

Alma Mater Studiorum Università di Bologna
Archivio istituzionale della ricerca

The enforcement of new environmental rights through the courts: problems and possible solutions

This is the final peer-reviewed author's accepted manuscript (postprint) of the following publication:

Published Version:

Silvia Bagni (2022). The enforcement of new environmental rights through the courts: problems and possible solutions. London/New York : Routledge [10.4324/9781003175308-16].

Availability:

This version is available at: <https://hdl.handle.net/11585/904410> since: 2024-06-12

Published:

DOI: <http://doi.org/10.4324/9781003175308-16>

Terms of use:

Some rights reserved. The terms and conditions for the reuse of this version of the manuscript are specified in the publishing policy. For all terms of use and more information see the publisher's website.

This item was downloaded from IRIS Università di Bologna (<https://cris.unibo.it/>).
When citing, please refer to the published version.

(Article begins on next page)

Chapter 1

The enforcement of new environmental rights through the courts: problems and possible solutions

Silvia Bagni

Abstract: Under the pressure of social activism and scientists' warnings, environmental law is going through a slow but highly innovative process of revision, characterized by an ecosystem approach. The author identifies two new trends: the recognition of Nature as a subject of rights and the claim of a (human or constitutional) right to a stable climate, capable of ensuring our survival on the planet. Nature's rights and climate change case-law are analysed, in order to pinpoint the judge's arguments supporting an ecosystemic shift of the environmental legal paradigm. Finally, both solutions are compared, underlining that there is a core difference between the intercultural approach to Nature in the Global South, and a more traditional science-focused approach to the environment in the Global North.

1. The need for a new environmental legal paradigm, based on an ecosystem approach

The attention paid by Earth and Environmental Science scholars to the limits of human exploitation of natural resources while respecting the cycles of regeneration, is certainly not a new fact. Reconstructing historically the concept of 'sustainability', Ulrich Grober recalls how the term was scientifically used for the first time by Hans Carl von Carlowitz in his treatise *Sylvicultura oeconomica* in 1713.¹

Looking for traces of an ecosystem approach to the history of law, Michele Carducci went even further back in time, to the Iroquois' Constitution, probably dating from the 11th century, and to the Forest Charter of 1217.² The international community already began to question the sustainability of our model of economic development and lifestyle during the 1972 United Nations Conference on the Human Environment, after a report commissioned by the *Club di Roma* on the limits of growth.³ Both the report and the event represented a turning point in the development of international environmental law, which is built on the assumption of the need to place 'limits' on human action in order to curb its negative impact on the environment. However, the legal value protected by those limits is 'development', firstly understood as economic growth, then as 'sustainable development', where economic growth must take place by ensuring minimum parameters of environmental and social protection, subsequently supplemented by guarantees of human development, also conceived as cultural growth.⁴ In this context, Nature and ecosystems are considered as objects or resources; or rather, they are seen as interests that are opposed to human ones. Not unsurprisingly, both in the definition of sustainable development and in the attribution to the law, the word used is 'environment', a concept indicating a container, a physical location, and what surrounds an organism in a given time and space.⁵

However, the value that should be protected is another one, namely 'the preservation of the integrity of ecological systems'.⁶ The integrity of ES is a precondition for our survival as a species. It derives from the interaction of a complex system of factors and processes. The Planetary Boundaries framework (PB)⁷ has identified nine of these as essential to maintaining the system in equilibrium, i.e., in the state that defines the Holocene, the geological era characterized by the development of the human species on the planet. The PB framework defines a safe operating space for humanity: through a double system of thresholds, with respect to control variables for each process, a safe area is identified, within which the current conditions of life can

¹ Ulrich Grober, *Sustainability: A Cultural History* (Green Books 2012) 88.

² Michele Carducci, 'The premises of 'constitutional ecology'' (2020) *Veredas do Direito* 17(1), 89, 96.

³ Donella H. Meadows, Dennis L. Meadows, Jørgen Randers, William W. Behrens III, *The Limits to Growth* (Club of Rome 1972).

⁴ Klaus Bosselman, 'Shifting the Legal Paradigm: Earth-centred Law and Governance' in Paulo Magalhes, Will Steffen, Klaus Bosselmann, Alexandra Arago, Viriato Soromenho Marques (eds), *The Safe Operating Space Treaty: A New Approach to Managing Our Use of the Earth system* (Cambridge Scholars Publishing 2016) 66.

⁵ Thomas M. Smith, Robert L. Smith, *Elements of Ecology* (9th edn, Pearson 2015).

⁶ Bosselman (n 1) 75.

⁷ Johan Rockström et al, 'A Safe Operating Space for Humanity' (2009) 461 *Nature* 472.

be maintained; an area where the stability of the system is put at risk by exceeding the first threshold of the variable; and finally, a third level, beyond which an irreversible compromise of the system takes place and we enter a situation of total uncertainty about the future, with high probability that the living conditions on the planet will be much less hospitable for our species. This framework was updated in 2015, introducing, among other things, a hierarchy among the parameters: climate change and biosphere integrity interact with all the others and are in themselves sufficient to determine a crisis of the system as a whole, so they have been defined the ‘core planetary boundaries’.⁸

The PB framework itself is not without criticisms and limitations.⁹ It is one of the possible ways of measuring the health of ES; one of the possible expressions of the ecosystem approach¹⁰ to global environmental governance, which must be adapted according to the spatial and temporal contexts that are appropriate at any specific moment. ‘How to downscaling the PL framework at national and local level, that means also how to allocate shares of responsibilities among States and non-State actors seems to be one of the most urgent topic to tackle’.¹¹

The inability of the current system of environmental law to offer solutions to the environmental, climate and energy crisis we are facing at a global level¹² is denounced by the doctrine¹³ and more or less explicitly recognized at different institutional levels, starting from the United Nations.¹⁴

From a legal point of view, most policymakers and lawyers believe that it is sufficient to remedy the implementation flaws of current environmental law¹⁵. On the other hand, those who take up the challenge of the radical transformation of thought and society, aim, instead, at a change in the environmental legal paradigm, inspired by the natural rules that govern ecosystems and by old traditions that have remained faithful to those rules¹⁶. It is therefore a transformation of the legal paradigm¹⁷, based on an ecosystem approach¹⁸; from a constitutional perspective, it is an ecological conversion, aiming to overcome a law originally based on the exploitation of fossil fuels.

⁸ Will Steffen et al., ‘Planetary boundaries: Guiding human development on a changing planet’ (2015) 347 *Science*, 736, 743.

⁹ Rakhyun E. Kim, Luis J. Kotzé, ‘Planetary boundaries at the intersection of Earth system law, science and governance: A state-of-the-art review’ [2020] *RECIEL* 1.

¹⁰ Laura Padovani, Paola Carrabba, Francesco Mauro, ‘L’approccio ecosistemico: una proposta innovativa per la gestione della biodiversità e del territorio’ (2003) *Energia, Ambiente e Innovazione* 1/03, 23.

¹¹ Kim, Kotzé (n 9) 9.

¹² <https://www.scientistswarning.org>.

¹³ References in Luis J. Kotzé, ‘Earth system Law for the Anthropocene’ (2019) *Sustainability* 11, 6796.

¹⁴ In December 2009, the UN General Assembly adopted its first Resolution on Harmony with Nature (A/RES/64/196) and the Harmony with Nature Initiative (now Programme) was created: «Since 2009, the aim of the General Assembly, in adopting its nine resolutions on Harmony with Nature, has been to define this newly found relationship based on a non-anthropocentric relationship with Nature».

¹⁵ Better implementation of legislation was considered among the ‘enablers’ that would have helped Europe to deliver the goals of the EU 7th EAP. In 2017, the EU implemented the Environmental Implementation Review (EIR)(COM(2016) 316 final) (https://ec.europa.eu/environment/legal/implementation_en.htm).

¹⁶ Silvia Bagni, ‘Back to the future: building harmony with nature in the European Union by learning from our ancestors’, in Serena Baldin, Sara De Vido, *Environmental Sustainability in the European Union: Socio-Legal Perspectives* (Edizioni Università di Trieste 2020) 77.

¹⁷ Kotzé (n 13).

¹⁸ A definition of ‘ecosystem approach’ has already been formulated in Annex A of the Report of the fifth meeting of the Conference of the Parties to the Convention on Biological Diversity (UNEP/CBD/COP/5/23) del 2000: ‘An ecosystem approach is based on the application of appropriate scientific methodologies focused on levels of biological organization, which encompass the essential structure, processes, functions and interactions among organisms and their environment’ (p. 104).

Kim and Bosselmann propose considering the protection and restoration of the integrity of Earth's life-support system 'as a potential Grundnorm or goal of international environmental law'.¹⁹ The 'or', however, is confusing from the perspective of general legal theory. As Schmidt notes,²⁰ the protection of ES is a goal, from which to extrapolate a new Grundnorm, as a criterion of validity of the system's sources of production. The validity of norms no longer coincides with compliance with internationally assumed constraints, but with their conformity to the 'natural' rules that guarantee the stability of the ES.²¹ The parameters of validity are contained in the PB framework.

Kotzé proposes the concept of Earth Law: 'The concept of earth law has not fully developed in the literature. We conceptualize earth law as founded on the recognition that, in the Anthropocene, the Earth is a human-dominated, deeply intertwined, social-ecological system. It is Earth-centred, in the sense that it considers neither humanity nor nature as a central reference point, but rather the entire community of life as the central fulcrum around which it revolves'.²²

Earth Law (EL) differs from the current environmental paradigm in two respects. It has a new object: ecosystems; it has a new geographical dimension of jurisdiction: planetary, and not dominated by the sovereignty of states. The main characteristics of EL can be summarised as follows: inclusivity, i.e. the recognition of the multiplicity of subjects interacting in the ES, without a hierarchical organisation (and from which, in some legal systems, the recognition of the rights of Nature derives); interdependency, i.e. the recognition of the relationship of interdependence between man and the other natural elements and of the importance of intra-species, inter-species and inter-generational relations, which is manifested in a spatial dimension – being distinct from that assumed by the current Western legal system, which is limited by the sovereignty of its countries; complexity, i.e., an awareness of the complicated systems of feedback loops affecting natural ecosystemic processes, which implies a holistic and non-sectoral legal approach to environmental and climate problems, so law becomes adaptive, governed by flexibility rather than rigidity.²³

Carducci introduces the concept of 'constitutional ecology', featuring a 'reconsideration of the structure not only of legal concepts and categories (remodelling them according to ecological 'conversion' and 'transition'), but also, and above all, of the type of rules ('primary' or 'secondary') that govern the organisation of power, the distribution of competences, the recognition of freedoms and the definition of duties, on the basis of an ecosystem approach to existence'.²⁴

Gudynas, analysing Ecuador's new Constitution of 2008, spoke of an 'ecological mandate', i.e. the reorientation of its values and norms in the light of the recognition of an intrinsic value to Nature.²⁵

All the proposals described above can be perfectly integrated with each other, having, as a common element, the application of an ecosystem approach, both at national and international level. Although this change of legal paradigm has not yet found full expression in any legal system in the world, traces of ecosystem legal thinking can be discerned in the active legal formants of various countries (§ 2). The aim of this chapter is to describe and compare the transposition of the ecosystem approach, especially in case law. At the moment, it is expressed in two ways: the recognition of rights to Nature (§ 3) and the claim of a right to a stable climate (§ 4). In conclusion, we will try to highlight the similarities and differences between the two solutions, especially in the light of the cultural context of reference (§ 5).

2. Introducing the ecosystem approach in legal formants

¹⁹ Rakhyun E. Kim, Klauss Bosselmann, 'International environmental law in the Anthropocene: Towards a purposive system of multilateral environmental agreements' (2013) 2 *Transnational Environmental Law* 285, 305.

²⁰ Jeremy J. Schmidt, 'The moral geography of the Earth system', (2019) 44 *Trans Inst Br Geogr* 721, 728.

²¹ Annex 11, Michele Carducci et al., *Towards an EU Charter of the Fundamental Rights of Nature. Study* (European Economic and Social Committee 2020) 170 ff.

²² Luis J. Kotzé, Rakhyun E. Kim, 'Earth system law: The juridical dimensions of Earth system Governance' [2019] *Earth system Governance*, 1, 7.

²³ Kotzé (n 13).

²⁴ Carducci (n 2) 108.

²⁵ Eduardo Gudynas, *El mandato ecológico. Derechos de la Naturaleza y políticas ambientales en la nueva Constitución* (AbyaYala, 2009); *ibid.*, *Derechos de la Naturaleza. Ética biocéntrica y políticas ambientales* (1st edn, Plural 2014).

Science reminds us and admonishes us that life on our planet, as we know it today, depends on the ES balance, which, in turn, is influenced by many interconnected factors (e.g., those identified in the PB framework).

At an international level, there is currently no binding document that specifically commits the community of states to this end. Instead, there is a binding sectoral approach, focused on the protection of the two core parameters within the PB framework, namely limits to climate change and the safeguarding of biodiversity. From the preamble and some provisions of the UN Framework Convention on Climate Change (UNFCCC) and the Convention on Biological Diversity, it is clear that their aim is to maintain the ES²⁶. These documents can therefore be considered the precursors of ES Law or the ecosystem approach.

In the absence of a guarantee body, however, such as a Green Authority or International Earth Tribunal, the defence of ES is delegated to national jurisdictions through the constitutionalisation of international law. However, this guarantee solution remains difficult to apply. The treaties mentioned oblige States, not citizens. To derive from these treaties a right (whether human or constitutional) directly invocable by an individual remains a complex and ambitious interpretative operation. Moreover, even in systems where international law is considered as a parameter of normative constitutionality, the scope of actionability is linked to the specific system of judicial review implemented by each country.

Another problem to be addressed for the national implementation of the ES approach is the difficulty of scaling down the PB framework. The proposal adopts a bottoms-up regulatory perspective, but the methodology needed to understand the overall impact of policies and actions implemented by a single country on its territory, or with respect to a single ecosystem, remains totally unexplored. Moreover, even a top-down regulatory framework would struggle to assign shares of responsibility for each boundary to individual countries. The ecosystem approach provides the guiding principles for building ES law at both international and local levels when considered as autonomous systems; however, the scientific methodology for analysing feedback loops, and thus validating local action on a global scale, remains uncertain.

This problem is circumvented by systems that base the application of the ecosystem approach on cultural rather than scientific grounds. In fact, the ecological mandate integrates this gap through the precautionary principle (interpreted, however, in an autonomous way with respect to that commonly applied in environmental law²⁷) and the principle *in dubio pro natura et clima*²⁸.

At present, there are basically two ways forward at a national level that are consistent with the implementation of an ES Law: the recognition of Nature or of its constituent elements as a subject of rights and the claim of a (human or constitutional) right to a stable climate, capable of ensuring our survival on the planet. Both of these, although in different ways, are based on the concept of 'right', to establish the existence of a 'duty' for the state to act.

It is important to clarify in what terms, and in which cases, Nature, as a subject of rights, is a legal manifestation of the ecosystem approach. It is not simply a matter of expanding the range of subjects of rights. For this reason, the attribution of rights to animals is not necessarily an expression of the ecosystem approach. It comes with the legal recognition of the existence of interaction between humans, other living beings and the abiotic elements of the environment in which we live. This happens when rights are granted to Nature as an Earth System, or as a particular ecosystem (a *paramo*, a river basin, the Amazon...), whose rights aim to guarantee regeneration, the permanence of its state of equilibrium and resilience, i.e., the ability to restore the equilibrium in the face of disturbances. The legal protection of an individual animal or species can be a tool in the service of implementing an ecosystem approach, when it aims to guarantee biodiversity, or defends the relationship between an individual member of a species and other species.

The second approach is the judicial affirmation of a human right to a stable climate.

Carducci points out that under this label one can 'include everything'²⁹: it is sufficient that the cause has a *de facto* link with anthropogenic climate change in its object, claim or parameter. Instead, only those lawsuits that pursue 'climate justice' are an expression of the ecosystem approach. These lawsuits look at climate-altering

²⁶ See Michele Carducci, 'La ricerca dei caratteri differenziali della 'giustizia climatica'', (2020) 2 DPCE Online 1345, 1361 ss.

²⁷ Olivia Woolley, 'What would ecological climate change law look like? Developing a method for analysing the international climate change regime from an ecological perspective' (2020) 29 RECIEL 76, 81.

²⁸ Carducci et al. (n 21).

²⁹ Carducci (n 27) 1355.

emissions produced by human activity as a global problem, impacting on the stability of the ES, and thus put on trial the responsibilities of countries (and corporations) to keep climate change below the danger threshold established by the PB framework. ‘The law on the ‘climate-altering legal relationship’ is therefore a normative system of prevention from the threats of climate change, to the benefit of present and future human security’.³⁰ It is claimed as a human right, but it concerns the species and the biotic community.³¹ It is this supra-individual dimension that expresses the ecosystem approach, so that only cases where action is presented in these terms fall within the scope of our study.

3. Comparing the two pathways of case-law: Nature’s Rights approach

The first line of jurisprudence decisions incorporating arguments based on an environmental ecosystem approach is that in which the Courts recognise natural elements as having legal subjectivity, responding to claims by individual citizens, communities or environmental associations against State authorities, in which they denounce the state of serious vulnerability of particular ecosystems, due to the excessive and unregulated exploitation of natural resources.

The richest jurisprudence in this field is the Colombian one, analysed in ch. 3 of this book’s section, so I will only mention some of the arguments used by judges, which are useful for comparison. In judgment T-622 of 10 November 2016, the Colombian Constitutional Court acknowledges that there are several possible interpretations of the environmental guarantees in the Constitution: anthropocentric, biocentric and ecocentric (§ 5.6 ff.). The judge recognises that the ecocentric perspective is fully grounded in the Colombian Constitution and goes so far as to link this interpretation to the constitutional recognition of cultural pluralism.

The judge also analyses the precautionary principle, from which he derives, in an apparently consequential way, the principle *in dubio pro natura*, as representing one of the core interpretative criteria of ES law (§ 7.39). In fact, the two principles operate on different levels, so that, once again, the judge’s argumentation goes far beyond the scope of current environmental law.

In STC 4360/2018, 5 April, the Colombian Supreme Court of Justice frames the problem of Amazon deforestation in a global ‘anthropocentric and egoistical’ lifestyle model and denounces the need for a shift from an anthropocentric view of environmental rights to an ‘anthropocentric ecocentric’ one (§§ 4-5).

The core reasoning of the motivation here is the principle of solidarity, which is expanded to encompass all of humanity and Nature. The cornerstones of this view are intra-species solidarity and the recognition of an intrinsic value to Nature.

The conclusions follow from the application of the principles of precaution, intergenerational equality and solidarity: with the first, the danger of damage is accepted; with the second, it is accepted that the rights of future generations may be violated; with the third, the omissive responsibility of the State is established.

After these two fundamental judgments, many Colombian judges at all levels have recognised rivers and ecosystems as subjects of law, recalling the jurisprudence commented on above.

A further potential of the ecosystem approach can be appreciated in the recognition of the territory of the Awá people as a ‘*víctima del conflicto armado*’ by the *Jurisdicción especial para la Paz* (JEP) in case 02, opened on 10 July, 2018.³² This declaration is based on a cross-cultural interpretation of the concept of victim, through the analysis of the Awá cosmovision, according to which these people belong to ‘Katsa Su’, Mother Earth, who, in turn, is alive, the source of *buen vivir* and the home of the Awá people.

In India, two Writ Petitions (PILs) are relevant: No.126 of 2014, sent. 20 March 2017 and No.140 of 2015, sent. 30 March 2017, decided by the Supreme Court of Uttarakhand, which granted legal status to the Ganges and Yamuna rivers and their respective source glaciers.

In the first judgment, although the starting point is anthropocentric, the justification that the Court puts forward has cultural and ecosystemic elements. The Court recognises that the Hindu population is deeply connected with the rivers, which have provided half of India’s population with physical and spiritual sustenance since time immemorial. They ensure the physical and spiritual well-being of the communities they flow through, from the mountains to the sea. They are defined as living and breathing entities.

³⁰ Ibid. 1365.

³¹ This highlights the ambiguity of the concept of ‘human right’, strategically used, in this case, for the protection of an asset that goes beyond the human.

³² Case 02 del 2018, Auto SRVBIT – 079, 12 November 2019.

In the second judgment, the Court dwells in much greater detail on the ecosystemic relationship between Man and Nature, on which the jurisprudence concerning the rights of Nature is based.

The ecological aspect here is elevated above the cultural one, which is present in the references to the veneration of trees, as symbols of deities, in both Hindu religion and Buddhist philosophy. The Court openly declares its adherence to the new philosophy of the Earth: 'The Courts are duty bound to protect the environmental ecology under the 'New Environment Justice Jurisprudence''. The Court's activism is stated: 'Besides our constitutional and legal duties, it is our moral duty to protect the environment and ecology'. It not only recognises that rivers and lakes have an intrinsic right not to be polluted, but also equates harm to the person and harm to nature ('Polluting and damaging the rivers, forests, lakes, water bodies, air and glaciers will be legally equivalent to harming, hurting and causing injury to persons'). Finally, the statute of rights recognised to natural entities follows, almost to the letter, the Ecuadorian art. 71 const.: 'Rivers, Forests, Lakes, Water Bodies, Air, Glaciers and Springs have a right to exist, persist, maintain, sustain and regenerate their own vital ecology system. The rivers are not just water bodies. These are scientifically and biologically living' and shortly afterwards 'We must recognise and bestow Constitutional legal rights to the 'Mother Earth''. After all, the Ganges River is worshipped by Hindus as 'Ganga Mata', or Mother Ganga.

In the judgment, we also find a very brief mention of the rights of the new generations ('Past generations have handed over 'Mother Earth' to us in her pristine glory and we are morally bound to hand over the same Mother Earth to the next generation').

The two abovementioned judgments have been challenged in the Supreme Court of India, which **stayed the High Court orders** on 7 July 2017, on the grounds of motives that oppose the ecosystem approach adopted by the Uttarakhand Supreme Court.

Recently, the High Court of Punjab and Haryana, in case *CWP No.18253 of 2009 & other connected petitions*, delivered on 2 March 2020, declared Sukhna Lake as a legal entity for its survival, preservation and conservation. All the citizens of U.T. Chandigarh have been declared *loco parentis* as the human face to save Sukhna Lake from extinction, on the basis of the powers that the Court can exercise as *parens patriae*. The lake had long been suffering from phenomena of water degradation (aquatic weeds), soil degradation (siltation), riparian fauna and flora, due to the partly illegal constructions carried out in the area surrounding the lake.

The Court recalls the existence of a duty of Government and Court to protect the environment, based on the doctrine of public trust. In the Supreme Court precedents that are recalled, this doctrine is based on scientific and bibliographical reasoning of an ecological nature, as well as on an ecosystemic interpretation of Article 21 of the Indian Constitution on the right to life. The lake is considered an ecosystem, whose untimely extinction must be prevented. The Courts are duty bound to protect the environmental ecology under the 'New Environment Justice Jurisprudence' and also under the principles of *parens patriae*.

The judge, however, also connects the legal duty to *lato sensu* cultural arguments: 'Besides our constitutional and legal duties, it is our moral duty to protect the environment and ecology', so much so that the very long pronouncement closes with the phrase 'In holy Guru Granth Sahebji, it is written that '*Pavan paani dharati aakas ghar mandar har bani*', (Air, water, earth and sky are God's home and temple), showing the pluralistic and inter-legal nature of the Indian legal system, based on precedents, but also on customs and local traditions. On 30 January 2019 (Writ Petition No. 13989/2016), the High Court of Bangladesh recognised the Turag River as a living entity, with a view to extending this status to all rivers in the country.

4. Comparing the two pathways of case-law: the right to a climate system capable of sustaining human life

The second pathway that takes an ecosystem approach is promoted from below, by environmental movements, individual citizens or vulnerable groups, who claim in national courts a constitutional or human right to a stable climate. This right should be matched by an obligation on the part of the State to implement adequate plans and programmes to reduce or eliminate greenhouse gas emissions, in accordance with the most recent scientific findings available, in order to prevent the so-called *tipping points* from being exceeded³³ within the parameters of ecological homeostasis.

There are now a large number of climate cases being promoted or pending around the world³⁴, but rarely do the courts go so far as to use arguments based on an ecosystem approach.

³³ 5th IPCC Report (AR5 2013-14).

³⁴ <http://climatecasechart.com>.

4.1. The 'explicit' ecosystem approach

In a few cases, judges have grasped the revolutionary scope of the recognition of a right to a stable climate, accepting the challenge of discussing its basis and arguing the merits of its implications for the legal system, with different outcomes on a case-by-case basis.

The US Juliana case is an example, brought in 2015 in the District Court of Oregon, Eugene division. The applicants filed a 'complaint for declaratory and injunctive relief' based on a 'Constitutional Rights and Public Trust Action' against the US Government, a number of federal departments and the Environmental Protection Agency (EPA). The applicants denounced the illegality of the government's climate policy, which, through its actions and omissions, has contributed over the years to an increase in concentrations of greenhouse gases in the atmosphere and has not taken necessary and sufficient measures to combat climate change, thus violating the Fifth Amendment and their rights to life, liberty, and property, which are formulated as a precondition to the existence of a stable climate system. The U.S. Court of Appeals for the 9th Circuit denied them standing to proceed on the merits in an opinion filed on January 17, 2020.

The case is currently pending. The interlocutory rulings of Judge Aiken of the U.S. District Court, denying the motions to dismiss brought by the Government and some private interveners, as well as the Court of Appeal's own opinion, contain fundamental arguments based on the ecosystem approach.

In her opinion and order of 10 November 2016 (Case No. 6:15-cv-01517-TC), Judge Aiken considers both climate change and its anthropogenic origin as a proven fact. She recalls how unenumerated fundamental rights can also be identified. Citing Supreme Court case law (*Obergefell v. Hodges*, 135 S. Ct. 2584, 2598 (2015)), 'In determining whether a right is fundamental, courts must exercise 'reasoned judgment,' [...] The idea is that certain rights may be necessary to enable the exercise of other rights, whether enumerated or unenumerated' (p. 31). It is at this point that the judge espouses the ecosystem approach proposed by the applicants: 'Exercising my 'reasoned judgment,' id at 2598, I have no doubt that the right to a climate system capable of sustaining human life is fundamental to a free and ordered society [...] Echoing *Obergefell's* reasoning, plaintiffs allege a stable climate system is a necessary condition to exercising other rights to life, liberty, and property' (p. 32).

Also from a procedural point of view, standing is acknowledged on the basis of the ecosystem approach, since, alongside the direct and immediate harm to the young plaintiffs' lives, Judge Aiken recalls how the preamble of the US Constitution ascribes constitutional rights also to 'posterity'. The issue of the rights of future generations is connected to the public trust doctrine, which is also used to establish the existence of a state duty to protect its citizens from climate change. This doctrine has enormous ecological potential, as the trustee's fiduciary duty includes the preservation of the **future generations' rights** and allows for a judicial review of the trustee's actions or omissions.

In the appeal opinion of 17 January 2020, the majority of the Court 'reluctantly' denied standing to the young plaintiffs, concluding that 'the plaintiffs' case must be made to the political branches or the electorate at large'. In this opinion, the claim of a right under the Due Process Clause of the Fifth Amendment to a 'climate system capable of sustaining human life' becomes even more central. Indeed, although the action is dismissed on procedural grounds, the Court reasons hypothetically, 'assuming such a broad constitutional right exists'. The Court, therefore, does not close the door on the recognition of the right, but doubts its power to remedy its violation in the present case.

In her dissenting opinion, Justice Staton dwells on the nature of the right invoked. In particular, she frames the right to a habitable United States in the light of the perpetuity principle, i.e., the need to defend the Nation from destruction, 'to secure 'the Blessings of Liberty' not just for one generation, but for all future generations – our 'Posterity''.

In Nepal, the Supreme Court, Division Bench, in the case of *Advocate Padam Bahadur Shrestha*, Decision no. 10210, dated 25 December 2018³⁵ issued a writ of *mandamus* against the Nepalese Government to take the necessary steps to implement the existing measures for environmental protection and combating climate change.

The Court defines as 'imperative' the adoption of a law that effectively applies an ecosystem approach to the problem of climate change, with a view to achieving 'climate justice': 'It is necessary to do a moral, balanced, and responsible usage of the ecological resources that sustain humans and the lives of other species.' (§ 4). The obligation to act derives from the *parens patriae* principle, as the threat that climate change poses to

³⁵ Order 074-WO-0283 published in: NKP, Part 61, Vol. 3.

humans, other living beings and the planet's ecosystems is of public interest: 'Climate change has not only affected human lives but all plants and animal species, their habitats and created an imbalance in ecology and biodiversity, therefore making it a matter of public concern'. Therefore, while carrying out any activity relating to climate change, it should embrace the principle of climate justice. [...] If only we embrace the principles of sustainable development and allied principles of inter-generational and intra-generational equality, and formulate a law to conserve biodiversity and the ecosystem, we can establish an edifice of climate justice for present and future generations' (§ 2).

In Ireland, in the case *Friends of the Irish Environment Clg v. The Government of Ireland, Ireland and the Attorney General*³⁶, the High Court recently refused to sanction the Irish Government for the alleged insufficiency and inadequacy of the strategies and programmes it adopted in the fight against climate change. However, it left open the question of the constitutionality of the challenged law. In its reasoning it hypothetically admits the existence of an 'unenumerated right to an environment consistent with human dignity'. This formula recalls the ecosystem approach, while being constructed on the parameter of human dignity. In fact, the Court recognises that this right is a prerequisite for any other human right, therefore, both an individual and global right, belonging to the individual and the species, with a perhaps broader scope: 'is it a civil right of humans or does it extend to animals and ecosystems?' (p. 254).

In *Mathur v. Ontario*,³⁷ the Superior Court of Justice of Ontario must judge an Application brought by a group of Ontario residents between the ages of 12 and 24, to challenge Ontario's cancellation of the *Climate Change Mitigation and Low-carbon Economy Act, 2016, S.O. 2016, c. 7* ('Climate Change Act'). The Applicants submit that Ontario's target is insufficiently ambitious, and that Ontario's failure to set a more stringent target and a more exacting plan for combating climate change over the coming decade infringes the constitutional rights of youth and future generations (§ 2).

The issue of the existence of a right to climate protection is addressed on the basis of s. 7 of the Charter. Although this provision has never been used to establish a duty of the State to positively guarantee a right, it considers that such an interpretative conclusion is by no means precluded.³⁸ The Court states that '[233] To date, no Charter cases have arisen in the context of a positive constitutional obligation on the state to provide a stable climate system. However, as Rennie J.A. noted in *Kreishan*, cited above, s. 7 jurisprudence may someday evolve to encompass positive obligations in the domain of climate rights.' Finally, in justifying standing on behalf of future generations, the court states not only that the case is of constitutional significance, but also that it is a case 'of public interest, in that it transcends the interests of all Ontario residents, not just the Applicants' generation or the ones that follow', thus using an ecosystemic argument, which recognises the universal scope of the right claimed.

4.2. The 'implicit' ecosystem approach

In other cases, the judgement does not focus on the existence of a right to a stable climate. However, in their reasoning, judges use arguments more or less directly based on the ecosystem approach: the principle of solidarity; protection of future generations; the public trust doctrine; *parens patriae*; the principle of shared responsibility.

In Norway, case 18-060499ASD-BORG/03, brought before the Borgarting Court of Appeal against the Norwegian Government, is a judgment of unconstitutionality against a measure to grant ten production licences for oil exploration and extraction in the Barents Sea, for a total of 40 blocks or sub-blocks.³⁹

While rejecting the appeal, the decision is significant in that it gives for the first time an interpretation of Article 112 of the Constitution, according to which the law is considered not only as a source of obligation for the State, but also as a positive right for citizens. The first paragraph defines the environment not only in terms of the individual right to human health, but also in ecosystemic terms, affirming the need to ensure the productivity and diversity of the natural environment through the management of resources, based on long-term considerations, i.e., capable of ensuring rights also for future generations.

³⁶ [2019] IEHC 747 The High Court Judicial Review [2017 No. 793 JR], Judgment of Mr. Justice MacGrath delivered on the 19th day of September, 2019.

³⁷ *Mathur v. Ontario* 2020 ONSC 6918.

³⁸ <https://www.justice.gc.ca/eng/csj-sjc/rfc-dlc/ccrf-ccd1/check/art7.html>.

³⁹ At the time of writing, the case is pending before the Supreme Court.

It is precisely because of the ‘pre-conditional’ nature of climate change with respect to the survival of humanity on the planet that the Court considers judicial review of government decisions to be even more necessary. However, according to the Court, guaranteeing that right means identifying a threshold to be set as a limit to the Executive’s discretion, rather than applying a set of guiding principles corresponding to the ecological mandate.

The Court notes that, with regard to greenhouse gas emissions, a guarantee of the right recognised by Article 112 would imply an integrated assessment of the different sources of damage production in various sectors (oil activity but also other industrial and non-industrial sectors) and at various levels (local, national, global).⁴⁰ This approach is also justified by the constitutional reference to future generations, which can only be guaranteed by an ecosystem approach. However, the scope of the reasoning is again narrowed, in light of the wide margin of appreciation that the *Storting* and the Government enjoy in defining the priorities to be pursued in the competition between different rights and interests.

Finally, the Court assesses the extension of the climatic impact beyond Norwegian territory. It first recalls the ‘no harm principle’ of international law and then states that assessing environmental harm beyond a country’s boundaries is an expression of a solidarity principle. ‘This involves, in the same way as the principle regarding solidarity across generations, a moral principle that can have major significance in the work on reducing climate changes’ (p. 22).

The Norwegian Supreme Court confirmed the legitimacy of the licensing measure on 22 December 2020, with a motivation that removed any trace of an ecosystem approach, even downgrading the very nature of Article 112 Const.

The first case, now universally known, in which the courts have recognised a responsibility of the State for the inadequacy of its policies to combat climate change, with reference to greenhouse gas emissions into the atmosphere, is the Dutch *Urgenda case*.

The anthropogenic origin of climate change, as well as the risks at a global level related to the inaction of States in taking drastic measures to limit the emission of climate-altering gases into the atmosphere, are extensively described by the appellant through scientific documentary evidence (primarily the IPCC Reports). In its first instance judgement of 24 June 2015, the District Court interprets the Dutch Article 3030 of the Civil Code, invoked to define *Urgenda*’s standing, in an ecosystemic way. The defence of a ‘sustainable society’ has, in fact, an inherent international (and global) dimension, as well as an intergenerational dimension, i.e., the protection of future generations.

On the merits, the Court states that ‘Article 21 of the Dutch Constitution imposes a duty of care on the State relating to the liveability of the country and the protection and improvement of the living environment’, even though it recognises the wide discretion of the State in the choice of measures to be adopted to realise this obligation.

The Court states that ‘It is an established fact that climate change is a global problem and therefore requires global accountability’, so each State has both an individual and a collective responsibility.⁴¹ On appeal and in cassation, however, the violation of the duty of care is traced back to the violation of human rights under Articles 2 and 8 of the European Convention of Human Rights (ECHR).

In the *La Rose case* (*La Rose v. Canada*, 2020 FC 1008, released on October 27, 2020) 15 children and youth from across Canada filed a Statement of Claim on October 25, 2019, alleging that various conduct on the part of the Canadian State continues to cause, contribute to and allow GHG emissions that are incompatible with a ‘Stable Climate System’. They define it as a ‘stable climate capable of sustaining human life and liberties.’ They allege the infringement of their constitutional rights under ss 7 and 15 of the Canadian Charter of rights, and they argue a breach of obligations they claim fall under the ‘public trust doctrine’.

The Federal Court, deciding a motion to strike submitted by the Government, considers Charter claims not justiciable. However, the non-justiciability of the case derives neither from the complexity of the issue, nor its novelty or the nature of the subject-matter of the appeal, but from procedural grounds.

⁴⁰ Vito De Lucia, Ingrid Solstad Andreassen, ‘Climate Litigation in Norway. A Preliminary Assessment’ (2020) 2 DPCE Online 1405, 1414.

⁴¹ ‘The court arrives at the opinion that the single circumstance that the Dutch emissions only constitute a minor contribution to global emissions does not alter the State’s obligation to exercise care towards third parties’ (§ 4.79).

The Court analyses the arguments in favour of recognising a violation of the rights invoked. With respect to s. 7, it states that case-law has not closed the door to the possibility of interpreting the Charter as a source of positive obligations on the part of the State to guarantee particular rights.

In New Zealand, in *Sarah Thomson v. The Minister for Climate Change Issues* [2017] NZHC 733, the High Court of New Zealand confirms the justiciability of climate change-related measures, based on a comparative analysis of other similar cases around the world, including the *Urgenda* case itself, stating that all Courts, except Canada, ultimately came to the same conclusion, recognising ‘the significance of the issue for the planet and its inhabitants’ (§ 133).

On 3 February 2021, the Paris Administrative Court held the French State partly responsible for the worsening of the ecological damage caused by anthropogenic emissions of climate-changing gases, due to the inadequacy of the results obtained in implementing the commitments to reduce greenhouse gas emissions made at international, European and national level (the *Notre Affaire à Tous* case). This, the most recent case to be decided in favour of recognising State liability for climate damage, is perhaps the least significant in terms of recognising a right to a stable climate. In fact, the plaintiffs’ accusation is based on the State’s civil liability for ‘ecological damage’, defined as ‘*une atteinte non négligeable aux éléments ou aux fonctions des écosystèmes ou aux bénéfices collectifs tirés par l’homme de l’environnement*’. It is therefore the French legislator who has applied an ecosystem approach to the definition of damage: through the disjunctive in the wording of the article, ecosystems are among the goods that are directly damaged; in addition to man, who is impaired in his perception of the services produced in his favour by nature. We are not discussing the rights of Man, much less of nature; the ecosystem approach is upstream, in the definition of damage. Neither the global dimension of the problem, nor the network of feedback loops feeding it, come into question. What matters is formal respect for the availability quota of the asset protected by the law (the ecosystem functions of the environment), which is affected if the threat is ‘not negligible’.

5. Conclusions: an intercultural interpretation of the ecosystem approach in legal science

The comparison between the two development paths of an ES Law leads us to highlight common elements and many different characteristics.

In all the cases examined, the Courts have accepted climate change and its anthropogenic causes as a judicially proven fact, on the basis of the scientific allegations produced by the parties. The climate and environmental crisis is therefore a judicially established fact and represents the precondition for the development of ecosystem thinking⁴². In return, the so-called ‘reservation of science’, i.e., the judge’s use of scientific data (e.g., the PB framework) as an objective limit to the decision-making and interpretative discretion of the authorities and private persons⁴³ is still an exception, currently only applied in the *Urgenda* and *Notre Affaire à Tous* cases. Following the *Urgenda* and *Juliana* cases, many other similar cases have been brought before national courts around the world⁴⁴. This atypical form of circulation of the ‘precedent’ is testified by explicit reference, at least in the *Urgenda* case, within some of the pronouncements we have analysed (the *Sarah Thomson* case in New Zealand; the Irish case *Friends of the Irish Environment Clg*; the Norwegian case 18-060499ASD-BORG/03). As for the pronouncements that have recognised natural elements as subjects of law, there has been a strong adherence to the two precedents by the lower Colombian courts, and wide intra-continental circulation among

⁴² Recognition of the environmental and climate crisis as a proven fact does not, however, equate to recognition of the state's obligations or duties towards its citizens; nor of a right to a stable climate; nature's own rights; the existence of a causal link between that situation and state environmental and climate policies; ecological damage. All these situations and legal relationships remain to be proven, as attested by the different solutions arrived at by the courts in the cases analysed.

⁴³ Cfr. Carducci (n 27) 1363 and ‘Contenzioso climatico, illecito civile, termodinamica’ laCostituzione.info (2021) <[http://www.lacostituzione.info/index.php/2021/02/08/contenzioso-climatico-illecito-civile-termodinamica/?utm_source=feedburner&utm_medium=email&utm_campaign=Feed:+LaCostituzi onePuntoInfo+\(La+Costituzione.info\)](http://www.lacostituzione.info/index.php/2021/02/08/contenzioso-climatico-illecito-civile-termodinamica/?utm_source=feedburner&utm_medium=email&utm_campaign=Feed:+LaCostituzi onePuntoInfo+(La+Costituzione.info))> accessed 26 March 2021.

⁴⁴ Hillary Aidun, Malia Libby, ‘Juliana In The World: Comparing The Ninth Circuit’s Decision To Foreign Rights-based Climate Litigation’ (2020) <<http://blogs.law.columbia.edu/climatechange/2020/03/13/juliana-in-the-world-comparing-the-ninth-circuits-decision-to-foreign-rights-based-climate-litigation/>> accessed 26 March 2021.

Latin American countries. On the other hand, Indian cases do not recall the Colombian ones, and vice versa, probably because the language problem becomes a strongly inhibiting obstacle.

Finally, there is no cross-fertilization between the **two different jurisprudences**: judges do not seem to consider that the two different solutions adopted derive from the same ecosystem approach to law, although the arguments recalled tend to overlap. In particular, the Courts that have ruled on the legal personality of Nature use arguments such as the rights of future generations, the precautionary principle, the principle of solidarity and, in India, the doctrines of public trust and *parens patriae*, which are also recalled in case law on the right to a stable climate.

This is probably due to the different cultural approach with which the courts involved regard the problem of the environment and climate crisis. The jurisprudential analysis conducted shows how the shift from an anthropocentric to an ecocentric legal paradigm has a different epistemological foundation between the global North and South: the former is scientific, the latter biocultural.

For the courts of the Western Legal Tradition ‘As a Grundnorm, the planetary boundaries framework offers a rational and empirical basis of normative validity without metaphysical or culturally specific appeals to ‘nature’’,⁴⁵

For the courts of the Global South, the paradigm shift is primarily cultural, based on respect for a sustainable Man-Nature relationship, rooted in the cosmovision and traditions of indigenous peoples, which have been confirmed by the latest scientific findings.⁴⁶

The risk for the emerging ES law is to repeat the mistakes made in pursuing an essentially monocultural formulation of ‘sustainable development’. The ecosystem approach is inherently intercultural and thus requires an ecology of knowledge, i.e., the integration of Western and ancestral scientific knowledge.

Popular environmentalism in the Global South has both an ecological and a cultural dimension, since it identifies with the claims of indigenous and Afro-descendant peoples, and with marginalised rural and urban communities, to defend and maintain their ancestral traditions. The relationship that these communities have with the land and nature is not reduced to a form of mere economic exploitation. It is based on a set of values and principles, such as responsibility and solidarity towards other living beings and ecosystems, based on the recognition of an intimate and personal relationship with these elements.⁴⁷ Environmental conflicts in that part of the world ‘*expresan las tensiones subyacentes de visiones, intereses y cosmovisiones diversas*’.⁴⁸ In Colombia, indigenous justice solves them by applying the principles approved by the community through the *Planes de vida*, which encompass the way of thinking, feeling, acting and relating to the earth, sky and mankind,⁴⁹ and are an expression of a form of ‘*desarrollo propio*’ or ‘*desarrollo indígena*’, distinct from the Western concept of development.

The contrast between North and South appears clear, but European and North American hostility to the rediscovery of their own traditional culture may just be a legacy of centuries of positivism, rationalism and mechanism. For example, the Irish High Court, in the case of *Merriman et al.*,⁵⁰ notes that the applicants, in addition to basing the existence of a right to an environment consistent with the human dignity and well-being of citizens at large on scientific consensus, mention an ‘emerging theological/philosophical consensus’, derived from ‘the commonality of views that appears to be shared by all of the major religions on matters environmental, as evidenced by the well-known Assisi Declarations of September 1986 in which distinguished leaders and personages from the Buddhist, Christian, Hindu, Islamic and Judaic faiths individually issued a series of declarations which point to humanity’s common destiny as the stewards and trustees of our shared natural environment’, as well as a ‘secular environmental philosophy, which offers a rational and non-religious

⁴⁵ Schmidt (n 20) 728.

⁴⁶ UNEP/CBD/COP/5/23, pp. 103-109: ‘It recognizes that humans, with their cultural diversity, are an integral component of many ecosystems’ (p. 104). ‘The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices (Annex B, p. 107).

⁴⁷ Gregorio Mesa Cuadros, *Ambientalismo popular* (Ediciones desde abajo 2018). Martínez Alier calls it ‘ecologism of the poor’. (citato da Gloria Amparo Rodríguez, ‘Prevención y Solución de los Conflictos Ambientales en Territorios Indígenas’ (2017) 9 Sortuz. Oñati Journal of Emergent Socio-legal Studies 1, 10.

⁴⁸ Mesa Cuadro (n 52).

⁴⁹ Rodríguez (n 52) 10.

⁵⁰ [2017] IEHC 695, 2017 No. 201 JR

basis by which one can arrive at a place not so very far removed from that occupied by the major religious faiths' (p. 242). Nevertheless, the Court refuses to base its considerations on these elements, confirming not only the exclusively scientific approach we have indicated, but also its adherence to a monist and positivist conception of law. In the Norwegian judgment analysed above, the Court recognises that the parameter of constitutionality should be interpreted in the light of moral values, going beyond mere scientific data: 'This involves, in the same way as the principle regarding solidarity across generations, a moral principle that can have major significance in the work on reducing climate changes.

Another distinctive element between the two ecosystem approaches studied concerns the origin of impetus for change. In the legal systems without constitutional or legislative clauses attributing legal personality to Nature or to specific elements of Nature, innovation occurred through judicial activism, i.e., on the basis of arguments carried out independently by 'enlightened' judges. The claimants, although always motivated by a clear intention to protect the environment, having in some cases to overcome the hurdle of legal standing, find themselves legally basing their claims on anthropocentric arguments, based on the violation of individual, constitutional or human rights. They do not foresee, in any way, the final outcome of the case (i.e., the recognition of Nature as a subject of law): they ask the Court to declare the State responsible for the violation of their constitutional rights, and to impose the necessary measures for their reinstatement. This is a perspective that remains anthropocentric. Only when the jurisprudence of the High Courts is consolidated do the claimants move on to directly request recognition of the legal personality of the natural elements that form the subject of the action. An example is the recent *Parque de los Nevados case* in Colombia.⁵¹

On the other hand, in the climate cases analysed, it is the plaintiffs themselves who base their actions and demands (more or less explicitly, in a principal or subordinate way) on the recognition of a new right, that of a stable climate, suitable for sustaining human life on the planet, which, while being claimed as a constitutional or human right, intrinsically contains an ecosystemic conceptual core.

The road to the establishment of an ES Law still seems long and uncertain. However, the comparative method has proved to be a useful and valid tool for lawyers, as it is able to highlight what is needed to shift from environmental law to ES law, showing the main obstacles and offering some initial shared solutions. The key step is to train national judges in the principles of the ecosystem approach, which has two implications: firstly, the need to analyse each case with a holistic view, capable of embracing the global impact of each local action. Consequently, the interpretation and application of domestic law must be based on appropriate scientific parameters, such as the PB framework. Secondly, the scientific ecosystem approach must be understood interculturally, on the basis of an ecology of knowledge⁵² which welcomes, like Mother Earth, every sensibility capable of communicating with her in harmony.

References

- Aidun H, Libby M, 'Juliana In The World: Comparing The Ninth Circuit's Decision To Foreign Rights-based Climate Litigation' (2020) <<http://blogs.law.columbia.edu/climatechange/2020/03/13/juliana-in-the-world-comparing-the-ninth-circuits-decision-to-foreign-rights-based-climate-litigation/>> accessed 26 March 2021.
- Bagni S, 'Back to the future: building harmony with nature in the European Union by learning from our ancestors', in Serena Baldin, Sara De Vido, *Environmental Sustainability in the European Union: Socio-Legal Perspectives* (Edizioni Università di Trieste 2020)
- Bosselman K, 'Shifting the Legal Paradigm: Earth-centred Law and Governance' in Paulo Magalhes, Will Steffen, Klaus Bosselmann, Alexandra Arago, Viriato Soromenho Marques (eds), *The Safe Operating Space Treaty: A New Approach to Managing Our Use of the Earth System* (Cambridge Scholars Publishing 2016)
- Carducci M et al., *Towards an EU Charter of the Fundamental Rights of Nature. Study* (European Economic and Social Committee 2020)
- Carducci M, 'Contenzioso climatico, illecito civile, termodinamica' (2021) [laCostituzione.info](http://www.lacostituzione.info) <[http://www.lacostituzione.info/index.php/2021/02/08/contenzioso-climatico-illecito-civile-termodinamica/?utm_source=feedburner&utm_medium=email&utm_campaign=Feed:+LaCostituzionePuntoInfo+\(La+Costituzione.info\)](http://www.lacostituzione.info/index.php/2021/02/08/contenzioso-climatico-illecito-civile-termodinamica/?utm_source=feedburner&utm_medium=email&utm_campaign=Feed:+LaCostituzionePuntoInfo+(La+Costituzione.info))> accessed 26 March 2021

⁵¹ STL10716-2020, Radicación n. 90309, Acta n. 44, of 25 November 2020, magistrada ponente Clara Cecilia Dueñas Quevedo.

⁵² Boaventura de Sousa Santos, 'A Non-Occidental West?: Learned Ignorance and Ecology of Knowledge' (2009) 26 *Theory Culture Society* 103.

Carducci M, 'The premises of 'constitutional ecology''(2020) *Veredas do Direito* 17(1), 89

De Lucia V, Andreassen IS, 'Climate Litigation in Norway. A Preliminary Assessment' (2020) 2 *DPCE Online* 1405

de Sousa Santos B, 'A Non-Occidental West?: Learned Ignorance and Ecology of Knowledge' (2009) 26 *Theory Culture Society* 103.

Grober U, *Sustainability. A Cultural History* (Green Books 2012)

Gudynas E, *El mandato ecológico. Derechos de la Naturaleza y políticas ambientales en la nueva Constitución* (AbyaYala, 2009)

—, *Derechos de la Naturaleza. Ética biocéntrica y políticas ambientales* (1st edn, Plural 2014).

Kim RE, Bosselmann K, 'International environmental law in the Anthropocene: Towards a purposive system of multilateral environmental agreements' (2013) 2 *Transnational Environmental Law* 285

—, Kotzé LJ, 'Planetary boundaries at the intersection of Earth system law, science and governance: A state-of-the-art review' [2020] *RECIEL* 1

Kotzé LJ, 'Earth System Law for the Anthropocene' (2019) *Sustainability* 11, 6796

—, Kim RE, 'Earth system law: The juridical dimensions of earth system Governance' [2019] *Earth System Governance*, 1

Meadows D, Meadows DL, Randers J, Behrens III WW, *The Limits to Growth* (Club of Rome 1972)

Mesa Cuadros G, *Ambientalismo popular* (Ediciones desde abajo 2018).

Padovani L, Carrabba P, Mauro F, 'L'approccio ecosistemico: una proposta innovativa per la gestione della biodiversità e del territorio' (2003) *Energia, Ambiente e Innovazione* 1/03, 23

Rockström J et al, 'A Safe Operating Space for Humanity' (2009) 461 *Nature* 472.

Rodríguez GA, 'Prevención y Solución de los Conflictos Ambientales en Territorios Indígenas' (2017) 9 *Sortuz. Oñati Journal of Emergent Socio-legal Studies* 1.

Schmidt JJ, 'The moral geography of the Earth system', (2019) 44 *Trans Inst Br Geogr* 721

Smith TM, Smith RL, *Elements of Ecology* (9th edn, Pearson 2015)

Steffen W et al., 'Planetary boundaries: Guiding human development on a changing planet' (2015) 347 *Science*, 736

Woolley O, 'What would ecological climate change law look like? Developing a method for analysing the international climate change regime from an ecological perspective' (2020) 29 *RECIEL* 76