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Despite Efforts, International Environmental Law is Aspirational Rather than Successful in its Contribution to the Protection of the Global Environment and in the Fight Against Climate Change

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DESPITE EFFORTS, INTERNATIONAL ENVIRONMENTAL LAW IS ASPIRATIONAL RATHER THAN SUCCESSFUL IN ITS CONTRIBUTION TO THE PROTECTION OF THE GLOBAL ENVIRONMENT AND IN THE FIGHT AGAINST CLIMATE CHANGE

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Abstract

The 1972 United Nations Conference on the Human Environment[2] (Stockholm Conference) was the first of many international negotiations to consider the effects of anthropogenic interference with the environment, including chemical pollution and climate change. The Conference and its corresponding declaration recognised customary International Environmental Law (IEL) principles, such as the precaution and prevention principles, and has no doubt been a catalyst for an increased awareness of environmental issues throughout the globe, thus influencing domestic environmental legal systems. The UN climate regime can therefore be seen not only as a source of international law, but as an influence on national and transnational environmental regulatory systems. However, the question remains as to the actual impact, if any, IEL has had in protecting the global environment and preventing dangerous climate change.

Keywords: International Environmental Law, climate change, sustainable development, environmental responsibility

Introduction

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[2] Declaration of the United Nations Conference on the Human Environment, ('Stockholm Declaration'), Stockholm, June 1972

The 1972 Stockholm Conference was the first to address global problems such as chemical pollution, climate change and other threats to the environment. Principle 1 of the resulting Stockholm Declaration states the common conviction that

> Man has the fundamental right to…adequate conditions of life in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment.[3]

Whilst this statement expresses a clear duty to protect the environment, the anthropocentric idea that the environment need only be protected where it affects the rights of man seriously limits its scope. Commentators note that most principles in the Stockholm Declaration are largely aspirational rather than mandatory and few impose clear duties on states.[4]

Environmentalists have argued that the bold statements made in the Stockholm Declaration were not reiterated in the 1992 United Nations Conference on Environment and Development (the Rio declaration)[5]. Greenpeace has stated: 'The Rio Declaration provided the world with a bag of 'principles' that are regressive, fragmented, or seriously devoid of vision.'[6] However, the Stockholm Conference created the United Nations Environment Programme (UNEP) to assess environmental trends and conditions towards the goal of strengthening and developing international instruments and institutions for the 'wise management' of the environment[7]. Since IEL negotiations began, UNEP has played an important co-ordinating function.

The 1992 Rio negotiations resulted in a number of notable outcomes that will be referred to throughout this article. The main legal and policy focus of this article is the Rio Declaration[8] and the UNFCCC: the former as it expressly considered the balance between environment and development, reinforcing generally accepted principles of environmental law,[9] and the latter, which is possibly the most important legal outcome, as it continues to work as the centre of gravity for climate change negotiations.

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[3] Declaration of the United Nations Conference on the Human Environment, ('Stockholm Declaration'), Stockholm, June 1972, Principle 1.
[4] Bell., and McGillivray, D., *Environmental Law,* (2013) at p.150.
[5] Rio Declaration to Environment and Development, ('Earth Summit'), Rio de Janeiro, June 1992
[6] Greenpeace., 'The Rio Declaration – Stepping Backwards', Earth Summit Press Pack (1992), p.1 http://www.uow.edu.au/~sharonb/STS300/sustain/summit/critiques/article3.html accessed January 2016.
[7] United Nations Environment Programme, *About UNEP,* (no date) http://www.unep.org/about/ 18 January 2016.
[8] Rio Declaration to Environment and Development, ('Earth Summit'), Rio de Janeiro, June 1992
[9] such as the prevention principle (Principle 2), the precaution principle (Principle 15) and the polluter-pays principle (Principle 16).

The Convention established three bodies; the Intergovernmental Panel on Climate Change (IPCC) a consensus based scientific body which issues reports and advice, the UNFCCC Secretariat and the Conference of the Parties (COP). The ultimate objective of the UNFCCC is to stabilize greenhouse gas concentrations 'at a level that would prevent dangerous anthropogenic interference with the climate system'[10]: subsequently the 1997 Kyoto Protocol[11] was the first major product of the UNFCCC process.

The Kyoto Protocol

The Kyoto Protocol set binding targets for emissions reduction in developed countries. The compliance mechanism was the strongest in any multilateral environmental agreement to date and focused on targets based on total emissions per country, rather than per capita. To facilitate compliance, the Protocol codified a binary split of Annex 1 (developed) and non-Annex 1 (developing) Parties as had been agreed under the principle of 'common but differentiated responsibilities' (CBDR) in 1992.[12] As historically the majority of greenhouse gas emissions came from Annex 1 countries, the Treaty required commitment from them to assume the burden of climate change and to 'promote, facilitate and finance…developing country Parties, to enable them to implement the provisions of the Convention'.[13] Emerging economies such as China, India and Brazil were under no quantified obligation to reduce emissions. Furthermore, the Protocol did not enter into force for eight years. By which time it was evident that the Protocol was insufficient to control the concentrations of greenhouse gases in the atmosphere,[14] primarily because emerging economies such as China and Singapore had grown significantly in both wealth and emissions.[15]

According to Prost, some developing countries have been reluctant to adopt and enforce environmental laws due to a lack of capacity and will, 'content to sacrifice more of their environmental protection in the pursuit of their development goals'[16] despite being those most likely to 'suffer the most from climate change's adverse effects'.[17] The issue of CBDR has troubled negotiators since the signing of the UNFCCC treaty in 1992 and is a major factor in why many consider the Kyoto Protocol to be void.

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[10] *Ibid.,* Article 2
[11] Kyoto Protocol to the United Nations Framework Convention on Climate Change ('Kyoto Protocol'), Kyoto, December 1997
[12] United Nations Framework Convention on Climate Change, New York City, May 1992, Article 3
[13] *Ibid.,* Article 4
[14] Dupy, P,. and Viñuales, J., *International Environmental Law,* (2015), p.149
[15] International Monetary Fund, *World Economic Outlook - Recovery Strengthens, Remains Uneven,* (2014), table B1
[16] Prost, M., and Camprubi, A., 'Against fairness? International environmental law, disciplinary bias and Pareto Justice', (2012), *Lieden Journal of International Law,* p. 384
[17] *Ibid.,* p. 394

The Copenhagen Accord

The impending expiry of the Kyoto Protocol and the fourth IPCC assessment report which confirmed that 'warming of the climate system is unequivocal'[18], led to the Copenhagen Accord of 2010 (COP15). [19] The Conference sought commitments from both developed *and* developing countries as agreed under the Roadmap of the 2007 Bali Action Plan,[20] noted by Bondansky as 'a major reorientation of the climate change negotiations'[21]. Leaders agreed to prevent the estimated temperature rise of 2 degrees Celsius with an option to revise the target to 1.5 degrees in 2014. At the time, academics believed the Accord would provide 'the first realistic hope in many years that an effective global climate regime can be constructed'.[22] However, some considered that the conference 'epitomized the failure of international responses to climate change'[23] because negotiators failed to come to any decision as to how the goal should be reached.

The debate on the issue of CBDR is arguably the cause for the collapse of the Copenhagen Accord, as developing countries were understandably concerned that the allocation of responsibility would not allow them to develop sufficiently. For example, consider **Figure 1** which shows that in order to successfully limit the risk of exceeding a global temperature increase of 2 degrees Celsius and in order to meet the COP21 goal of reaching peak emissions in 2020 before declining to 50 per cent lower than 1990 levels, developing countries would be required to suffer a much greater sacrifice than developed countries.[24]

[18] IPCC, 2007: Summary for Policymakers. In: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change,* p.2.
[19] Copenhagen Accord to the United Nations Framework Convention on Climate Change, ('Copenhagen Accord'), Copenhagen, December 2009
[20] The Bali Roadmap to the United Nations framework Convention on climate Change (COP13), Bali, December 2007.
[21] Bondansky, D., 'The Copenhagen Climate Change Conference: A Post-Mortem', (2010) *University of Georgia School of Law,* p.2.
[22] Antypas, A., 'The Copenhagen Accord: Inclusive, meaningful and an important step forward', (2009) 295 *Environmental Law and Management*, p.1.
[23] Mayer, B., 'Climate Change and International Law in the Grim Days', (2013) 24 *European Journal of International Law,* p. 948.
[24] 'Kartha, S., Siebert, et al., R., 'A Copenhagen Prognosis: Towards a Safe Climate Future', *The Potsdam Institute for Climate Impact Research, Stockholm Environment Institute,* (2009), p.9.

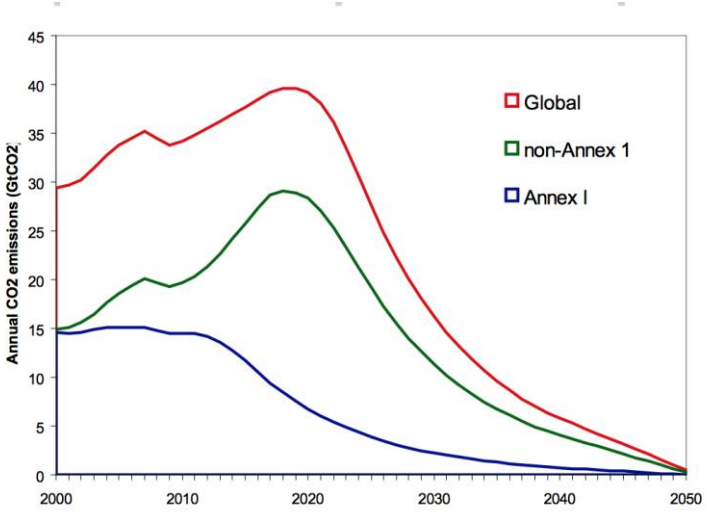

Figure 1. The red line shows a global 800 GtCO2 pathway, the blue pathway shows industrialised (Annex 1) countries' emissions declining more than 50 per cent below 1990 levels by 2020, and to zero by 2050. The green line shows, by subtraction, the severely restricted emissions path that would remain for developing countries.

In 2011, The Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP) (established at COP17) launched a work plan to enhance mitigation and to close the gap between Parties. It was considered to be a turning point in IEL negotiations as it recognised that mitigation efforts by developed countries alone would not be enough to tackle climate change. The phrase 'CBDR' was subsequently rephrased in the 2014 Lima negotiations (COP20), to 'common but differentiated responsibilities and respective capabilities, in light of different national circumstances'.[25] This new phrase addresses the issues around the debate of the 1992 CBDR by abolishing the distinction between Annex 1 and non-Annex 1 parties.

The Rio Summit in 2012 (Rio+20) shifted the focus from environmental protection to sustainable development in light of evidence from the IPCC that global warming was attributable to human activity. The IPCC has delivered five assessment reports since its development in the 1970s, each one noting more and more evidence of the 'discernible human influence on global climate'.[26] Its most recent report,[27] the IPCC stated that atmospheric

[25] United Nations Climate Change Conference, ('Lima Call for Climate Action'), COP20, Lima, December 2014, para.3.
[26] IPCC, 1995: The Science of Climate Change. In: *Climate Change 1995. Contribution of Working Group I to the Second Assessment Report of the Intergovernmental Panel on Climate Change,* p.5, para 2.4.
[27] IPCC, 2013: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*

concentrations of greenhouse gases have increased to unprecedented levels[28] and made it clear that 'limiting climate change will require substantial and sustained reductions of GHG emissions'.[29] It is perhaps in light of these findings that the latest negotiations at COP21 have focused primarily on emissions reduction. COP21 saw parties agree to limit global warming to 2 degrees between 2015-2100. In order to reach this target, it was agreed that emissions must be cut by 40-70 per cent by 2050 and carbon neutrality must be reached by the end of the century.

Developments in IEL Since Copenhagen

In November 2014, the US – China Joint Announcement on Climate Change saw President Obama and President Jinping reaffirm 'the importance of strengthening bilateral cooperation on climate change'.[30] This announcement signified clear progress in IEL, as the world's two largest carbon emitters, whose disagreements resulted in the failure of the Copenhagen conference, affirmed that this would not happen again. At the time, commentators considered that the announcement 'seems to embody a change of attitude and a new spirit of cooperation which could be of very real benefit as Paris 2015 approaches'.[31]

Another key difference between COP15 and COP21 is the development of a new UN process of managing climate change. The introduction of Intended Nationally Determined Contribution (INDCs) signifies a new approach to managing climate change. It allows Parties to volunteer their own action plans at COP21 and has been described as 'an impressive portfolio of potential investment opportunities that are good for each individual country and good for the planet'. [32] Furthermore, most countries submitted their INDCs before meeting in Paris, meaning much of the 'heavy lifting' of the agreement had already been done.

However, while these goals may be easier for countries to achieve, it does not mean that the pledges made are sufficient in preventing the global temperature rise of 2 degrees Celsius. At the time of writing, the UNFCCC report on the projections of the success of these INDCs show that the global trajectory of emissions would lead to a temperature rise of 2.7 to 3 degrees by

[28] *Ibid.* p.11.
[29] *Ibid.* p.19.
[30] The White House, *U.S. – China Joint Announcement on Climate Change,* (2014), p.1.
[31] Clement-Davies, C., 'How to train your dragon; China and the climate change harness', (2014) 8 *International Energy Law Review,* p.268.
[32] United Nations Framework Convention on Climate Change, *UN Climate Change Newsroom*, (2015) http://newsroom.unfccc.int/unfccc-newsroom/indcs-unprecedented-global-breadth-of-climate-action-plans-ahead-of-paris/ 25 January 2016.

the end of the century.[33] This shows that the 2 degree goal is achievable, but pledges made in INDCs must be strengthened in order to achieve it.

A final aspect that has led to the success of COP21 is the major financial developments in clean technology over the past seven years. Since 2009, the cost of solar modules has fallen by 65-70 per cent. This rejects the common belief that converting to clean energy is economically impossible, and has no doubt influenced negotiators and investors to support energy transitions from fossil fuels to renewable sources of energy.

1 The EU, US and China on Environmental Law: Global Cooperation

Domestic Introductions to Environmental Law

The Stockholm Declaration of 1972 had a particular influence on the European Communities (EC), which issued a number of environmental policies in light of The Limits to Growth published by the Club of Rome.[34] In 1973, the EC issued the first of seven Environmental Action Programmes (EAPs); this EAP[35] argued that economic development and the protection of the environment are interdependent and recognised the benefits of the 'prevention principle' over the 'polluter pays principle' by seeking prevention, reduction and containment of environmental damage, conservation of an ecological equilibrium and rational use of natural resources. By 1975, the first legally binding instruments on an environmental issue were adopted by the EU in relation to water and waste management.[36]

Before the EU, the US began adopting its environmental policing bodies.[37] In 1970, the US established the Environmental Protection Agency (EPA) to handle protection of public health and restoration of the natural environment with the power to intervene without invitation by state officials. In the landmark case of *Massachusetts v EPA,*[38] eleven states[39] argued that according to the Clean Air Act, it was the responsibility of the EPA to regulate carbon dioxide emissions made by car traffic in the US. The case was taken to the Supreme Court, where it

[33]United Nations Framework Convention on Climate Change, *Analysis Note: National Contributions, Paris 2015 UN Climate Change Conference COP21, CMP11*, (2016), p.2. http://www.cop21.gouv.fr/wp-content/uploads/2015/10/DP-INDC-EN.pdf 27 January 2016

[34] Meadows, D., Randers, J., et al., 'The Limits to Growth' (1972)

[35] Environmental Action Programme [1973] OJ C112/1.

[36] Consolidated Version of the Treaty on the Functioning of the European Union, 2012, C 326/01, Articles 115 and 352.

[37] The National Air Pollution Control Administration (1955) and The Federal Water Quality Administration (1965).

[38] *Massachusetts v Environmental Protection Agency* (2007) 549 US 497.

[39] Massachusetts, Alaska, Idaho, Kansas, Michigan, Nebraska, North Dakota, Ohio, South Dakota, Texas and Utah.

held a 5-4 majority in favour or Massachusetts. The court responded to the EPA's argument that emissions from American traffic were 'insignificant' to the global issue of climate change by stating 'a reduction in domestic emissions would slow the pace of global emissions increases, no matter what happens elsewhere'.[40] Academics have considered that although there has been some pulling back by the US courts in more recent case law, the response of the court in this case 'provided the legal base for the new administration to press ahead with an interventionist approach without the need to for further legislative backing'[41]. The judgment now stands as a precedent for legal action against other governments, such as those in the EU[42].

The history of China's relationship between law and the environment is less straightforward. Although the Chinese government has made recent efforts to improve its environment and air quality, more than 90 per cent of Chinese people are regularly exposed to air pollution, which is responsible for 1.6 million deaths in China per year[43]. China's poor air quality is a result of fast development and a history of environmentally devastating policy. For example, a recent study has considered the environmental impact of China's Huai River Policy (HRP), a policy that had the goal of providing unlimited free heating to homes and offices in Northern China in winter months between 1950-1980, mostly from coal-fired boilers.[44] The study found that incomplete combustion of coal in the boilers led to TSP concentrations 55 per cent higher than in Southern China, resulting in a 5.5 year reduction of life expectancy, incurring a total loss of 2.5 billion life years.[45]

In light of the health and human rights issues raised by these figures, and increased pressure from developed countries during negotiations, China's environmental movement began in 1989 when the Environment Protection Law[46] (EPL) was passed. However, the EPL was not made 'law' until 2014.[47] This 25 year gestation period reflects the time taken for the Chinese government to achieve consensus as to whether the country should prioritise economic growth over environmental protection, and the *reactive* rather than *proactive* nature of environmental

[40] *Massachusetts v Environmental Protection Agency* (2007) 549 US 497*,* para.21-23.
[41] Carnwath, L., 'Environmental Law in a Global Society', (2015) *Journal of Planning and Environment Law* p. 278.
[42] *Urgenda Foundation v The State of the Netherlands* (2015) C/09/456689 HA ZA 131396.
[43] Rohde, R., Muller, R., 'Air Pollution in China: Mapping of Concentrations and Sources', *Berkeley Earth,* (2015), p.1.
[44] Chen, Y., Ebenstein, A., et al., 'Evidence on the impact of sustained exposure to air pollution on life expectancy from China's Huai River policy', 110 *Proceedings of the National Academy of Sciences of the United States of America,* (2013).
[45] *Ibid*., p.6.
[46] Environmental Protection Law of the People's Republic of China (1989).
[47] Tianbao Q., 'Research Handbook on Chinese Environmental Law' (2015), p.397.

law. Since 1989, the EPL has been revised a number of times, resulting in the finished product having a more forceful position in transparency, liability, non-compliance and economic benefits. Legal practitioners believe that the revised document signals a recognition of the 'continued growing importance of environmental protection in the midst of economic development';[48] a promising step forward.

States' Contribution to Modern IEL

The Kyoto Protocol showed major differences in commitment between the US, EU and China. Firstly, although China was a party to the Protocol, as a non-Annex 1 party it was placed under no binding targets or obligations. The US signed the Protocol in 1998, however, for involvement to become binding it had to first pass the Senate. In 1997 the Senate passed Byrd-Hagel Resolution which unanimously decided that the US should not ratify the Kyoto Protocol as the 'disparity of treatment between Annex 1 parties and developing countries and the level of required emissions reductions, could result in serious harm to the United States economy'.[49] Consequently, the US never ratified the Protocol, which seriously de-valued the Protocol's worth.

The EU signed and ratified the Protocol as an Annex 1 party and has continued its involvement, adhering to binding commitments in the second period and in 2003 established its Emissions Trading System (EU ETS),[50] shortly followed by the Linking Directive[51] which ensures compliance under the Clean Development Mechanism as agreed upon in the Kyoto Protocol.[52] However, it soon became clear that the growing levels of emissions from the US, China and other developing countries would render the Protocol 'increasingly ineffective'.[53]

In a recent presentation, David Puttnam discussed the world's historical reputation for pursuing economic gains over human interests.[54] He mirrored examples such as the economic arguments not to abolish slavery to the economic arguments not to abolish fossil fuels, describing it as 'a disregard for human suffering in the pursuit of profit'. He argues that over

[48] Hogan Lovells, *Clearing the Air on China's New Environmental Protection Law,* (2014) http://www.hoganlovells.com/clearing-the-air-on-chinas-new-environmental-protection-law-05-15-2014/ 12 March 2016.
[49] Byrd-Hagel Resolution, (1997, 105th Congress, 1st Session, S.RES.98), para.11.
[50] Directive 2003/87/EC The EU Emissions Trading System Directive [2003] OJ L275.
[51] Directive 2004/101/EC The EU Emissions Trading System Linking Directive [2004] OJ L338.
[52] Kyoto Protocol to the United Nations Framework Convention on Climate Change ('Kyoto Protocol'), Kyoto, December 1997, Article 12.
[53] Weiner, J., 'Something Borrowed for Something Blue: Legal Transplants and the Evolution of Global Environmental Law', (2001) 27 *Ecology Law Quarterly* p.1363.
[54] Puttnam, D., 'The Reality of Climate Change', TEDx, YouTube, (2014). https://www.youtube.com/watch?v=SBjtO-0tbKU 10 February 2016.

the years, this has been the same neglectful approach that has been made towards climate change, particularly by the US Bush administration in failing to sign the Kyoto Protocol. However, both countries have recently taken a more serious approach to IEL.

For example, the Obama administration has spurred a new wave of environmental interest. The US-China Joint Announcement was arguably the catalyst for the unprecedented global involvement during the Paris negotiations and a huge step forward for global cooperation. Another promising announcement can be found in the 17th bilateral summit between the EU and China, where both countries adopted a joint statement on climate change, agreeing to 'work together to reach an ambitious and legally binding agreement at the Paris Climate Conference'.[55] Commentators believe that while these announcements could be considered as mere 'political window-dressing',[56] they highlight the 'importance of working with the grain of market forces, rather than against it, to achieve the desired results',[57] a reminder of the importance of politics in constructing an effective legal agreement.

Access to Justice and The Role of the Courts

The issue of access to justice in environmental cases was addressed in UKELA's 2015 Annual Garner Lecture. Thornton expressed concern over the so called 'capture' theory, explored by Keith Hawkins, whereby 'an agency is co-opted by those it seeks to regulate, incorporating and reflecting their concerns into its decision making'[58] and thus controlling the regulator, whereas members of the public with only a small financial stake cannot. This has resulted in an estimated 30,000 business lobbyists in Brussels working on behalf of their industries, 700 environmental lobbyists and very few ordinary citizens lobbying for environmental causes.[59] Thornton argues that in order for environmental law to be effective, the 'real clients of government should be the people they govern'[60] i.e. the citizens who have placed them in power for the common good in order for that common good to be effective.

Thornton drew comparison between two key cases that highlight this issue. The first, the US case of *Marbury v Madison* (1803)[61] established that the Supreme Court had the ultimate

[55] EU-China Joint Statement on Climate Change, Belgium, June 2015, para.5.
[56] Clement-Davies, C., 'How to Train Your Dragon; China and the Climate Change Harness', (2014) 8 *International Energy Law Review,* p.267.
[57] *Ibid.*
[58] Hawkins, K., *Environment and Enforcement: Regulation and the Social Definition of Pollution*, (1984), p.3.
[59] Thornton, J., 'Can we catch up? How the UK is falling behind on environmental law', (2016) *27 Environmental Law and Management,* p. 194.
[60] *Ibid.*
[61] *Marbury v Madison* (1803) 5 US 137, 1 Cranch 137, 2 L Ed 60.

power to decide what the law is and to enforce it. This movement occurred much later in the UK, in the case of *ClientEarth v Defra* (2015)[62] where ClientEarth sought to establish the right of the British people to breathe clean air. This case saw the court take a similar approach to *Madison*, by asserting its 'authority to order the government to comply with its legal duty' and, according to Thornton, 'created a kind of continuing *mandamus*, fashioning a role for the courts to supervise compliance with the court's order', [63] representing a move away from the arbitrary exercise of power to which the UK has become accustomed.

Despite this positive step in the UK, Thornton argues that a clear distinction remains between access to justice in the EU and access to justice in China and the US. Giving citizens and environmental organisations (such as ClientEarth) the right to submit complaints on non-compliance was one of the objectives of the Aarhus Convention, to which the EU is a signatory. But as decisions are not legally enforceable, academics consider that 'access to the European courts on environmental matters is de facto impossible for individuals and environmental organisations'.[64] ClientEarth has brought the Commission before the Aarhus Convention Compliance Committee and is waiting for its response, although a decision that puts EU law 'in the wrong' is going to be unlikely.

Thornton contrasts this with access to justice in the US, where the Clean Air and Clean Water Acts have a 'private attorney general' provision (allowing citizens to enforce the law) and the new approach to access to justice in China, where Article 6 of China's EPL allows individuals and non-governmental organisations (NGOs) to bring cases against polluting companies for the first time.[65] He describes the new Chinese environmental movement as 'a real game changer where citizens can sue companies in Chinese courts'.[66]

On an international scale, the International Court of Justice (ICJ) provides access to justice to UN member states, rather than individuals. The ICJ hears disputes between states (only around three per year) and delivers Advisory Opinions by specialist UN agencies. In 1993, an Environmental Chamber was established. Disappointingly, the ICJ only had the opportunity to give judgment to two environmental cases before it was later dismantled.[67] Commentators

[62] *ClientEarth v Secretary of State for the Environment, Food and Rural Affairs* [2015] UKSC 28
[63] Thornton, J., 'Can we catch up? How the UK is falling behind on environmental law', (2016) *27 Environmental Law and Management,* p. 194.
[64] Krämer, L., *EU Environmental Law,* (2011) p.438.
[65] Article 6, Environmental Protection Law of the People's Republic of China (1989.
[66] Thornton, J., 'Can we catch up? How the UK is falling behind on environmental law', (2016) *27 Environmental Law and Management*, p.197.
[67] *Case Concerning the Gabčíkovo-Nagymaros Dam* (1997) (*Hungary v Slovakia)* I.C.J Reports, 1997, p7; *Case concerning Pulp Mills of the River Uruguay (Argentina v Uruguay)* (2010) I.C.J Reports 2010, p.14.

consider that due to the mechanisms available in international law being under-utilized in the environmental sphere, 'the extent to which they are appropriate for resolving international environmental disputes remains, perhaps at best, unclear.'[68] Furthermore, only a third of UN member states have accepted its jurisdiction,[69] meaning very little resort is ever made to the ICJ.

The US has demonstrated its power in many international negotiations, environmental law being no exception. The world relies heavily on US involvement in IEL due to its strong political influence on emerging and developing economies, such as China. Despite being one of the world's largest economies and emitting more carbon emissions than the EU and US combined,[70] China is still a developing country[71] and its responsibilities are commensurate with this status. However, in light of China's recent economic growth and high levels of emissions, China's involvement in IEL has never been more necessary.

In terms of implementation and compliance, the EU has been the most successful of the three. This is perhaps because, unlike the US and China, the EU has always supported a rule-of-law based system at an international level (for example in its internal binding targets and policies[72]). The EU could therefore be seen as a role model for other Parties to negotiations. A recent article by Belis et al supports this view. The article analysed the direct impact the EU may have on US international negotiations on environmental regulation and concluded that

> a closer look into US domestic debates on such regulation has indeed indicated that these debates take place within the shadow of the EU's environmental policies and standards and that this happens because the EU acts - intentionally or unintentionally - as a normative standard, a semi-hegemonic competitor, and an empirical touchstone in such debates.[73]

IEL agreements will never be successful without the support and involvement of China, the US and the EU. The strengthening relationship between these parties shown in UNFCCC negotiations and bilateral agreements suggests a much more optimistic outlook for future IEL

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[68] Bell, S., McGillivray, D., *Environmental Law* (2013) p.156.
[69] two that have rejected its jurisdiction include China and the US - International Court of Justice, *Jurisdiction,* (no date) http://www.icj-cij.org/jurisdiction/?p1=5&p2=1&p3=3 17 March 2016.
[70] Boden, T.A., et al., 'National CO2 Emissions from Fossil-Fuel Burning, Cement Manufacture, and Gas Flaring: 1751-2011', Carbon Dioxide Information Analysis Centre, Oak Ridge National Labatory, U.S. Department of Energy.
[71] United Nations, *Country Classification,* (no date) http://www.un.org/en/development/desa/policy/wesp/wesp_current/2014wesp_country_classification.pdf 23 March 2016.
[72] see Directive 2003/87/EC The EU Emissions Trading System Directive [2003] OJ L275; Directive 2004/101/EC The EU Emissions Trading System Linking Directive [2004] OJ L338.
[73] Belis, D., Joffe, P., et al., China, the United States and the European Union: Multiple Bilateralism and Prospects For a New Climate Change Diplomacy, (2015), 3 *Climate and Carbon Law Review* p.216.

decision making.

2 Developing Countries and Environmental Law: Sustainable Development and Human Rights

The Influence of Human Rights in IEL

A study conducted by the UN on the relationship between human rights and the environment (the Analytical Study) considers three approaches to the relationship between human rights and the environment.[74] The first suggests that the environment is 'a *precondition* to the enjoyment of human rights',[75] underscoring the concept of environmental justice and the fact that a life of dignity is only possible where people have access to an environment with basic qualities. The second approach postulates that due to their 'higher value', human rights can be used as a *tool* to 'achieve environmental protection'.[76]. The final approach 'proposes the *integration* of human rights and the environment under the concept of sustainable development'[77] and suggests that societal objectives must be treated in an integrated manner. The three approaches addressed in the Analytical Study will now be discussed in turn.

Human Rights and Environmental Justice

In a recent publication by Rhukus Ako, the author deliberates the global meaning of 'environmental justice' and its links to human rights. Ako argues that there is a clear consistency in that definitions of environmental justice in both developed and developing countries make reference to 'disadvantaged groups that should be protected from denied equal opportunities'.[78] A developed country example is the US. The US definition of environmental justice originated from ethnic minority campaigns against hazardous waste sites and the EPA's definition: 'the fair treatment and meaningful involvement of all people regardless of race, colour, national origin, culture… with respect to… the enforcement of environmental laws…'[79]

Ako stresses the importance of this definition, as it highlights that ethnic minorities should not

[74] Office of the High Commissioner for Human Rights (OHCHR), *Analytical Study on the Relationship between Human Rights and the Environment,* (December 2011), UN Doc. A//HRC/19/34 (OHCHR Analytical Study), p.4.
[75] *Ibid.*
[76] *Ibid.*
[77] *Ibid.*
[78] Ako, R., Environmental Justice in Developing Countries: Perspectives from Africa and Asia-Pacific, (2013) p.2.
[79] US Environmental Protection Agency, *Environmental Justice,* (no date) http://www3.epa.gov/environmentaljustice/ 21 February 2016.

bear disproportionate burdens and that the communities likely to be impacted by environmental stress ought to be involved in the decision making process.[80] As a developing country example, the South African interpretation of 'environmental justice' (as defined by APEN) seeks to 'challenge the abuse of power which results in poor people having to suffer the effects of environmental damage caused by the greed of others'. [81] The term 'environmental justice' is therefore relatively consistent in both developed and developing countries in that each definition makes reference to the importance of protecting indigenous or minority communities and considers that a healthy environment is a precondition to the enjoyment of human rights (supporting the first approach in the Analytical Study). Academics consider that while environmental legislation is not everything, it is an 'important factor to distribute justice in society, to determine rights and obligations and to balance diverging interests'.[82] However, due to the political nature of IEL it seems inevitable that environmental justice will always come second to Parties' economic interests, no matter the threat to human rights.

Human Rights to Achieve Environmental Protection

Following the second approach of the Analytical Study to determine the nature of the relationship between human rights and the environment, it is necessary to discuss the role of the courts and how human rights may be used as a tool to achieve environmental protection. In *Gabcikovo-Nagymaros* the first predominantly environmental case brought before the ICJ*,* it was stated that 'the protection of the environment is…a vital part of contemporary human rights doctrine, for it is a *sine qua non* for numerous human rights such as the right to health and the right to life itself'. *[83]* This case clarified that the protection of the environment is vital to 'specific' environmental rights. However, environmental protection also has an indirect connection to more 'general' rights as a result of progressive interpretation by the courts. This was demonstrated in the case of *Lopez Ostra* where the European Court of Human Rights (ECtHR) found that the nuisance caused to *Lopez* by a waste treatment facility amounted to a violation of Article 8 of the European Convention on Human Rights *[84]*. The African Commission has taken the connection between environmental protection and 'general rights' further, using cultural rights as a means to protect the environment and indigenous peoples in developing countries throughout Africa.[85]

[80] Ako, Environmental Justice in Developing Countries, p.2.
[81] Asian Pacific Environmental Network, http://apen4ej.org 17 February 2016.
[82] Krämer, L., *EU Environmental Law* (2011), p.444.
[83] *Case Concerning the Gabčíkovo-Nagymaros Dam* (1997) (*Hungary v Slovakia)* I.C.J Reports, 1997, p7 at para. 206.
[84] *Lopez Ostra v Spain,* (1994) ECtHR 16798/90 at para.51.
[85] see *Centre for Minority Rights Development (Kenya) and Minority Rights Group International on behalf of Endorois Welfare Council v Kenya,* 276/2003 ('*Endorois').*

These cases illustrate that human rights *can* work as an effective tool to ensure environmental protection in the courts. However, an alternative approach to IEL, often lobbied for by environmentalists and advocates of 'deep ecology' such as Bill Devall,[86] is to award the environment 'intrinsic rights', unaffected by anthropocentric influences. The core principle of deep ecology is that the environment should be regarded as having inalienable legal rights; suggesting that IEL should not work to protect human rights, but should work to protect the environment *itself.*[87] In a recent article, Susana Borras explores Devall's theory and considers that despite the social impulse advocating the protection of the environment on its own terms, current environmental values have no intrinsic worth and are *only* protected because of their role in satisfying human needs. She argues that due to legal systems regarding nature as property rather than an ecological partner with its own rights,

> domestic laws and regulations on environmental protection effectively legalise environmental damage by regulating how much pollution of natural destruction of nature may lawfully occur'[88].

This raises questions as to whether current approaches to IEL through UN negotiations, domestic laws and through the international courts will ever be enough to protect the environment at the level required to prevent irreparable damage. Borras also considers that anthropocentricism may be a necessary part of environmental protection, 'not because humanity is at the centre of the biosphere, but because humanity is the only species which possesses the consciousness to recognise and respect the morality of rights'.[89]

An example of this eco-centric approach to environmental law can be found in the Ecuadorian Constitution which includes the 'Rights of Nature', providing that not only do *people* have the right to a healthy environment, but *nature itself* has 'the right to exist' and the 'right to restoration'. [90] The implementation of the Rights of Nature in Ecuador continues to be widely debated, questioning the legitimacy of the 2008 Constitution. Some environmentalists consider that if Ecuador is unable to commit to protect nature's right to persist and to be maintained, 'the concept of granting essential rights to Nature should be reconsidered in terms of the real capacity and willingness of the State to respect them'.[91]

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[86] see Devall, B., Sessions, G., *Deep Ecology,* (1985).
[87] *Ibid.*
[88] Borras, S., 'New Transitions from Human Rights to the Environment to the Rights of Nature', (2016) 5 *Transnational Environmental Law*, p.128.
[89] *Ibid.*
[90] Constitution of The Republic of Ecuador, the Official Register, October 2008*,* Article s71 and 72.
[91] Arias, M., 'On The Environment', Yale Centre for Environmental Law & Policy, (2015) http://environment.yale.edu/envirocenter/post/conversation-with-natalia-greene-about-the-rights-of-nature-in-ecuador/ 16 March 2016.

Sustainable Development and Environmental Responsibility

This brings us to the issue of sustainable development and the third approach in the Analytical Study. Developing countries will need to continue to emit dangerous levels of GHG emissions in order to bring their citizens out of poverty and reach the economic stability of their developed neighbours. These rising emissions would make it impossible to stop dangerous climate change, as developed countries' efforts alone are not sufficient. The key political problem for developing countries and their contribution to IEL is therefore how to reconcile environmental protection and economic development.

The principle of sustainable development was introduced into mainstream discourse in the 1987 Brundtland Report, which defined sustainable development as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'[92] and defined the 'three pillars' of sustainability; social, environmental and economic. International negotiations and global bodies tend to focus on one pillar in particular. However, to achieve sustainability, all three pillars must work together. The UN has sought to address this issue through a number of international agreements, notably the 1992 Rio Declaration,[93] the Johannesburg Summit[94] and Rio+20[95]; although academics consider that the idea of the three pillars being 'effectively reconciled in practice – a 'win', win, win' scenario – is inherently unconvincing'.[96]

In the 1992 Rio Declaration, States officially committed to 'the further development of international law in the field of sustainable development'[97] and Agenda 21 confirmed that this involved 'giving special attention to the delicate balance between environmental and developmental concerns'.[98] The Johannesburg Declaration took this further[99] and mandated the UN Commission on Sustainable Development to oversee its implementation. A recent survey by the UN department of economic and social affairs states that Rio+20 'reaffirmed

[92] Report of the World Commission on Environment and Development, *Our Common Future* (1987) p.51.
[93] Rio Declaration to the United Nations Conference on Environment and Development, ('Earth Summit'), Rio de Janeiro, June 1992, Principle 4.
[94] Johannesburg Declaration on Sustainable Development to the World Summit on Sustainable Development, ('World Summit 2002'), Johannesburg, September 2002.
[95] The United Nations Conference on Sustainable Development, *The Future We Want,* ('Rio +20), Rio de Janeiro, June 2012.
[96] Morrow, K., 'Rio+20, the green economy and re-orienting sustainable development' (2012) 14 *Environmental Law Review,* p.287.
[97] Rio Declaration to the United Nations Conference on Environment and Development, ('Earth Summit'), Rio de Janeiro, June 1992, Principle 27.
[98] Report of the United Nation Conference on Environment and Development, A/CONF.151/26/Rev.1 (Vol.1), Resolution 1, Annex 2: Agenda 21, Principle 1(a).
[99] Johannesburg Declaration on Sustainable Development to the World Summit on Sustainable Development, ('World Summit 2002'), Johannesburg, September 2002, para.5.

commitment to sustainable development and adopted a framework for action and comprehensive follow-up'.[100] However, as the Rio Declaration was non-binding, it did not award the concept of 'sustainable development' a primary norm or principle in IEL.

Furthermore, in the The *Gabčíkovo-Nagymaros* case the court observed that the 'need to reconcile economic development with protection of the environment is aptly expressed in the concept of sustainable development'.[101] Academics believe that this statement referred to the inclusiveness of the concept of sustainable development without giving it 'the character of a primary norm or principle'.[102] In his separate opinion, Judge Weeramantry challenged the conclusion, stating that sustainable development should be 'more than a mere concept, but as a principle with normative value'.[103] His position was confirmed in the *Iron Rhine Arbitration* where it was held that sustainable development 'has now become a principle of general international law'.[104]

In the more recent *Pulp Mills* case,[105] the ICJ returned to adopt the understanding of sustainable development expressed by the majority in *Gabčíkovo-Nagymaros.* Academics therefore believe that although sustainable development is an element of the judicial reasoning process, 'whether sustainable development can operate as a primary norm is still unsettled in general international law'.[106] Despite efforts to promote sustainable development agendas, the legal status of sustainable development and the extent to which it can work to protect human rights and protect the environment remains unclear. In its conclusions, the Analytical Study recognises this and considers that each approach

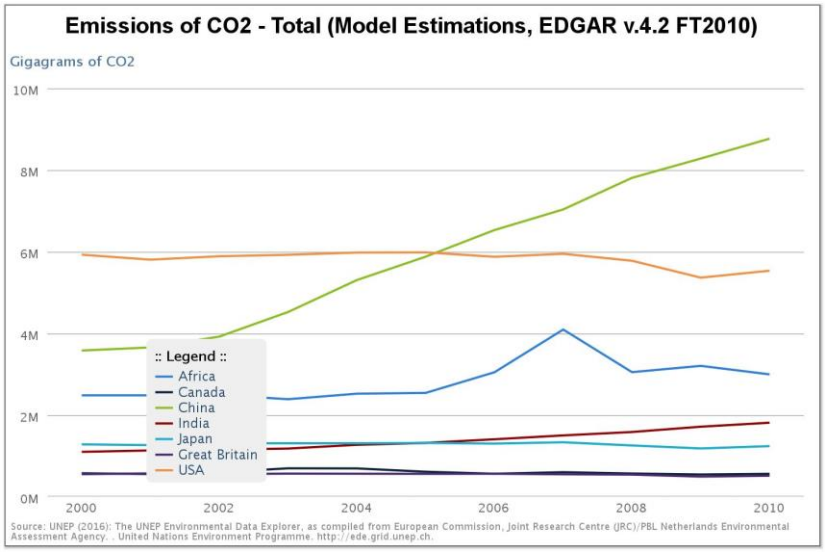
> raise(s) salient questions concerning…the need for…a right to a healthy environment; the role and duties of private actors with respect to human rights and the environment; and the extraterritorial reach of human rights and environment…(and)… how to implement a rights-based approach to the negotiation…'[107]

[100] World Economic and Social Survey, Sustainable Development Challenges, United Nations Department for Economic and Social Affairs, E/2013/50Rev.1, p.4
[101] *Case Concerning the Gabčíkovo-Nagymaros Dam* (1997) (*Hungary v Slovakia)* I.C.J Reports, 1997 para.140.
[102] Dupy, P., Viñuales, J., *International Environmental Law,* (2015), p.80.
[103] in: OJ C112/1 from 20.12.1973, Separate Opinion of Judge Weeramantry, p.85.
[104] *Iron Rhine Arbitration ('Ijzeren Rijn') (Belgium v Netherlands),* Award (2005), RIAA XXVII, pp.35-125, para.59.
[105] *Case Concerning Pulp Mills of the River Uruguay (Argentina v Uruguay)* (2010) I.C.J Reports 2010, p.14, para.101.
[106] Dupy, P,. and Viñuales, J., *International Environmental Law,* (2015), p.149, p.81
[107] Office of the High Commissioner for Human Rights (OHCHR), *Analytical Study on the Relationship between Human Rights and the Environment,* (December 2011), UN Doc. A//HRC/19/34 (OHCHR Analytical Study), p.16.

Potential Emissions Reductions

As discussed, since 1972 countries have debated what should guide the allocation of the burden that they should bear in addressing environmental protection and climate change. Traditionally, countries with the highest capacity and responsibility (i.e. developed countries) have been those to bear the burden of addressing climate change. However, countries with the highest capacity and historical responsibility are not necessarily those with the highest potential for emissions reductions. This is illustrated in **Figure 2**[108] which shows a combination of developed and developing countries and their total CO2 emissions between 2000-2010. The graph illustrates that China is a developing country with a huge potential to reduce CO2 emissions. China's emissions have more than doubled in ten years, increasing by 5,184,360 gigagrams of CO2. Africa and India's CO2 emissions have also risen significantly, increasing by 511,289 and 713,490 gigagrams respectively. This equates to an increase of 6,409,139 gigagrams in China, Africa and India between 2000-2010.[109] An increase that could have been avoided had IEL and global cooperation been sufficient to come to an agreement that enabled developing country Parties to develop sustainably.

Figure 2



As discussed, there was optimism for the negotiations in Copenhagen to provide countries with the allocation of responsibility needed to reach the 2 degree target endorsed in Bali.[110] Yet no agreement could be reached, meaning China, India, Africa and other developing

[108] The UNEP Environmental Data Explorer: as compiled from European Commission, Joint Research Centre, PBL Netherlands Environmental Assessment Agency, United Nations Environment Programme (2016).
[109] The UNEP Environmental Data Explorer: as compiled from European Commission, Joint Research Centre, PBL Netherlands Environmental Assessment Agency, United Nations Environment Programme (2016).
[110] Antypas, A., 'The Copenhagen Accord: Inclusive, meaningful and an important step forward', (2009) 295 *Environmental Law and Management*, p.295.

countries continued to emit dangerous levels of CO2 emissions into the atmosphere from 2010 onwards. Essentially, while negotiations have been taking place, world leaders have missed out on an opportunity to avoid a significant increase in global CO2 emissions.

A major factor in the debate on environmental responsibility is the issue of loss and damage. For developed country Parties this has been the question of whether developing countries should be entitled to special aid in the event of climate related disasters and slow onset events. For developed country parties, this raised concerns of compensation and liability. Loss and damage has been lobbied for by SIDS since the beginning of UNFCCC negotiations[111] but has been repeatedly shunned by developed country Parties who have historically taken charge in IEL negotiations.

3 The Paris Agreement: New Approaches

In light of the issues discussed, the key obstacles facing negotiators at COP21 were: legal structure, accountability and compliance, adaptation through finance in developing countries, loss and damage and of course emissions reductions. The methods used to address these issues and the anticipated success of these methods will be discussed in turn.

Legal Structure & Accountability

The Agreement boasts to be the first 'legally binding and universal agreement on climate change'.[112] Although, under more invasive scrutiny, the Agreement appears to be a hybrid of binding and non-binding elements; for example, the INDCs are non-binding, with no sanctions to come into play if they are breached. There has been much academic debate as to whether this really matters. After all, it is in the best interests of each country to fulfil the commitments made in INDCs, because international relations may suffer if responsibilities are not met. Moreover, while legally binding agreements have a number of advantages such as harsh compliance incentives and the ability to apply the commitments in domestic courts, they also present a number of difficulties. For example, agreements may become more difficult to negotiate, ambitions may be lowered to avoid costly commitments and participation may decrease (such as it did in the Kyoto Protocol where the US declined to participate). Bodansky considers that

> while there are good reasons to believe that legal form enhances compliance, other factors are also important… transparency and accountability mechanisms make it

[111] Alliance of Small Island States (AOSIS).
[112] United Nations Environment Programme, COP21, *Sustainable Innovation Forum* (2015), http://www.cop21paris.org/about/cop21 04 March 2016.

more likely that poor performance will be detected and criticised.[113]

It is perhaps for these reasons that Article 13 of the Paris Agreement introduces an enhanced transparency framework, requiring countries to submit 'emissions inventories' every two years and re-submit their INDCs every five years for peer review 'in order to build mutual trust and confidence and to promote effective implementation'. Clement-Davies considers that relying on transparency and peer pressure to incentivize results, rather than sanctions for breaches 'should put pressure on all to keep strengthening their ambitions and refining their plans, taking account of new technology and fresh experience'.[114] In following a transparency and accountability framework rather than imposing legal obligations, the Agreement does not allow negotiations to repeat the setbacks of the past.

Adaptation

As discussed, the issue of climate finance has proved to be a controversial aspect in the debate on adaptation. Developed countries have historically preferred to use market mechanisms to mobilise financial support to developing countries, while developing countries would prefer finance to be donated to public funds for direct access. A pledge by developed countries to mobilise $100 billion of climate finance until 2025 was established in the Copenhagen Accord and later formalized in the Cancun Climate Change Conference (COP16).[115] A recent study by the OECD assessed the global contribution to climate finance between 2013-2014 through bilateral and multilateral public and private finance.[116] According to the study, while there has been significant progress made towards to $100 billion goal, the actual public and private finance mobilized between 2013-2014 is estimated to have been only $57 billion, with only 16% of that sum contributing to adaptation goals.[117]

This was one of the most pressing issues faced by negotiators at the Paris Conference and has been addressed with some ambiguity in the Agreement. Article 9 of the Agreement states that developed country Parties 'shall biennially communicate indicative quantitative and qualitative information' on projected levels of public financial resources and 'shall provide transparent and consistent information on support for developing countries', but fails to quantify clear adaptation finance goals (largely due to the fact that any quantified obligation would require the US senate to ratify the agreement). Article 9 also provides that developed

[113] Bodansky, D., 'The Paris Agreement 12 December 2015 – legally binding versus non-legally binding instruments' (2016) 27 *Environmental Law and Management* p.188.
[114] Clement-Davies, C., The Paris climate change agreement; a diplomatic triumph and firm foundations for progress' (2016) 1 *International Energy Law Review,* p.2.
[115] Decision 1. CP/16, The Cancun Agreements, (2011), para.98.
[116] 'Climate Finance in 2013-14 and the USD 100 billion goal', *Organisation for Economic Co-operation and Development (OECD) in collaboration with Climate Policy Initiative,* (2015)
[117] *Ibid.,* p.10.

Parties 'shall provide financial resources to assist developing country Parties with respect to both mitigation and adaptation in continuation of their existing obligations under the Convention' and aims to set a new collective quantified goal 'from a floor of USD 100 billion per year';[118] although it remains unclear which Parties will contribute how much and when.

The Paris Agreement is therefore consistent in its approach to addressing adaptation, but its failure to stipulate how much and when countries will provide finance raises questions as to whether the Agreement is yet another set of 'aspirations' rather than realities. A 'business as usual' approach to climate finance would result in the continuation of developed countries failing to meet the $100 billion goal. Further discussion and debate on the issue of adaptation and climate finance is therefore required in forthcoming negotiations to ensure this goal is met and improved upon.

Loss and Damage

Loss and Damage is a contentious and sensitive issue that has not been specifically addressed in climate change agreements, but instead treated as a subcategory of adaptation. Between 1980-2004, losses from natural disasters in developing countries averaged $54 billion per year[119] and, according to a 2012 UN paper, the impacts of slow onset events include a rise in sea levels, increasing temperatures and other environmentally devastating events;[120] all of which are likely to have the greatest effect on developing countries. The paper considers that 'addressing loss and damage associated with slow onset events and processes can ultimately reduce vulnerability and increase resilience'.[121] It is perhaps in light of these findings and the strengthening presence of developing countries in COP negotiations that the Paris Conference was the first to treat loss and damage as a separate issue.

The Agreement decided on the continuation of the 2013 Warsaw Mechanism[122] which promotes implementation of approaches to address loss and damage through enhancing knowledge and understanding of risk management, strengthening dialogue and enhancing action and support through finance, technology and capacity building; a promising step forward. However, developed countries were unwilling to have liability and compensation for

[118] Paris Agreement to the United Nations Framework Convention on Climate Change, ('Paris Agreement'), COP21, Paris, December 2015, Article 9.
[119] Ogden, P., Bovarnick, B., et al., 'Key Principles for Climate Related Risk Insurance', *Center for American Progress*, (2015), p.1.
[120] United Nations Framework Convention on Climate Change, *Slow Onset Events, Technical Paper,* (2012), pp. 8 -11.
[121] *Ibid*., p.40.
[122] The Warsaw International Mechanism for Loss and Damage Associated with Climate Change Impacts ('Loss and Damage Mechanism'), COP19, Poland, November 2013.

loss and damage included in the Agreement, as it would have imposed legal responsibilities on Parties. This has resulted in liability and compensation being explicitly excluded from the Agreement.[123] Shortly after negotiations, during meetings with SIDS, the US announced a $30 million contribution to climate risk insurance initiatives in Central America, Africa and the Pacific to help 'vulnerable populations strengthen their climate resilience'.[124] This contribution forms part of the 2015 G-7 summit goal to extend insurance to 40 million people vulnerable to the adverse effects of changing weather patterns by 2020.[125] After negotiations the UN Secretary General launched 'Anticipate, Absorb, Reshape' a new climate resilience and insurance initiative with the goal to provide $2 billion to around 30 developing countries to 'strengthen the ability of countries to anticipate hazards, absorb shocks and reshape development to reduce climate risks'.[126] Although not part of the Agreement itself, it appears that climate risk insurance initiatives are an effective alternate method in enabling countries to cope with the effects of climate change both pre and post disaster and, if adhered to by Parties, the combination of the prominence of loss and damage in the Agreement and the separate climate risk insurance initiatives should enable developing countries to better manage the slow onset climate events they will face in the future.

The Agreement and its accompanying decision text also make specific reference to the importance of sustainable development, recognising its role in 'reducing the risk of loss and damage';[127] academics believe that the 2015 Agreement makes reference to sustainable development as a 'context in itself'[128] and is therefore 'arguably the most ambitious sustainability policy initiative to date'.[129] Overall, global cooperation has succeeded in reaching a consensus on this issue more easily than anticipated; a real triumph for environmental justice and human rights.

Emissions Reductions

[123] Paris Agreement to the United Nations Framework Convention on Climate Change, ('Paris Agreement'), COP21, Paris, December 2015, Decision Document para.52.
[124]'Diplomacy in Action, US Climate Risk Insurance Announcement', US Department of State, (2015) http://www.state.gov/r/pa/prs/ps/2015/12/250173.htm 30 March 2016.
[125] Leaders' Declaration, 41st G-7 Summit, (2015), p.13.
[126] 'UN Secretary-General's initiative aims to strengthen climate resilience of the world's most vulnerable countries and people', United Nations, (2015) http://www.un.org/sustainabledevelopment/blog/2015/11/un-secretary-generals-initiative-aims-to-strengthen-climate-resilience-of-the-worlds-most-vulnerable-countries-and-people/#prettyPhoto 12 April 2016.
[127] Paris Agreement to the United Nations Framework Convention on Climate Change, ('Paris Agreement'), COP21, Paris, December 2015, Article 8.
[128] *Ibid.,* Article 2, Article 4 and Article 6.
[129] Arbisman, J., 'Navigating Sustainable Development in the WTO', (2016) *22 International Trade Law and Regulation,* p.50.

It is widely understood that the goal to limit the increase in global temperature to well below two degrees Celsius is 'the crucial element of the agreement'.[130] The specific targets for emissions reductions under the Agreement can be found by assessing pledges made by the Parties in INDCs. A recent study by the Grantham Research Institute (Study 2) considers that in order to be effective, the mitigation pledges made in INDCs need to have three key interlinking attributes: ambition, credibility and feasibility as in **Figure 3**.[131]

Figure 3 The three key attributes for effective mitigation pledges:

Feasibility (the ability to meet the costs and gain the resources for implementation) is arguably the most essential attribute. As without the ability to implement the intended contribution, an INDC will fail to be ambitious and will also lose its credibility. On the other hand, the lower the ambition in INDC pledges, the more feasible they will be to meet and the more credible they will appear. Study 2 therefore considers that the relationship between ambition, credibility and feasibility is 'complex and multidirectional'.[132] Prior to the 2015 Conference, the Grantham Research Institute issued a study (Study 1)[133], which found that while there has been progress compared with hypothetical BAU global emissions pathways,

> there is a gap between the emissions pathway that would result from current ambitions…and a pathway that is consistent with a reasonable chance of limiting the rise in global average temperature to no more than 2 degrees C above pre-industrial levels.[134]

Study 1 recommends that the mismatch between the ambitions embodied by the INDCs and

[130] Tanish, L., Chalmers, D., 'Outcomes of the 2015 UN Climate Change Conference' (2016) 173 *Scottish Planning and Environmental Law*, p.7.
[131] Averchenkova, A., Bassi, A., 'Beyond the targets: assessing the political credibility of Indented Nationally Determinded Contributions (INDCs) *ESRC Centre for Climate Change Economics and Policy* (2015).p.10.
[132] *Ibid.,* p.12.
[133] Boyd, R., Cranston, J., et al., 'Intended nationally determined contributions: what are the implications for greenhouse gas emissions in 2030?' *ERSC Centre for Climate Change, Economics and Policy* (2015).
[134] *Ibid.,* p.4.

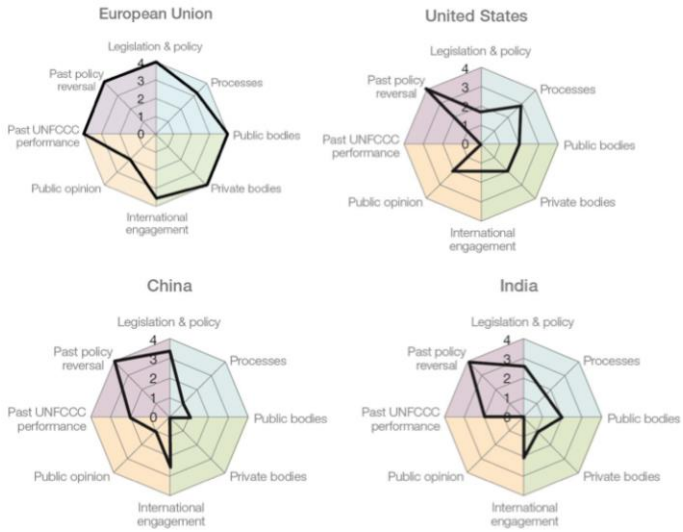
the 2 degree goal means that Parties to the UNFCCC should intensify ambitions. This is acknowledged in the Agreement itself, which states that 'much greater emission reduction efforts will be required'[135] than those associated with the current INDCs in order to achieve the 2 degree goal. As it stands, the current INDCs provided by the US and EU each focus on GHG emissions reduction targets. The EU has set itself a binding target of a reduction of at least 40 per cent by 2030 compared to 1990 levels,[136] while the US has set an economy-wide reduction target of 26-28 per cent by 2025 compared to its 2005 level.[137]

China has taken a different approach, aiming to peak emissions by 2030 through an intensity target, rather than a base year target, and focuses on GHG emissions goals and non-GHG goals.[138] However, as discussed, it is clear that these combined efforts are currently not enough to meet the ultimate goal of the Agreement. While much of the debate focuses on the ambition of INDCs in comparison with the IPCC scenarios consistent with preventing the global temperature rise of 2 degrees Celsius, the political credibility of these INDCs (i.e. whether they are reliable and achievable) and their ability to be implemented effectively is no less important. Study 2 considers that credible emission reduction targets promotes 'greater trust among counties and stimulates upward drive in the collective level of ambition'[139], thus creating positive dynamics between Parties. The study also considers that credible INDCs are more likely to attract investment, which is essential for implementation where pledges depend upon finance.

Study 2 identifies key determinants of credibility, including: a coherent legislative and policy basis, a transparent decision making process, dedicated public and private bodies, a history of international engagement, a climate-aware public opinion and a track record of delivering on climate change commitments. The study scores each of these determinants for each Party to conclude whether they are *fully, largely, moderately, slightly* or *not supportive* to the overall

[135] Paris Agreement to the United Nations Framework Convention on Climate Change, ('Paris Agreement'), COP21, Paris, December 2015, Decision document, para.17.
[136] European Union, Intended Nationally Determined Contribution, (2015), p.1 http://www4.unfccc.int/submissions/INDC/Published%20Documents/Latvia/1/LV-03-06-EU%20INDC.pdf (accessed February 2016).
[137] United States Independent Nationally Determined Contribution, (2015), p.1 http://www4.unfccc.int/submissions/INDC/Published%20Documents/United%20States%20of%20America/1/U.S.%20Cover%20Note%20INDC%20and%20Accompanying%20Information.pdf (accessed March 2016).
[138] China Independent Nationally Determined Contribution, (2015), p.7 http://www4.unfccc.int/submissions/INDC/Published%20Documents/China/1/China's%20INDC%20-%20on%2030%20June%202015.pdf (accessed March 2016).
[139] Averchenkova, A., Bassi, A., 'Beyond the targets: assessing the political credibility of Indented Nationally Determinded Contributions (INDCs) *ESRC Centre for Climate Change Economics and Policy* (2015), p.5.

credibility of their INDC. The study found that in general, the INDCs appear to score *moderately* well across all the determinants of credibility, with notable variations between developed and emerging economies. The latter tend to score lower on effective decision making processes, dedicated public and private bodies and a climate-aware public opinion affirming the case for attention to capacity building and adaptation in developing countries – as illustrated in **Figure 4 Analysis of credibility for key Parties**: [140].



Scale:

0.0.5: not supportive of credibility;

0.5-1.5: slightly supportive;

1.5-2.5: moderately supportive;

2/5-3.5: largely supportive;

3.5-4: fully supportive.[141]

Figure 4 shows that although China and India score relatively high on legislation and policy, their credibility is weakened by all of the other determinants, especially public opinion and dedicated public and private bodies. The credibility of the US pledges appear to be equally discouraging, despite the country's wealth and access to resources. On the other hand, the EU scores either *largely* or *fully supportive* on all the determinants. Study 2 therefore highlights one of the key problems for the Paris Agreement and beyond; while China, India and the US have the highest potential for emissions reductions, their pledges to reduce are emissions are the least credible. The potential affect these INDCs will have on IEL and in the fight against climate change therefore not only depends on the content of the pledges made by Parties, but on their political credibility. The lack of credibility in the pledges made by the US, China and India casts doubt as to whether pledges will be adhered to. Furthermore, the insufficiency of the INDCs as a whole suggests that even if they were to be adhered to, the 2 degree goal will not be met anyway.

[140] Ibid., p.50.

[141] Averchenkova, A., Bassi, A., 'Beyond the targets: assessing the political credibility of Indented Nationally Determinded Contributions (INDCs) *ESRC Centre for Climate Change Economics and Policy* (December 2015), p.38

Conclusion

Figures 5 and 6 show that since IEL negotiations began at the Stockholm Conference, emission levels from the world's largest emitters of CO2[142] have increased from 12,546 metric tons of carbon dioxide (MtCO2) in 1972 to 26,543 MtCO2 in 2014 (a total rise of 13,997 MtCO2). The largest increase in emissions are in the developing countries of China and India, who by 2014 emitted over ten times more MtCO2 than in 1972.

Figure 5: [143]

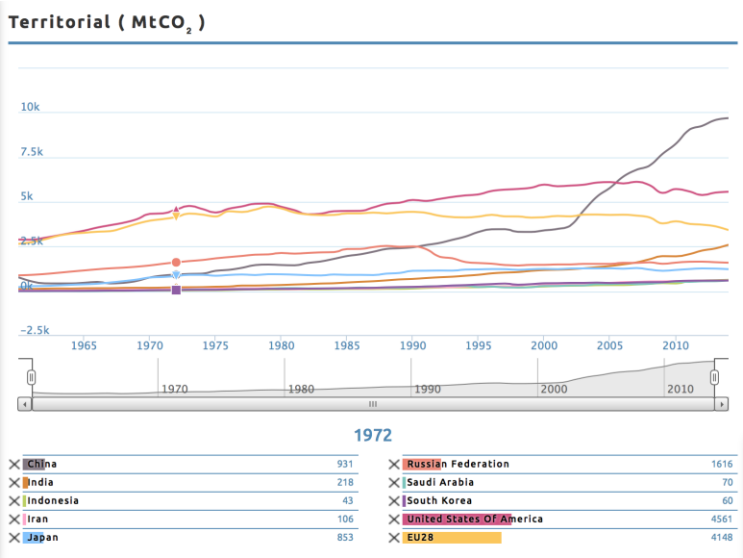
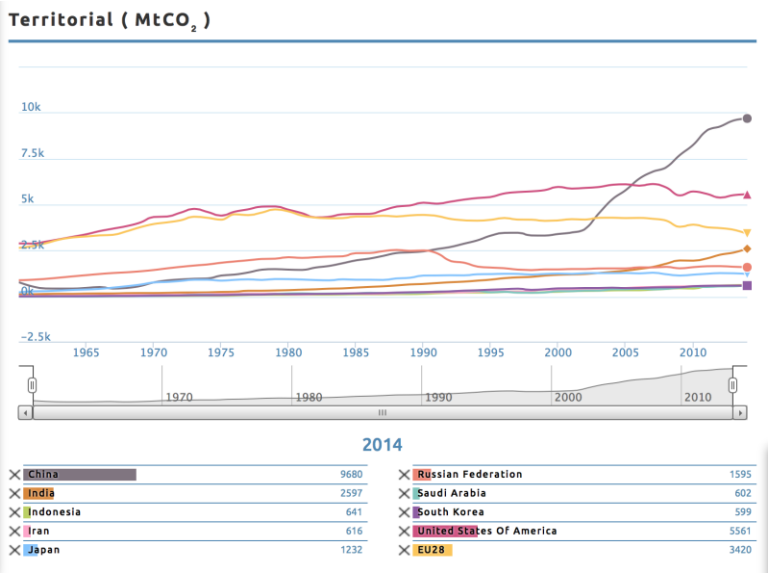


Figure 6



[144]

[142] Including: China, India, Indonesia, Iran, Japan, Russian Federation, Saudi Arabia, South Korea, the United States and the European Union.
[143] Graph created at: Global Carbon Project, *Global Carbon Atlas,* (no date) http://www.globalcarbonatlas.org/?q=emissions 30 April 2016.
[144] *Ibid.*

The point is that since negotiations began, world leaders have missed out on numerous opportunities to prevent a dangerous increase in CO2 emissions in developing countries. **Figures 5 and 6** show that although US and EU emissions decreased between 2002-2014, developing countries such as China, India, and Indonesia saw a dramatic increase in emissions over the same period of time. The reason for this extreme difference in emissions levels is clear; while IEL agreements have imposed some emissions restrictions on *developed* country Parties, they have failed to support and facilitate *developing* countries to develop sustainably and reduce emissions. Consequently, developing countries have continued to emit dangerous levels of CO2 at an unprecedented speed. The only party in Appendix 5 that has seen a significant reduction in CO2 emissions since 1972 is the EU (a reduction of 728 MtCO2 by 2014).

It must be noted that the failure to prevent a dangerous increase in global emissions is not necessarily due to other Parties failing to meet IEL targets. As developing countries were all listed as non-Annex 1 Parties under the Kyoto Protocol, they were subject to no targets and put under no obligation to reduce emissions. Furthermore, in hindsight, the global community can now appreciate that even if developed Parties had met their targets consistently, no matter how ambitious, developed country efforts alone were simply not enough to prevent a dangerous increase in global CO2 emissions.

It is for these reasons that the Paris Agreement is so welcomed by academics and environmentalists. The Agreement abolished the binary split between Annex 1 and non-Annex 1 Parties and is the first to truly address the issue of loss and damage, adaptation and sustainability, thus providing a realistic platform for emissions reduction in both developed *and* developing countries.

The Agreement is not legally binding, but rather a hybrid of legally binding and non-legally binding components, with INDCs being non-binding. Article 13 of the Agreement instead imposes a strong transparency and accountability framework, although there is nothing to suggest that this will have a negative effect on compliance. In fact, Clement-Davies has argued that relying on transparency and peer pressure to incentivize results, rather than sanctions for breaches is a more pragmatic way forward[145] and avoids a repeat of the mistakes of the past, Furthermore, while the Agreement recognises that the current pledges as set out in INDCs are not enough to prevent a rise in global temperature of 2 degrees Celsius, the recent

[145] Clement-Davies, C., The Paris climate change agreement; a diplomatic triumph and firm foundations for progress' (2016) 1 *International Energy Law Review*, p.2

advances in global cooperation between the world's three largest emitters (China, the US and the EU) provide optimism for the strengthening of INDCs and for the forthcoming COP22 negotiations in Marrakesh.

In conclusion, while IEL has contributed to the protection of the global environment and in the fight against climate change by raising a climate-aware community, strengthening international relations, establishing scientific bodies such as the IPCC and promoting sustainable development, in terms of actual goal setting and target meeting, IEL has essentially been aspirational rather than successful. However, it is clear that the Paris Agreement represents a new paradigm, bringing the global community closer than ever to an aspirational but achievable goal endorsed by the IPCC. In the meantime, there is still much work to be done to ensure that Parties strengthen and adhere to INDC pledges and that developing countries receive the support necessary to meet their pledges and reduce emissions. The next step for IEL will be to ensure strong and sustained political action both bilaterally and through the UN climate regime to codify the detailed rules of the Agreement and how they will work in practice.