a general reason for denouncing a historic injustice that legitimised the application of corrective principles in international relationships, especially the CBDRP. This principle offers a ground for financial and technological aid to developing countries, while addressing the specific needs amongst the less developed countries and those which are most vulnerable as a result of climate change.

At the level of institutionalised international relationships, sustainable development is presented as a new paradigm, an alternative capable of reconciling the needs of development with respect for the environment, on the basis of three mutually influential and supportive pillars - the economic, social and environmental pillars. However, as has been seen in this study, sustainable development as a concept is open to many diverse interpretations in relation to its content and reach. Even in the legal scope, it can be seen variously as a framework, aim, or general model, in the sense that it is used in the context of the Millennium Development Goals, and for others, a specific principle.

Evidence of the ecological debt can be found in multiple sectors of the economy, but it is particularly apparent in three, in climate change, in the exploitation of biodiversity, and in the export of hazardous waste. To regulate these, international law has provided distinct regimes around the UNFCCC, the CBD, and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, respectively. Despite the obvious necessity and undoubted positive aspects of these regimes, they all stumble over formidable obstacles in trying to be effective.

With respect to the first sector, and despite the expectations raised by the Kyoto Protocol, there are several weaknesses. In the first place, there is insufficient commitment from many of the countries with the highest levels of greenhouse gas emissions to change their production patterns in order to reduce emissions. This is exacerbated by the progressive increase of emissions in emerging countries. In the second place, flexible mechanisms designed to meet emission reduction targets through the promotion of forestry, hydroelectric and mining projects, have in many cases have not brought about a real reduction of emissions, either in the countries where such projects are hosted, or in the states promoting such initiatives. In the third place, the new GCF, a contribution from industrialised countries to finance the fight against climate change by less developed countries, has failed to meet expectations both quantitatively and qualitatively, and suffered delays. The GCF could have represented a concrete means of compensatory action over climate debt, but instead represents a lost opportunity.

With respect to the biological diversity regime it is important to pay respect to the regulatory advance that the 2010 Protocols represent in relation to the third objective of the CBD, which is the fair and equitable distribution of the benefits which derive from commercial or other uses of these genetic resources. These include the Nagoya Protocol (about access to genetic resources and fair and equitable sharing of benefits arising from their utilisation) and the Nagoya-Kuala Lumpur Protocol on liability and redress, supplementary to the Cartagena Protocol on biosafety. However, the general state of the planet's biodiversity is not improving. There is no legal scheme specifically for forests and the problem of monopolising land continues growing. What is more, the environmental and social aspects of the aforementioned regimes clash head-on with the rationality of international rules of commerce and of protection of intellectual property. In particular, there is a clash with the Agreement on TRIPS, adopted in Marrakesh in 1994, within the framework of the WTO. The TRIPS Agreement, promotes the protection of intellectual property without taking into account either the distribution of profits between the patent owner and the country of origin from which the resources or the traditional knowledge were used, or any form of a previously established consent from the country of origin nor from the indigenous or owner community of the knowledge, invention or traditional practices used as a basis for the patent.

The regime to control transboundary movements of hazardous wastes is, without doubt, a key tool that can contribute to stopping the increase in ecological debt. It has had reasonable working success in terms of prohibiting the export or import of hazardous wastes and other wastes destined for or coming from a state which is not part of the Convention, and prohibits the export of the residues if the importing state has not given written approval specifically for the import of these residues. However, legal waste movement only requires the importing state's consent which, in many cases allows an importing state to turn into a dump in exchange for financial benefits and the possibility of establishing a recycling industry (although often without the necessary safety conditions). In this sense, the cases of electrical and electronic waste products in China or Ghana, or the breaking up of ships in India, Pakistan or Bangladesh are illustrative examples, as argued in EJOLT report 1[392].

The agreement reached within the COP in 2011 has opened up the possibility of putting into force the amendment to the convention that forbids the export of hazardous wastes from countries included in Annex VII (UE, OCDE and Liechtenstein) to countries not included in the same, which would be a definite advance. However, in addition to the fact that the United States are not party to this regime, the so called ban amendment has several weak points, namely: it will not avoid the illegal export routes for hazardous waste; the ban amendment does not cover the legal movements of wastes between non-Annex VII countries; and it does not protect spaces not subject to state jurisdiction, such as the high seas.

[392] F. Demaria, E. Tasheva, I. Hlebarov (2012) 'Industrial (toxic) waste conflicts around the world. Case Studies from India and Bulgaria' EJOLT report No. 1, 68 p.

The model of sustainable development as it is being interpreted and applied does not seem to give a suitable nor fair answer to the world ecological crisis

Furthermore, facing some of the more pressing environmental problems requires understanding that the dominant interpretation among states continues to associate development with economic growth. This interpretation denies the limits of the carrying capacity of the Planet, which makes continuous growth unsustainable, at least for everybody, given that the struggle against poverty inevitably requires growth that must necessarily be at the expense of those that have already developed. Economic development as it continues to be understood maintains an increasing demand for energy and natural resources, wherever and however they may be found, as growing competition among industrialised states over gas and oil deposits in the Arctic illustrates.

In this situation, development and sustainability end up being contradictory. United Nations reports on progress in relation to the integration of the three sustainable development pillars have highlighted the relative frailty of the social and environmental pillars relative to the economic pillar. Even the new proposal of the 'green economy' seems to regressively emphasise the economic pillar, leaving the other two a lesser priority. Development can only be sustainable if the standard and quality of human life improves and guarantees / conserves the Planet's natural resources. This requires, not only the integration of the ecological costs in financial accounting, but above all, a re-thinking of production and consumption patterns that in the North tend to increase the consumption of resources and energy constantly. The failure of Rio+20 to produce any sort of meaningful agreement sent a worrying signal about how the majority of world political leaders have assigned a secondary role to the environment and sustainable development itself.

The concept of sustainable development advocates a long term perspective connecting present and future generations in solidarity. However, the concept does not necessarily entail compensatory responsibilities, not just because of the effort it would entail for the large number of states following this model of development, but because it does not determine the historic responsibilities that triggered the environmental crisis that resulted from the established model of sustainable development. The failure of the Yasuní-ITT initiative in Ecuador is a good example of the previous.

Furthermore, the persistence of poverty on a global scale together with the increased accumulation of wealth into increasingly fewer hands (between and within countries), shows how problematic it has been for the system to reconcile the economic dimension with the social dimension of sustainable development, or to put equity into practice on an intergenerational level. The limited prospects of success for the MDGs are proof of the unwillingness of states – especially those with the greatest responsibility and capacity (economically and technologically) - to confront these challenges in a consequential way. In all of this, the model of sustainable development as it is being interpreted and applied, does not seem to give a suitable nor fair answer to the world ecological crisis. The global patterns of unequal ecological exchange cannot be put right with tiny adaptations in the existing international regimes, or through the formal promotion of some isolated

principles, given that the right itself cannot guarantee environmental justice at a world level.

The task of reconstructing international law so as to guarantee an equitable distribution of environmental benefits and burdens (environmental justice) linked with economic processes designed to satisfy human needs, requires seeking inspiration from distinct schools of international legal thought. In our view, constitutional ideas are among the most interesting because they emphasise the necessity to define common values and common goods that are aimed at constraining the action of global public powers. Third World approaches to international law are also of interest in the way that they stress the role that international law has played historically as a tool at the service of the Western countries, to facilitate continuous exploitation in the Third World. Both approaches, despite their differences, have overlapping elements, such as the promotion of transparency and the accountability of international institutions and transnational corporations, the improvement of the effective use of rights language through the consideration of human and peoples rights on a transnational level, and the promoting of sustainability and equity.

A first pragmatic step towards constitutionalisation is the the formal recognition of the environment as a global public good combined with a major focus on human rights in international environmental regimes

Reassessing international law from this particular perspective thus requires identifing existing elements in the global legal system that might serve as anchor points in an eventual process of constitutionalisation. The formal recognition of the environment as a global public good combined with a major focus on human rights in international environmental regimes is considered a first pragmatic step in this direction. The first important element in this construction lies in the principle of cooperation, called on so many times in various international agreements, in particular to face the common concerns of humankind. In a way, this principle constitutionalises the states' right and the duty to cooperate in the conservation, protection and recovery of the world environment.

In addition, analysing the main environmental regimes allows three categories to be established, which would correspond to distinct degrees of constitutionalisation. In regimes concerning the protection of global commons (the ozone layer, climate change, persistent organic pollutants), states parties undertake obligations *erga omnes partes*, i.e. owed indivisibly to all other states parties, even if their fulfilment is submitted to differential treatment among developed and developing states. Regimes concerning the protection of environmental goods or ecosystems that largely remain under state jurisdiction but have been qualified as of common concern to humankind (biodiversity, desertification), tend to reinstate obligations stemming from the principles of sovereignty and prevention. In order to implement them, these regimes set up a general framework for the sustainable use of the resources implicated, together with a set of enforcement mechanisms based on bilateral and reciprocal relationships between parties. Finally, regimes that rule transboudary movements of products or substances that pose risk to the environment or human health (hazardous wastes, genetically modified organisms, pesticides and other toxic products) are also based on a network of bilateral relationships using the application of the principle of prior informed consent. These are woven under a

general multilateral framework that runs alongside specific structures of responsibility for damages.

However, environmental regimes offer limited results and can encounter insurmountable obstacles as they challenge fundamental aspects of the production and consumption model that dominates at a global level. Therefore, it is necessary to take into account counter-hegemonic claims put forward by social movements, which are implicit in concepts such as environmental justice and ecological debt in their international dimension. These concepts and claims might inform a re-reading of some of the fundamental principles of international law, providing specific coherence to relationships among the regulations of international environmental law, of protection of human rights and international humanitarian law, and of international criminal law. It could even ease the formation of new substantive or procedural rules for corrective, compensatory justice, distributive, and procedural justice.

In this sense, the CBDRP is incorporated as a fundamental element to include environmental justice aspects at the level of international environmental law, and more specifically, as a corrective mechanism for ecological debt. However, the principle should not only be limited to establishing a generic distinction between two categories of countries –developed and developing– but should also adapt so as to grasp more varied and changing realities. States traditionally labelled as 'developing countries', such as Brazil, China, India, or the petrol kingdoms of the Persian Gulf (who duplicate the behaviour of industrialised countries in their relations with other poorer developing countries), have begun to take on the role of debtors at the same time as creditors, of ecological debt.

There are many more important questions without clear lines of progress that need to be addressed for a reconstruction of international law. This is especially so in terms of the precariousness of international institutional mechanisms of decision-making, dispute settlement, enforcement of international obligations (such as responsibility for environmental damage) and access to justice in environmental matters.

A possible strategy for modulating the interpretation and application of international environmental law in the interests of a greater environmental justice, consists in the consistent interpretation of international regulatory standards with internationally recognised human rights. The relationship between human rights and environmental law is far from being a clear, and raises several questions. At the edge of ontological debates about the 'environmentalisation' of the list of existing human rights, or the formulation of a universal human right to a healthy environment, the establishment of procedural human rights in the environmental context - access to information, participation in decision-making and access to justice - is seen as crucial for a model of environmental governance that promotes justice in its corrective, distributive, and of course, procedural dimensions.

Be that as may, while recognising the disparity in approaches which underlie these two branches of international law – international human rights law and international environmental law - this work considers that there is space for a

certain interaction between the two types of regime. To be specific, conceived as interpretative standards, those human rights internationally recognised can be used as interpretative tools with the potential to significantly clarify the content of the obligations that developed and developing states have taken on. This is particularly so in the climate change regime framework, where human rights might influence the operation of the principles laid down in Article 3 CMCC, namely the CBDRP and the precautionary principle, as a way of promoting an equal intra- and intergenerational share in the design and implementation of measures of mitigation and adaptation. Thus, despite playing a modest role in the context of the climate change regime, human rights can contribute to reduce the states and international institutions' discretion in the application of the climate change regime, thereby promoting distributive and procedural justice in this particular field of international law.

An underlying theme of this report highlights the necessity of building a real global community, starting from the guarantee of a minimal status for all its members

Environmental problems and particularly environmental justice are key aspects in the constitutionalisation of international law. An underlying theme of this report highlights the necessity of building a real global community, starting from the guarantee of a minimal status for all its members. In this framework the idea of ecological debt can help to advance the building of a core of constitutional law at international level. Ecological debt is related with the idea of justice because is used as conceptual basis for establishing the dimension of ecological unequal exchange and unequitable use of common spaces, fundamental injustices in the global system built in the latest centuries.

Ecological debt is a tool to quantify the unequal exchange of resources between the centre and the periphery of global economy and unequitable use of common spaces, but it can be useful as well in narrower contexts, like that of a national economy for example. Given the difficulties regarding agreement on the accounting unit, it is not easy to define the nature of compensation. Yet the idea is useful in order to underline the main problem, the lack of fairness in exchange relations in current economic system and its effects on the environment at local and at global level.

In the field of access to justice for victims of environmental damage, the limitations are still enormous. On the one hand, where domestic judicial systems allow it, it is only possible to claim civil liabilities for a specific damage, the concrete cause of which must be identified through conclusive evidence. Eventually, criminal prosecution may be a further alternative, provided that the harmful activity is already defined as a criminal offence in domestic law. Yet, these claims are rarely successful, particularly in those cases in which they are brought before foreign courts. Whenever environmental damage also involves the violation of human rights, such as the right to life or to health, additional possibilities for legal action may arise in accordance with domestic statutes. On the other hand, international courts are not well-equipped for environmental controversies. The International Court of Justice only deals with inter-state claims. The International Tribunal for the Law of the Sea may be addressed for the protection of the marine environment, but it also deals primarily with inter-state litigation, except for cases relating to seabed operations. The International Criminal Court can only deal with

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environmental damages if they were caused in the context of the commission of war crimes as defined in the ICC Statute. Equally, if environmental damages may be brought into relation with the violation of human rights, victims may seek access to international human rights courts. Nevertheless, none of the aforementioned international courts is empowered to adjudge the conduct of transnational enterprises, who are more often than not behind the most severe damages inflicted on the environment. The legal avenues to hold them accountable for their conduct in third countries are particularly feeble.

In any case, the events causing damage must occur after the legal rules establishing responsibility are enacted and had enter into force. The cause of the damage must also be identifiable and the causal relationship demonstrable, i.e. supported by conclusive evidence. At times, these requirements are met and domestic courts accept claims for compensation, as for instance in the case brought against Texaco in Ecuador. However, these legal constraints make it virtually impossible to seek compensation for damages that emerge from highly complex cumulative processes that develop over long periods of time with the interference of a large number of anthropogenic and non-anthropogenic factors. This was particularly evident in the case brought by the Inuit before the Inter-American Commission of Human Rights. The sheer difficulties that these sorts of claims have to face have also been visible in the United States recently, where the federal courts dismissed a series of cases, notably one concerning Apartheid in South Africa (Balintulo v. Daimler AG, US Court of Appeals for the Second Circuit, 21 Aug 2013), after the US Supreme Court's decision of April 2013 in Kiobel v Royal Dutch Petroleum Co.

Beyond the judicial sphere, there have been experiences of compensation of historical crimes, such as those imposed on defeated factions of armed conflicts. This was the case of compensation granted to victims of Nazi Germany through the Conference on Jewish Material Claims against Germany, an organisation that administers direct payment programs to certain eligible victims of Nazi persecution, and the German Forced Labour Compensation Programme, established in 2000, who paid out more than EUR 4.37 billion to close to 1.7 million of then-living victims around the world. Also, after the 1991 Gulf War, the United Nations Compensation Commission (UNCC) was created to process claims and pay compensation for losses and damage suffered as a direct result of Iraq's unlawful invasion and occupation of Kuwait, including environmental damages.

Thus, any claim for the full or partial compensation of the accumulated ecological debt, including the climate debt, needs to meet the specificity and causality requirements outlined above. If these requirements can not be met, compensation claims should be addressed on a political level in order to seek a large consensus within the international community. Such a consensus should include the definition of the ecological and climate debts, their valuation methods, and compensatory mechanisms. These may be of a monetary nature, or foresee future actions to be financed by debtors. Nevertheless, even if such a hypothetical consensus was

reached among a large majority of states, it still would not solve all legal problems that may arise from ecological and climate debt.

From a legal point of view, the main problematic element in the building of a useful conceptual framework for ecological debt is the definition of the subjects implied. Debt being a legal relationship, it is important to define its terms, that is, for debtors and creditors. Since we understand ecological debt as the liability linked to an unjust enrichment, we have to establish the cause of injustice. Moreover, it is important to assess the nature and width of the enrichment, in order to decide how to compensate it. Finally, it is necessary to define who has to be compensated and who is the liable party in the legal relationship.

An appropriate definition of the valuation of the unjust enrichment and a proper determination of creditors and debtors, is the most challenging and important problem. This is because even if one successfully accounts and defines liabilities, the natural response of the law, to demand payment of the debt, is not an ideal outcome. Payment of the ecological debt would only provide a moment of relief from pressure on resources and on human beings. Furthermore, without changing the conditions of reproduction of the global social metabolism, ecological debt would tend to grow again in the future. Allowing ecological debt to reproduce itself in a world of limited natural resources would not solve problems.

Consequently, ecological debt seems to be especially useful as a tool to compel social change, a technical device to justify particular transfers of resources from the centre to the periphery. Transfers can be instrumental in facing up to the real problems of excessive pressure on resources and the unjust sharing of benefits and burdens of social metabolism. Injustice in social relations and the limited availability of natural resources are the main questions underlined by the idea of ecological debt. For this reason, we have to look beyond an isolated payment of the debt in a certain moment.

A careful determination of the ecological debt must be envisaged to fund public policies for rebalancing the social metabolism (intraspecific or environmental justice) and for the palliation of its effects on environment and biodiversity (interspecific or ecological justice). Obviously, this demands a rebuilding of international relations and international law, a global constitutionalism. The determination of ecological debt could be used to raise funds for the design and implementation of a legal international framework addressed to change the current ways of exchange and relieve present pressure on nature.

As a conclusion, ecological debt can be useful (conceptually and financially) to advance a more just and fair system of international relations, an inclusive international law framework and a more realistic and equitable social metabolism. The idea of a global community defined by internal solidarity and external respect to life as whole could be the final horizon of a wise use of ecological debt as a tool of social change at international level.

Ecological debt can be useful to advance a more just and fair system of international relations, an inclusive international law framework and a more realistic and equitable social metabolism

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References

Acción Ecológica, 'No More Plunder, They Owe Us the Ecological Debt!' (1999) 78 Green Alert.

Adeola, F. O., 'From Colonialism to Internal Colonialism and Crude Socio-Environmental Injustice: Anatomy of Violent Conflicts in the Niger Delta of Nigeria' in Chioma Steady, F. (ed), Environmental Justice in the New Millenium: Global Perspectives on Race, Ethnicity, and Human Rights (Palgrave Macmillan, New York 2009).

Agyeman, J., R. Bullard and B. Evans (eds), Just Sustainabilities: Development in an Unequal World (MIT Press 2003).

Alija-Fernández, R. A., 'Las quejas interestatales ante órganos judiciales o cuasi-judiciales de garantía de los derechos humanos: ¿Un mecanismo útil en situaciones de crisis?' (2011) 22 Revista Electrónica de Estudios Internacionales 1.

Alston, P., 'The Myopia of the Handmaidens: International Lawyers and Globalization' (1997) 8(3) EJIL 435.

Altvater, E., 'The Growth Obsession' (2002) 38 Socialist Register 73.

Amin, S., Unequal Development: An Essay on the Social Formations of Peripheral Capitalism (Monthly Press Review, New York 1976).

Anand, R., International Environmental Justice: A North-South Dimension (Ethics and Global Politics, Ashgate, Aldershot 2004).

Andersson, J. O. and M. Lindroth, 'Ecologically Unsustainable Trade' (2001) 37 Ecological Economics 13.

Andreassen, B. A and S. P. Marks (eds), Development as a Human Right: Legal, Political and Economic Dimensions (Harvard University Press, Cambridge 2006).

Angie, A., Imperialism, Sovereignty and the Making of International Law (CUP, Cambridge 2004).

Austin, K., 'The 'Hamburger Connection' as Ecologically Unequal Exchange: A Cross-National Investigation of Beef Exports and Deforestation in Less-Developed Countries' (2010) 75(2) Rural Sociology 270.

Azar, C. and J. Holmberg, 'Defining the Generational Debt' (1995) 14(1) Ecological Economics.

Baer, P., 'International Justice' in Dryzek, J. S., R. B. Norgaard and D. Schlosberg (eds), The Oxford Handbook of Climate Change and Society (OUP, Oxford 2011).

Baer, P., 'Adaptation: Who Pays Whom?' in Adger, W. N. and others (ed), Fairness in Adaptation to Climate Change (MIT Press, Cambridge, MA 2006).

Barreda, A., 'Geopolítica, recursos estratégicos y multinacionales' Pueblos. Revista de información y debate (2005).

Barsh, R. L., 'The Right to Development as a Human Right: Results of the Global Consultation' (1991) 13(3) Human Rights Quarterly 322.

Bedjaoui, M., 'Introduction générale' in Bedjaoui, M. (ed), Droit international. Bilan et perspectives. Tome I (Pedone, Paris 1990).

Bedjaoui, M., Towards a New International Economic Order (Holmes & Meier, New York 1979).

Bedjaoui, M., 'Non-alignement et droit international' (Collected Courses of the Academy of International Law 151 1976) 335.

Benchikh, M., 'Le droit des peuples au développement et ses negations dans l'ordre international économique actuel. Pour une réglementation juste et équitable' (Informe al XIII Congreso de la Asociación Internacional de Juristas Demócratas Barcelona 19-24 March 1990).

Benchikh, M., Droit international du sous-développement. Nouvel ordre dans la dépendance (Berger-Levrault, Paris 1983).

Benedickson, J., Environmental Law (Irwin Law, Ottawa 1997).

Bennouna, M., Droit international du développement. Tiers-monde et interpellation du droit international (Berger-Levrault, Paris 1983).

Benvenisti, E., 'Reclaiming Democracy: The Strategic Uses of Foreign and International Law by National Courts' (2008) 102(2) AJIL 241.

Biermann, F. and others, 'Earth system governance: a research framework' (2010) 10(4) International Environmental Agreements: Politics, Law and Economics 277.

Bodansky, D., 'Is There an International Environmental Constitution?' (2009) 16(2) Indiana Journal of Global Legal Studies 565.

Bollecker-Stern, B., 'The Legal Character of Emerging Norms Relating to the New International Economic Order: Some Comments' in Hossain, K. (ed), Legal Aspects of the New International Economic Order (Pinter, London 1980).

Bosselmann, K., 'Human Rights and the Environment: Redefining Fundamental Principles?' in Gleeson, B. and N. Low (eds), Governance for the Environment: Global Problems, Ethics and Democracy (Palgrave, London 2001).

Boyle, A., 'Human Rights and the Environment: Where Next?' (2012) 23(3) EJIL 613.

Boyle, A., 'Human Rights or Environmental Rights? A Reassessment' (2007) 18 Fordham Environmental Law Review 471.

Boyle, A., 'The Gabčíkovo-Nagymaros Case: New Law in Old Bottles' (1997) 8 Ybk Intl Envtl L 13.

Bringezu, S. and H. Schütz, 'Material Use Indicators for the European Union, 1980-1997. Economy-Wide Material Flow Accounts and Balances and Derived Indicators of Resource Use' (2001)(2/B/2) Europstat Working Paper.

Brown Weiss, E., 'Intergenerational Equity: A Legal Framework for Global Environmental Change' in Brown Weiss, E. (ed), Environmental Change and International Law (UN University Press, Tokyo 1992).

Brown Weiss, E., In Fairness to Future Generations: International Law, Common Patrimony, and Intergenerational Equity (Transnational Publishers, Dobbs Ferry 1989).

Brunnée, J., 'Climate Change, Global Environmental Justice and International Environmental Law' in Ebbesson, J. and P. Okowa (eds), Environmental Law and Justice in Context (CUP, Cambridge 2009).

Brunnée, J., 'Common Areas, Common Heritage and Common Concern' in Bodansky, D., J. Brunnée and E. Hey (eds), The Oxford Handbook of International Environmental Law (Oxford University Press, Oxford 2007).

Bryant, B. and P. Mohay (eds), Race and the Incidence of Environmental Hazards (Westview Press, Boulder 1992).

Bujalic, M., Principles of International Development Law (Martinus Nijhoff, Dordrecht 1986).

Bullard, R. (ed), Dumping in Dixie: Race, Class, and Environmental Quality (3rd edn Westview Press, Boulder 2000).

Burdeau, G., L'État (Points, Paris 1970).

Burhenne-Guilmin, F. and S. Casey-Lefkowitz, 'The Convention on Biological Diversity: A Hard Won Global Achievement' (1992) 3 Yearbook of International Environmental Law 43.

Bustos-Lago, J. M. and F. Peña-López, 'Enriquecimiento injusto y responsabilidad civil extracontractual' (1997) 1 Anuario de la Facultad de Derecho de la Universidad de A Coruña 141.

Cabeza-Gutés, M. and J. Martínez-Alier, 'L'échange écologiquement inégal' in Damian, M. and J. C. Graz (eds), Commerce international et développement soutenable (Economica, Paris 2001).

Callies, C., Rechtstaat und Umweltstaat (Mohr Siebeck, Tübingen 2001).

Caney, S., 'Climate Change, Human Rights and Moral Thresholds' in Humphreys, S. (ed), Human Rights and Climate Change (CUP, Cambridge 2010).

Cardesa-Salzmann, A., 'Constitutionalising Secondary Rules in Global Environmental Regimes: Non-Compliance Procedures and the Enforcement of Multilateral Environmental Agreements' (2012) 24(1) JEL 103.

Cardesa-Salzmann, A., 'Reflections on the Suitability of a Human Rights Approach in the Context of the Climate Change Regime' in Giles-Carnero, R. (ed), Cambio climático, energía y Derecho internacional: perspectivas de futuro (Thompson-Aranzadi, Madrid 2012).

Carrillo-Salcedo, J. A., Soberanía de los Estados y derechos humanos en Derecho internacional contemporáneo (2nd edn Tecnos, Madrid 2001).

Carson, R., Silent Spring (Houghton Mifflin, New York 1962).

Catton, W. and R. Dunlap, 'Environmental Sociology: A New Paradigm' (1978) 13 The American Sociologist 41.

Catton, W. and R. Dunlap, 'Paradigms, Theories, and the Primacy of the HEP/NEP Distinction' (1978) 13 The American Sociologist 256.

Cecchetti, M., Principi costituzionali per la tutela dell'ambiente (Giuffrè, Milano 2000).

Chemillier-Gendreau, M., Humanité et souverainetés. Essai sur la fonction du droit international (La Decouverte, Paris 1995).

Chimni, B. S., 'Third World Approaches to International Law: A Manifesto' (2006) 8(1) International Community Law Review 3.

Chioma Steady, F., Environmental justice in the new millennium :global perspectives on race, ethnicity, and human rights (Palgrave Macmillan, New York etc. 2009).

Clarkson, S. and S. Wood, A Perilous Imbalance. The Globalization of Canadian Law and Governance (UBC Press, Vancouver-Toronto 2009).

Commoner, B., The Poverty of Power: Energy and the Economic Crisis (Random House, New York 1976).

Commoner, B., The Closing Circle: Nature, Man, and Technology (Alfred A. Knopff, New York 1971).

Commoner, B., Science and Survival (Viking, New York 1966).

Conti, S., Geografia economica. Teorie e metodi (UTET, Torino 1996).

Cullet, P., 'The Kyoto Protocol and Vulnerability: Human Rights and Equity Dimensions' in Humphreys, S. (ed), Human Rights and Climate Change (CUP, Cambridge 2010).

Cullet, P., 'Environmental Justice in the Use, Knowledge and Exploitation of Genetic Resources' in Ebbesson, J. and P. Okowa (eds), Environmental Law and Justice in Context (CUP, Cambridge 2009).

Cullet, P., Differential Treatment in International Environmental Law (Ashgate, Aldershot 2003).

Daniel, A., 'Civil Liability Regimes as Complement to Multilateral Environmental Agreements: Sound International Policy or False Comfort?' (2003) 12(3) Review of European Community and International Environmental Law 225-241.

De Cabo, C., 'La función histórica del constitucionalismo y sus posibles transformaciones' in Carbonell, M. (ed), Teoría de la Constitución. Ensayos escogidos (Porrúa, México D.F. 2005).

De Sadeleer, N., 'Reflexiones sobre el estatuto jurídico del principio de precaución' (2000) 25 Revista de Derecho Ambiental 9.

O. de Schutter, 'Extraterritorial Jurisdiction as a Tool for Improving the Human Rights Accountability of Transnational Corporations' Faculté de Droit de l'Université Catholique de Louvain (Louvain 22 December 2006) <http://cridho.uclouvain.be/document

s/Working.Papers/ExtraterrRep22.12.06.pdf> accessed 21 September 2012

Dobson, A., Justice and the Environment: Conceptions of Environmental Sustainability and Theories of Distributive Justice (OUP, Oxford 1998).

Donoso, A., 'Deuda ecológica: de Johanesburgo 1999 a Mumbai 2004' (2004) 27 Ecología Política 77.

Dos Santos, T., La teoría de la dependencia: balance y perspectivas (Plaza y Janés, Mexico 2002).

Dos Santos, T., La dependencia económica y política en América Latina (Siglo XXI, Mexico 1971).

Dunlap, R., 'La sociología medioambiental y el nuevo paradigma medioambiental' (2001)(162-163) Sistema: Revista de ciencias sociales 11.

Dupuy, P. M., 'Où en est le droit international de l'environnement à la fin du siècle?' (1997) 101 Revue Générale de Droit International Public 873

Dupuy, R. -J (ed), The Right to Development at the International Level (Workshop of the Academy of International Law, Sijthoff & Noordhoff, The Hague 1976).

Ebbesson, J., 'Public Participation and Privatisation in Environmental Matters: An Assessment of the Aarhus Convention' (2011) 4 Erasmus Law Review 71.

Ebbesson, J. and P. Okowa (eds), Environmental Law and Justice in Context (CUP, Cambridge 2009).

Elizalde Carranza, M. A., 'Desarrollo y cambio climático' (2010) 1 Revista Catalana de Dret Ambiental.

Emmanuel, A., Unequal Exchange (Monthly Review Press, New York 1972).

Emmanuel, A., L'échange inégal (François Maspero, Paris 1969).

Epiney, A., 'Beziehungen zum Ausland' in Thürer, D., J. -F Aubert and J. P. Müller (eds), Verfassungsrecht der Schweiz / Droit constitutionnel suisse (Schulthess, Zürich 2001).

Erbguth, W., Rechtssystematische Grundfragen des Umweltrechts (Duncker & Humblot, Berlin 1987).

Erlich, P. R., The Population Bomb (Ballantine, New York 1968).

Evans, P., '¿El eclipse del Estado? Reflexiones sobre la estatalidad en la época de la globalización' in Carbonell, M. and R. Vázquez (eds), Globalización y Derecho (Ministerio de Justicia y Derechos Humanos, Quito 2009).

Falk, R., 'The New States and International Legal Order' (Collected Courses of the Academy of International Law 118 Brill, The Hague 1966) 1.

Feuer, G., 'Les principes fondamentaux dans le droit international du développement' (Société Française de Droit International: Colloque d'Aix-en-Provènce. Pays en voie de développement et transformation du droit international Pedone, Paris 1974) 191.

Feuer, G. and H. Cassan, Droit international du développement (Dalloz, Paris 1985).

Fischer-Kowalski, M., 'Society's Metabolism: The Intellectual History of Materials Flow Analysis, Part I, 1860-1970' (1998) 2(1) Journal of Industrial Ecology 61.

Fischer-Kowalski, M. and C. Amman, 'Beyond IPAT and Kuznets Curves: Globalization as a Vital Factor in Analyzing the Environmental Impact of Socio-Economic Metabolism' (2001) 23(1) Population and Environment 7.

Fischer-Kowalski, M. and W. Hüttler, 'Society's Metabolism: The Intellectual History of Materials Flow Analysis, Part II, 1980-1998' (1998) 2(4) Journal of Industrial Ecology 107.

Fischer-Lescano, A., Globalverfassung. Die Geltungsbegründung der Menschenrechte (Velbrück, Weilerswist 2005)

E. Fisher, B. Lange, E. Scotford and C. Carlarne, 'Maturity and Methodology: Starting a Debate about Environmental Law Scholarship' (2009) 21 JEL 213

Fitzmaurice, M., 'Some Reflections on Public Participation in Environmental Matters as a Human Right in International Law' (2002) 2(1) Non-State Actors & International Law 1.

Fitzmaurice, M., 'International environmental law as a special field' (1994) 25 Netherlands Yearbook of International Law 181

Flory, M., Droit international du développement (PUF, Paris 1977).

Flory, M., 'Souveraineté des états et coopération pour le développement' (Collected Courses of the Academy of International Law 141 The Hague 1974) 255.

Fontana, J., Por el bien del imperio. Una historia del mundo desde 1945 (Pasado & Presente, Barcelona 2011).

Francioni, F., 'International Human Rights in an Environmental Horizon' (2010) 21(1) EJIL 41.

Francioni, F., 'The Rights of Access to Justice under Customary International Law' in Francioni, F. (ed), Access to Justice as a Human Right (The Collected Courses of the Academy of European Law, Vol. XVI/4, OUP, Oxford 2007).

French, D., 'Sustainable Development and the Instinctive Imperative of Justice in the Global Order' in French, D. (ed), Global Justice and Sustainable Development (Legal Aspects of Sustainable Development, Martinus Nijhoff, Leiden 2010).

Frowein, J. A., 'Reactions by Not Directly Affected States to Breaches of Public International Law' (Collected Courses of the Academy of International Law 248 The Hague 1994) 353.

Fulcher, J., 'Globalisation, the Nation-State and Global Society' (2000) 48 The Sociological Review 522.

Furtado, C., Development and Underdevelopment (University of California Press, Berkeley 1964).

García-Herrera, M. A. and G. Maestro-Buelga, 'Regulación constitucional y posibilidad del Estado social' (1988) 22 Revista Vasta de Administración Pública 87.

Gehring, T., 'Treaty-Making and Treaty Evolution' in Bodansky, D., J. Brunnée and E. Hey (eds), The Oxford Handbook of International Environmental Law (OUP, Oxford 2007).

Giljum, S., 'Trade, Material Flows and Economic Development in the South: The Example of Chile' (2004) 8(1-2) Journal of Industrial Ecology 241.

S. Giljum and K. Hubacek, 'International Trade, Material Flows and Land Use: Developing a Physical Trade Balance for the European Union. Interim Report' IIASA (Laxenburg 2001)

Girst, G., El desarrollo: historia de una creencia occidental (Catarata, Madrid 2002).

Glenn, H. P., Legal Traditions of the World (3rd edn OUP, Oxford 2003).

Gómez Isa, F., El derecho al desarrollo como derecho humano en el ámbito jurídico internacional (Universidad de Deusto, Bilbao 1999).

González Bondia, A., 'La regulación comunitaria europea del acceso a la información, la participación pública y el acceso a la justicia en materia de medio ambiente, en sus Estados Miembros' in Pigrau Solé, A. (ed), Acceso a la información, participación pública y acceso a la justicia en materia de medio ambiente: diez años del Convenio de Aarhus (Atelier, Barcelona 2008).

R. J. A. Goodland, H. E. Daly and S. El Serafy, 'Environmentally Sustainable Economic Development: Building on Brundtland' UNESCO ()

Gunder Frank, A., The Development of Underdevelopment (Monthly Review Press, New York 1966).

Häberle, P., 'Die Verfassung "im Kontext"' in Thürer, D., J. -F Aubert and J. P. Müller (eds), Verfassungsrecht der Schweiz / Droit constitutionnel suisse (Schulthess, Zürich 2001).

Harris, P. G., 'Reconceptualizing Global Governance' in Dryzek, J. S., R. B. Norgaard and D. Schlosberg (eds), The Oxford Handbook of Climate Change and Society (OUP, Oxford 2011).

N. Hemley, 'Ecological Debt: An Inquiry for Clarification of the Concept' Centre for Human Ecology - University of Edinburgh (Edinburgh 2005)

Henkin, L., 'International Law: Politics, Values, Functions. General Course on Public International Law' (Collected Courses of the Academy of International Law 216 Brill, The Hague 1989).

Hey, E., 'Common Interests and the (Re)constitution of Public Space' (2009) 39(3) Environmental Policy & Law 152.

Higgins, R., Problems and Process. International Law and How We Use it (Clarendon Press, Oxford 1994).

F. Hinterberger, S. Giljum and M. Hammer, Material Flow Accounting and Analysis (MFA). A Valuable Tool for Analyses of Society-Nature Interrelationships (The Internet Encyclopedia of Ecological Economics August 2003) <http://seri.at/wp-content/uploads/2009/09/Material-Flow-Accounting-and-Analysis-

MFA.-Encyclopaedia-of-the-International-Society-for-Ecological-Economics-ISEE.pdf> accessed 24 April 2013.

Hobson, J. A., Imperialism. A Study (Spokesman, Nottingham 2011).

Hornborg, A., B. Clark and K. Hermele (eds), Ecology and Power: Struggles over Land and Material Resources in the Past, Present and Future (Routledge, London 2013).

Hornborg, A., Global Ecology and Unequal Exchange: Fetishism in a Zero-Sum World (Routledge, London 2011).

Hornborg, A., 'Zero-Sum World Challenges in Conceptualizing Environmental Load Displacement and Ecologically Unequal Exchange in the World-System' (2009) 50(3-4) International Journal of Comparative Sociology 237.

Hornborg, A., 'Footprints in the Cotton Fields: The Industrial Revolution as Timespace Appropriation and Environmental Load Displacement' (2006) 59(1) Ecological Economics 74.

Hornborg, A., 'Towards an Ecological Theory of Unequal Exchange: Articulating World System Theory and Ecological Economics' (1998) 25 Ecological Economics 127.

Humphreys, S., 'Conceiving Justice: Articulating Common Causes in Distinct Regimes' in Humphreys, S. (ed), Human Rights and Climate Change (CUP, Cambridge 2010).

Jaria i Manzano, J., 'Circles of Consensus: the Preservation of Cultural Diversity through Political Processes' (2012) 8 Utrecht Law Review 92.

Jaria i Manzano, J., 'Democracias fragmentadas, control del poder y principio de responsabilidad. Un nuevo constitucionalismo en la era del mercado global' (2012) 60 Estudios de Deusto 303.

Jaria i Manzano, J., 'Environmental Justice, Social Change and Pluralism' (2012) 1 IUCN Academy of Environmental Law e-Journal 18.

Jaria i Manzano, J., La cuestión ambiental y la transformación de lo público (Tirant lo Blanch, Valencia 2011).

Jernelöv, A., Miljöskulden. En rapport om hur miljöskulden utvecklas om vi ingenting gör (Allmänna Förlaget, Stockholm 1992).

Jonas, H., El principio de responsabilidad. Ensayo de una ética para la civilización tecnológica (Herder, Barcelona 1995).

Jorgenson, A. K., 'The Sociology of Ecologically Unequal Exchange and Carbon Dioxide Emissions, 1960-2005' (2012) 41 Social Science Research 242.

Jorgenson, A. K., 'The Sociology of Unequal Exchange in Ecological Context: A Panel Study of Lower-Income Countries 1975-2000' (2009) 24(1) Sociological Forum 22.

Jorgenson, A. K., 'Unequal Ecological Exchange and Environmental Degradation: A Theoretical Proposition and Cross-National Study of Deforestation, 1990-2000' (2006) 71 Rural Sociology 685.

Jorgenson, A. K., K. Austin and C. Dick, 'Ecologically Unequal Exchange and the Resource

Consumption/Environmental Degradation 'Paradox': A Panel Study of Less-Developed Countries, 1970-2000' (2009) 50 International Journal of Comparative Sociology 263.

Jorgenson, A. K., C. Dick and K. Austin, 'The Vertical Flow of Primary Sector Exports and Deforestation in Less-Developed Countries: A Test of Ecologically Unequal Exchange Theory' (2010) 23(9) Society and Natural Resources: An International Journal 888.

Jorgenson, A. K. and J. Rice, 'Uneven Ecological Exchange and Consumption-Based Environmental Impacts: A Cross-National Investigation' in Hornborg, A., J. McNeill and J. Martínez-Alier (eds), Rethinking Environmental History: World-System History and Global Environmental Change (AltaMira Press, Walnut Creek 2006).

Kapteyn, P. J. G., 'The New International Economic Order: The Basis of the New International Economic Order' (1978) 25(2) Netherlands I L Rev 217.

Kiss, A., 'De la protection integrée de l'environnement à l'intégration du droit international de l'environnement. Chronique internationale 2001-2004' (2005) 30(3) Revue Juridique de l'Environnement 261-288.

Kiss, A., 'Droit international de l'environnement' (1994) 146 Jurisclasseur de droit international 11.

Kiss, A. and D. Shelton, International Environmental Law (Transnational Publishers, Ardsley 2004).

Kjellén, B., 'Justice in Global Environmental Negotiations: the Case of Desertification' in Ebbesson, J. and P. Okowa (eds), Environmental Law and Justice in Context (CUP, Cambridge 2009).

Klabbers, J., A. Peters and G. Ulfstein, The Constitutionalization of International Law (Oxford University Press, Oxford 2009).

Konate, A., 'L'Afrique et la Convention des Nations Unies sur la lutte contre la désertification' (2000) 12(4) African J Int'l Comp L 718-53.

Koskenniemi, M., 'Human Rights Mainstreaming as a Strategy for Institutional Power' (2010) 1(1) Humanity: An International Journal of Human Rights, Humanitarianism, and Development 47.

Koskenniemi, M., 'Constitutionalism as Mindset: Reflections on Kantian Themes About International Law and Globalization' (2007) 8(1) Theoretical Inquiries in Law 9.

Kotzé, L. J., 'Arguing Global Environmental Constitutionalism' (2012) 1(1) Transnational Environmental Law 199.

Langford, M. and others (ed), Global Justice, State Duties. The Extraterritorial Scope of Economic, Social and Cultural Rights in International Law (CUP, Cambridge 2013).

Larssen, C., 'La convention d'Århus: 'avancée majeure du droit international'?' in Crawford, J. and S. Nouwen (eds), Select Proceedings of the European Society of International Law: Volume 3 2010 (Hart Publishing, Oxford 2011).

Latouche, S., Sobrevivir al desarrollo (Icaria, Barcelona 2007).

Louka, E., Biodiversity and Human Rights. The International Rules for the Protection of Biodiversity (Transnational Publishers, Ardsley 2002).

Lövbrand, E., J. Stripple and B. Wiman, 'Earth System governmentality: Reflections on science in the Anthropocene' (2009) 19(1) Global Environmental Change 7.

Low, N. and B. Gleeson, Justice, Society, and Nature: An Exploration of Political Ecology (Routledge, London 1998).

Machado, G., R. Schaeffer and E. Worrell, 'Energy and Carbon Embodied in the International Trade of Brazil: An Input-Output Approach' (2001) 39(3) Ecological Economics 409.

Mariño, F., 'La protección del medio ambiente: régimen general' in Díez-Velasco, M. (ed), Instituciones de derecho internacional público (12th edn Tecnos, Madrid 1999).

Martínez-Alier, J., The Environmentalism of the Poor. A Study of Ecological Conflicts and Valuation (Edward Elgar, Cheltenham 2003).

Martínez-Alier, J., 'The Ecological Debt' (2002) 4 Kurswechsel 5.

Martínez-Alier, J., 'Ecological Debt and Property Rights on Carbon Sinks and Reservoirs' (2002) 13(1) Capitalism Nature Socialism.

Martínez-Vela, C. A., 'World System Theory' (Research Seminar in Engineering Systems MIT, Cambridge 2001) accessed 24 Apr. 13.

M'Baye, K., 'Le droit du développement comme un droit de l'homme' (1972) 5(2-3) Revue des Droits de l'Homme 503.

Meadows, D. H. and others, The Limits to Growth (Universe, New York 1972).

Meadows, D. H., J. Randers and D. L. Meadows, Limits to Growth: The 30-Year Updeate (Chelsea Green, White River Junction 2004).

Meadows, D. H., J. Randers and D. L. Meadows, Beyond the Limits (Chelsea Green, White River Junction 1993).

Mesarovic, M. and E. Pestel, Mankind at the Turning Point. The Second Report to the Club of Rome (Dutton, New York 1974).

Meyer, L. H. (ed), Legitimacy, Justice and Public International Law (CUP, Cambridge 2009).

Mickelson, K., 'Competing Narratives of Justice in North-South Environmental Relations: The Case of Ozone Layer Depletion' in Ebbesson, J. and P. Okowa (eds), Environmental Law and Justice in Context (CUP, Cambridge 2009).

Mickelson, K., 'Critical Approaches' in D. Bodansky, J. Brunnée and E. Hey (eds), The Oxford Handbook of International Environmental Law (OUP 2007), 262

Mickelson, K., 'South, North, International Environmental Law, and International Environmental Lawyers' (2000) 11 Ybk Intl Envtl L 58.

Millennium Ecosystem Assessment, 2005. Ecosystems and Human Well-being: Synthesis. (Island Press, Washington, DC, 2005). Available at <http://www.unep.org/maweb/documents/document.356.aspx.pdf> (accessed: 24 Apr. 13).

Mora, M., 'Las experiencias de la autonomía indígena zapatista frente al Estado neoliberal mexicano' in González, M., A. Burguete-Cal y Mayor and P. Ortiz-T. (eds), La autonomía a debate. Autogobierno indígena y Estado plurinacional en América Latina (FLACSO, GTZ, IWGIA, CIESAS, UNICH, Quito 2005).

Muradian, R. and J. Martínez-Alier, 'Trade and the Environment from a "Southern" Perspective' (2001) 36 Ecological Economics 281.

Muradian, R., M. O'Connor and J. Martínez-Alier, 'Embodied Pollution in Trade: Estimating the "Environmental Load Displacement" of Industrialized Countries' (2002) 41(1) Ecological Economics 51.

Neumayer, E., 'In Defence of Historical Accountability for Greenhouse Gas Emissions' (2000) 33 Ecological Economics 185.

Newton, D. E., Environmental Justice: A Reference Handbook (2nd edn Abc-Clio Inc., Santa Barbara 2010).

Nollkaemper, A., National Courts and the International Rule of Law (OUP, Oxford 2011).

Nollkaemper, A., 'Sovereignty and Environmental Justice in International Law' in Ebbesson, J. and P. Okowa (eds), Environmental Law and Justice in Context (CUP, Cambridge 2009).

Nussbaum, M. C., 'Capabilities as Fundamental Entitlements: Sen and Social Justice' (2003) 9(2-3) Feminist Economics 33.

Okereke, C., Global Justice and Neoliberal Environmental Governance. Ethics, Sustainable Development and International Cooperation (Routledge Research in Environmental Politics, Routledge, Abingdon 2008).

Onuma, Y., A Transcivilizational Perspective on International Law. Questioning Prevalent Cognitive Frameworks in the Emerging Multi-Polar and Multi-Civilizational World of the Twenty-First Century (Pocketbooks of the Hague Academy of International Law 8, Martinus Nijhoff, The Hague 2010).

Opschoor, J. B. and R. Weterings. 'Environmental Utilisation of Space: An Introduction' (1994) 9 (4) *Tijdschrift Voor Milieukunde* 198.

Ott, H., W. Sterk and R. Watanabe, 'The Bali Roadmap: New Horizons for Global Climate Policy' (2008) 8(1) Climate Policy 91.

Palacios-Romeo, F. J., 'El proceso normativo internacional sobre derechos de los pueblos indígenas: evolución jurídica y proyección política' (1998) 2 Revista Aragonesa de Administración Pública 105.

Paredis, E. and others, The Concept of Ecological Debt: its Meaning and Applicability in International Policy (Academia Press, Gent 2008).

Paredis, E., Lambrecht, J. Goeminne G. and Vanhove, W. 'Elaboration of the concept of ecological debt. Final

report' Centre for Sustainable Development, Ghent University (Ghent 1 Sept. 2004) <www.cdo.ugent.be/publicaties/005.ecodebt_report_1_core.pdf> accessed 19 April 2013.

Paulus, A. L., 'The International Legal System as a Constitution' in Dunoff, J. L. and J. P. Trachtman (eds), Ruling the World? Constitutionalism, International Law, and Global Governance (CUP, Cambridge 2009).

Pauwelyn, J., Optimal Protection of International Law. Navigating between European Absolutism and American Voluntarism (Cambridge University Press, Cambridge 2008).

Pellet, A., Droit international du développement (PUF, Paris 1978).

Perrez, F. X., Cooperative Sovereignty. From Independence to Interdependence in the Structure of International Environmental Law (Kluwer Law International, The Hague 2000).

Petitpierre-Sauvain, A., 'Fondements écologiques de l'ordre constitutionnel suisse' in Thürer, D., J. -F Aubert and J. P. Müller (eds), Verfassungsrecht der Schweiz / Droit constitutionnel suisse (Schulthess, Zürich 2001).

Pianta, M., 'Parallel Summits of Global Civil Society' in H. Anheier, M. Glasius and M. Kaldor (eds), Global Civil Society (OUP, Oxford 2001), 169.

Pigrau Solé, A., Subdesarrollo y adopción de decisiones en la economía mundial (Tecnos, Madrid 1990).

Pigrau Solé, A. and S. Borràs Pentinat, 'Diez años del Convenio de Aarhus sobre acceso a la información, participación pública y acceso a la justicia en materia de medio ambiente' in Pigrau Solé, A. (ed), Acceso a la información, participación pública y acceso a la justicia en materia de medio ambiente: diez años del Convenio de Aarhus (Atelier, Barcelona 2008).

A. Pigrau, S. Borràs, J. Jaria and A. Cardesa-Salzmann, 'Legal Avenues for EJOs to Claim Environmental Liability. EJOLT Report No. 4' ejolt.org ()

Poiares Maduro, M., 'The importance of being called a constitution: Constitutional authority and the authority of constitutionalism' (2005) 3(2/3) International Journal of Constitutional Law 332.

Posner, E. A., The Perils of Global Legalism (University of Chicago Press, Chicago 2009).

Posner, E. A., 'Climate Change and International Human Rights Litigation: A Critical Appraisal' (2007) 155(6) University of Pennsylvania Law Review 1925.

Prebisch, R., 'Towards A New Trade Policy for Development' (Report by the Secretary-General of the Conference. Proceedings of the United Nations Conference on Trade and Development. Vol. II: Policy Statements United Nations, Geneva 23 March-16 June 1964) 7.

Rajagopal, B., International Law from Below. Development, Social Movements and Third World Resistance (CUP, Cambridge 2003).

Rajamani, L., 'The Increasing Currency and Relevance of Rights-Based Perspectives in the International Negotiations on Climate Change' (2010) 22(3) JEL 391.

Rajamani, L., Differential Treatment in International Environmental Law (OUP, Oxford 2006).

Rawls, J., A Theory of Justice (revised edn Harvard University Press, Cambridge 1999).

Redgwell, C., 'Access to Environmental Justice' in Francioni, F. (ed), Access to Justice as a Human Right (The Collected Courses of the Academy of European Law, Vol. XVI/4, OUP, Oxford 2007).

Rees, W. and M. Wackernagel, 'Urgan Ecological Footprints: Why Cities Cannot Be Sustainable - and Why They Are a Key to Sustainability' (1996) 16 Environmental Impact Assessment Review 223.

Rhinow, R., 'Wirtschafts- und Eigentumsverfassung' in Thürer, D., J. -F Aubert and J. P. Müller (eds), Verfassungsrecht der Schweiz / Droit constitutionnel suisse (Schulthess, Zürich 2001).

Rice, J., 'The Transnational Organization of Production and Uneven Environmental Degradation and change in the World Economy' (2009) 50(3-4) International Journal of Comparative Sociology 215.

Rice, J., 'Ecological Unequal Exchange: Consumption, Equity and Unsustainable Structural Relationships within the Global Economy' (2007) 48(1) International Journal of Comparative Sociology 43.

Rice, J., 'Ecological Unequal Exchange: International Trade and Uneven Utilization of Environmental Space in the World System' (2007) 85 Social Forces 1369.

Riechmann, J., 'Desarrollo sostenible: la lucha por la interpretación' in Riechmann, J. and others (ed), De la economía a la ecología (Trotta, Madrid 1995).

Roberts, J. T. and B. C. Parks, 'Ecologically Unequal Exchange, Ecological Debt, and Climate Justice. The History and Implications of Three Related Ideas for a New Social Movement' (2009) 50(3-4) International Journal of Comparative Sociology 385.

Roberts, J. T. and B. C. Parks, A Climate of Injustice: Global Inequality, North-South Politics, and Climate Policy (MIT Press, Cambridge 2007).

M. L. Robleto and W. Marcelo, 'Deuda ecológica' Instituto de Ecología Política (Santiago de Chile 1992)

Rolston III, H., 'Rights and Responsibilities on the Home Planet' (1993) 18 Yale Journal of International Law 251.

Ronellenfitsch, M., Selbstverantwortung und Deregulierung im Ordnungs- und Umweltrecht (Duncker & Humblot, Berlin 1995).

Sachs, W. (ed), The Development Dictionary. A Guide to Knowledge as Power (2nd edn Zed Books, London 2010).

Salem, M., 'Vers un nouvel ordre économique international. À propos de la 6ème session extraordinaire des Nations Unies' (1975) 102 Journal de Droit International 753.

Sand, P. H., 'The Right to Know: Freedom of Environmental Information in comparative and International Law' (2011) 20 Tulane J Intl & Comp L 203.

Sands, P., 'International Courts and the Application of the Concept of "Sustainable Developement"' (1999) 3 Max-Planck Yearbook of United Nations Law 389.

Sands, P., 'Access to Environmental Justice in the European Community: Principles, Practice and Proposals' (1994) 3(4) Rev Eur Community & Intl Envtl L 206.

Savaresi, A., 'The International Human Rights Law Implications of the Nagoya Protocol' in Morgera, E., M. Buck and E. Tsioumani (eds), The 2010 Nagoya Protocol on Access and Benefit-sharing in Perspective: Implications for International Law and Implementation Challenges (Martinus Nijhoff, Leiden 2013).

Schachter, O., 'The Evolving International Law of Development' (1976) 15(1) Columbia Journal of Transnational Law 1.

Schall, C., 'Public Interest Litigation Concerning Environmental Matters before Human Rights Courts: A Promising Future Concept?' (2008) 20(3) JEL 417.

Schlosberg, D., Defining Environmental Justice: Theories, Movements, and Nature (Oxford University Press, Oxford 2007).

Schwöbel, C. F. J., Global Constitutionalism in International Legal Perspective (Martinus Nijhoff, Leiden 2011).

Sen, A., The Idea of Justice (Allen Lane, London 2009).

Sen, A., 'Human Rights and Capabilities' (2005) 6(2) Journal of Human Development 151.

Sen, A., 'Capability and Well-Being' in Nussbaum, M. C. and A. Sen (eds), The Quality of Life (Clarendon Press, Oxford 1993).

Sen, A., Commodities and Capabilities (OUP, Oxford 1985).

Serrano-Moreno, J. M., Ecología y Derecho: principios de Derecho Ambiental y Ecología jurídica (Comares, Granada 1992).

Shandra, J. M. and others, 'Ecologically Unequal Exchange and Deforestation: A Cross-National Analysis of Forestry Export Flows' (2009) 22 Organization and Environment 293.

Shandra, J. M. and others, 'Ecologically Unequal Exchange, World Polity, and Biodiversity Loss: A Cross-National Analysis of Threatened Mammals' (2009) 50 International Journal of Comparative Sociology 285.

Shelton, D., 'Equitable Utilization of the Atmosphere: A Rights-Based Approach to Climate Change?' in Humphreys, S. (ed), Human Rights and Climate Change (CUP, Cambridge 2010).

Shelton, D., 'Intergenerational Equity' in R. Wolfrum and C. Kojima (eds), Solidarity: A Structural Principle of International Law (Springer, Heidelberg 2010) 213.

Shelton, D., 'Describing the elephant: international justice and environmental law' in Ebbesson, J. and P. Okowa (eds), Environmental Law and Justice in Context (Cambridge University Press, Cambridge 2009).

Shelton, D., 'Environmental Justice in a Postmodern World' in Richardson, B. J. and K. Bosselmann (eds), Environmental Justice and Market Mechanisms: Key Challenges for Environmental Law and Policy (Kluwer, The Hague 1999).

Shue, H., 'Global Environment and International Inequality' (1999) 75 International Affairs 531.

Shue, H., 'Subsistence Emissions and Luxury Emissions' (1993) 15(1) Policy and Law 39.

Shue, H., 'The Unavoidability of Justice' in Hurrel, A. and B. Kingsbury (eds), The International Politics of the Environment: Actors, Interests and Institutions (Clarendon Press, Oxford 1992).

Simma, B., 'From Bilateralism to Community Interest in International Law' (Collected Courses of the International Academy of International Law 250 Brill, The Hague 1994) 229-384.

Simma, B., Das Reziprozitätselement im Zustandekommen völkerrechtlicher Verträge. Gedanken zu einem Bauprinzip der internationalen Rechtsbeziehungen (Duncker & Humblot, Berlin 1972).

A. Simms, A. Meyer and N. Robins, 'Who Owes Who? Climate Change, Debt, Equity and Survival' Christian Aid (London 1999) <www.ecologicaldebt.org/Who-owes-Who/Who-owes-who-Climate-change-dept-equity-and-survival.html> accessed 24 April 2013

Slaughter, A. -M, 'Disaggregated Sovereignty: Towards the Public Accountability of Global Government Networks' (2004) 39(2) Government and Opposition 159.

Slaughter, A. -M, 'The Real New World Order' (1997) 76(5) Foreign Affairs 183.

Soltau, F., Fairness in International Climate Change Law and Policy (CUP, Cambridge 2009).

Spangenberg, J. H., 'Environmental Space and the Prism of Sustainability: Frameworks for Indicators Measuring Sustainable Development' (2002) 2 Ecological Indicators 295.

Spangenberg, J. H., Towards Sustainable Europe. A Study from the Wuppertal Institute for Friends of the Earth Europe (FoE Publications, Luton-Brussels 1995).

Srinjyasan, U. T. and others, 'The Debt of Nations and the Distribution of Ecological Impacts from Human Activities' (2008) 105(5) Proceedings of the National Academy of Sciences 1768.

Stec, S. and G. Eckstein, 'Of Solemn Oaths and Obligations: Environmental Impact of the ICJ's Decision in the Case Concerning the Gabčíkovo-Nagymaros Project' (1997) 8 Ybk Intl Envtl L 41.

Stewart, R. B., 'Economic Incentives for Environmental Protection: Opportunities and Obstacles' in

Revesz, R. L., P. Sands and R. B. Stewart (eds), Environmental Law, the Economy, and Sustainable Development (CUP, Cambridge 2000).

Taylor, P. J. and C. Flint, Geografía política. Economía-mundo, estado-nación y localidad (Trama, Madrid 2002).

Vázquez, C. M., 'Tort Claims and the Status of Customary International Law' (2012) 106(3) AJIL 531.

W. D. Verwey, 'The Principle of Preferential Treatment for Developing Countries' (15 August 1982) UN Doc. UNITAR/DS/5

Viñuales, J. E., 'The Rise and Fall of Sustainable Development' (2013) 22(1) Rev Eur Community & Intl Envtl L 3.

Virally, M., 'Panorama du droit international contemporain' (Collected Courses of the Academy of International Law 183 The Hague 1983) 9.

Virally, M., 'Vers un droit international du développement' (1965) 11 Annuaire Français de Droit International 3.

Wackernagel, M. and W. Rees, Our Ecological Footprint: Reducing Human Impact on the Earth (New Society, Gabriola Island 1995).

Wallerstein, I., The Modern Word System, Vol IV: Centrist Liberalism Triumphant, 1789-1914 (University of California Press, Berkeley 2011).

Wallerstein, I., The Modern Word System, Vol III: The Second Great Expansion of the Capitalist World-Economy, 1730-1840's (Academic Press, San Diego 1989).

Wallerstein, I., The Modern Word System, Vol II: Mercantislism and the Consolidation of the European World-Economy, 1600-1750 (Academic Press, New York 1980).

Wallerstein, I., The Modern Word System, Vol I: Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century (Academic Press, New York 1974).

R. Warlenius, 'Organic Growth. The Development of the Concept of Ecological Debt' EJOLT (Lund February 2013).

S. Watt-Cloutier, Global Warming and Human Rights (CIEL 2007); at <www.ciel.org/Climate/IACHR_Inuit_5Mar07.html> (accessed: 24 Apr. 13)

Weisz, H., 'Combining Social Metabolism and Input-Output Analysis to Account for Ecologically Unequal Trade' in Hornborg, A., J. McNeill and J. Martínez-Alier (eds), Rethinking Environmental History: World-System History and Global Environmental Change (AltaMira, Lanham 2007).

Weterings, R. and J. B. Opschoor, 'Towards Environmental Performance Indicators Based on the Notion of Environmental Space' RMNO (Report to the Advisory Council for Research on Nature and Environment, Rijswijk 1994).

Wewerinke, M. and F. J. Doebbler, 'Exploring the Legal Basis of a Human Rights Approach to Climate Change' (2011) 10(1) Chinese JIL 141.

Williamson, J., 'A Short History of the Washington Consensus' (From the Washington Consensus towards a

new Global Governance 2004 2004) accessed 24 Apr. 13.

Wolfrum, R., 'The Principle of the Common Heritage of Mankind' (1983) 43 ZaöRV 312.

F. J. Zamora Cabot, “Acaparamiento de tierras (land grabbing) y empresas multinacionales: el caso Mubende-Neumann” (2013) 5 Papeles ‘El tiempo de los derechos’.

Zerk, J., 'Extraterritorial Jurisdiction: Lessons for the Business and Human Rights Sphere from Six Regulatory Areas' (2010)(59) Corporate Social Responsibility Initiative Working Paper.

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