

“Law is the bridge between scientific knowledge and political action.”¹

“The earth was designed as the permanent abode of man through ceaseless generations. Each generation, as it appears upon the scene, is entitled only to use the fair inheritance. It is against the law of nature that any waste should be committed to the disadvantage of succeeding tenants. ... That one generation may not only consume or destroy the annual increase of products of the earth, but the stock also, thus leaving an inadequate provision for the multitude of successors which it brings to life, is a notion so repugnant to reason as scarcely to need formal refutation.”²

Commentary

1. Introduction

It is beyond cavil that climate change poses grave and irreversible risks to mankind, other living species and nature.³ A preponderance of scientific evidence and opinion supports that fact; it suggests that the average global temperature should, at least, not exceed a threshold of 2 degrees Celsius above the pre-industrial level (hereinafter also referred to as the two-degree threshold).⁴

¹ Sultan Azlan Shah, *The New Millennium: Challenges and Responsibilities*, lecture to Universiti Kebangsaan Malaysia, 23 August 1997, quoted by Lord Carnwath, *Environmental law in a global society*, lecture given at Kuala Lumpur on 9 October 2014; can be downloaded from the website of the Supreme Court (of the UK). At the end of his presentation, Lord Carnwath concluded as follows: “(...) we have built up for ourselves and our fellow creatures environmental problems of an unprecedented scale and complexity. One cause for hope is that unlike those other civilisations we have the understanding or the means of understanding what is happening, and what we could do about it. On the science there is a remarkable degree of consensus. The problem is to translate that understanding into political action. Here above all we may find ourselves looking to the law to provide a bridge, and to the judges to offer at least some of the building blocks.”

² U.S. argument in the 1893 Bering Sea Fur Seals Arbitration, quoted by Burns H. Weston and Tracy Bach, *Recalibrating the Law of Humans with the Laws of Nature: Climate Change, Human Rights, and Intergenerational Justice* 2009, www.vermontlaw.edu/...Law.../Publications-x4059.htm, p. 38.

³ IPCC, *Fifth Assessment Synthesis Report, Summary for Policymakers*, 1 November 2014 p. SPM 3ff. and in more detail IPCC *Fifth Assessment Synthesis Report, Climate Change 2014, Longer Report* p. SYR-9 ff.

⁴ See, f.i., Michael B. Gerrard, in Michael B. Gerrard and Jody Freeman (eds.), *Global Climate Change and U.S. Law* (2nd ed. 2014) p. 5: “approximately 97% of the scientists working on climate change research agree that the earth is warming and that greenhouse gas emissions are the principal cause” and “virtually every other [than the U.S.] major nation in the world (and many smaller nations) have joined in declarations that human activities are having an adverse impact on the global climate.”

The globally averaged mole fractions of greenhouse gases have reached new heights in 2013. The atmospheric increase of CO₂ from 2012 to 2013 is the largest year-to-year change from 1984 to 2013.⁵ PwC (Price Waterhouse Cooper) warns that at current rates of decarbonisation⁶ of 0,9%, “we would be heading towards the worst projected scenario of the IPCC, leading to a significant chance of exceeding 4 (degrees) Celsius of warming”.⁷ The World Bank is even more pessimistic:

“(…) the likelihood of 4 (degrees) C warming being reached or exceeded this century has increased, in the absence of near-term actions and further commitments to reduce emissions. The report reaffirms the International Energy Agency’s 2012 assessment that in the absence of further mitigation action there is a 40 percent chance of warming exceeding 4 (degrees) C by 2100 and a 10 percent chance of it exceeding 5 (degrees) C in the same period. The 4 (degrees) C scenario does not suggest that global mean temperatures would stabilize at this level; rather, emission scenarios leading to such warming would very likely lead to further increases in both temperature and sea-level during the 22nd century”.⁸

Referring to the IPCC, the 2014 version of the World Bank report points to “much higher warming levels exceeding 6°C or more in the long term.”⁹ It points to a series of extreme events occurring since the 1960s.¹⁰

Climate change, if allowed to continue, will have disastrous consequences for life on earth generally. It will cause enormous harm for very large numbers of people. That is supported by the same scientific evidence and opinion. These sources also suggest that there is a limited amount of time within which measures to avoid passing the two-degree threshold can adequately be taken – i.e., that there is an urgent need to take

⁵ WMO (World Meteorological Organization) Greenhouse Gas Bulletin, No. 10/9 September 2014, p. 1.

⁶ The term decarbonisation is used in the PWC report.

⁷ PwC, Two degrees of separation: ambition and reality, Low Carbon Economy Index, September 2014 p. 3.

⁸ Turn Down the Heat, Climate Extremes, Regional Impacts and the Case for Resilience, report 78424, June 2013, p. xv. Interestingly, the message in the updated report of 2014 (nr. 92704 v2) is more concise. The figures are still the same; e.g., the last paragraph has been deleted (p. xviii; see also p. 5).

⁹ O.c. p. 1.

¹⁰ O.c. (2014) p. 8 ff.

these measures. Finally, these sources agree that countervailing measures are feasible, and at costs that would not be prohibitive to the relevant parties.¹¹

World leaders, international institutions and, increasingly, business leaders have, clearly and loudly, expressed serious concern.¹² Several pledges have been made to the effect that steps must be taken to secure that the world's mean temperature does not pass the two-degree threshold. This stance has continuously been taken, despite the reservations of the small number of dissenting climate scientists and of sceptics.

Despite the laudable pledges by leading politicians around the globe and a series of urgent calls made by prestigious international organisations, political actions do not keep pace with these promises and calls; they fall short of doing the minimum necessary to avoid that the two-degree threshold will be passed.¹³ As things stand right now, there is not much reason to believe that politicians will be able to strike compromises to the extent needed in time. This regrettable state of affairs serves as an incentive, if not imperative, to explore potentially promising avenues to stem the tide.

The swiftly emerging unease and, in some instances, understandable anger have served as a stimulus for a series of international institutions, countries, politicians, business

¹¹ See N. Stern, *The Economics of Climate Change*, <http://webarchive.nationalarchives.gov.uk>.

¹² E.g., Decision 1/CP.19 (Warsaw COP-meeting), “serious concern” and “unprecedented changes”, “substantial and sustained reductions” are required; see also ICC’s (International Chamber of Commerce) Commission on Environment and Energy, Trade and Climate change; industry is particularly concerned about unilateral trade-related measures disturbing the level playing field; see iccwbo.org website. See also Ceres, *Insurer Climate Risk, Disclosure, Survey Report & Scoreboard: 2014 Findings and Recommendations*, www.ceres.org/Reports.

¹³ That is widely acknowledged; see e.g. Decision 1/CP.19: “Underlining the significant gap between the aggregate effect of Parties’ mitigation pledges in terms of annual emissions of greenhouse gases by 2020 and aggregate emission pathways consistent with having a likely chance of holding the increase in global average temperature below 2o or 1,5 C above the pre-industrial levels”. Thus, also, Decision -/CP.20 (Advance unedited version) p. 1: “Noting with grave concern the significant gap between the aggregate effect of Parties’ mitigation pledges in terms of global annual emissions of greenhouse gases by 2020 and aggregate emission pathways consistent with having a likely chance of holding the increase in global average temperature below 2 [degrees] C or 1.5 [degrees] C above pre-industrial levels”.

leaders, non-governmental organisations and major investors to sound the alarm and, to a lesser extent, to take action.¹⁴ So far, most steps taken or considered by governments fall short of what is needed: major reductions of GHG emissions.

There is an increasingly intense debate about legal aspects of climate change.¹⁵ Armies of academics, some members of the judiciary, and practising lawyers have paid attention to a myriad of legal issues in relation to climate change. Part of this debate is about the question whether climate change is an *issue* under international law, human rights law, national environmental law and, to a lesser extent, tort law. Ever more leading academics answer this question in the affirmative.

Naturally, there is much that can still be described as uncharted territory. In particular, there is one core question that requires answering: what are the respective *legal obligations* of States and enterprises to reduce their GHG emissions? So long as one cannot determine what must be done by each respective player, the law can only play a limited role.¹⁶ Our group has tried to fill this gap.

¹⁴ According to Steven J Davis and Robert H Socolow, Commitment accounting of CO₂ emissions, *Environmental Research Letters* 9 (2014) p. 1ff: more attention were to be paid to future emissions related to new capital investments.

¹⁵ The tone of the debate has changed. In November 2007, representatives of the Small Island States issued the “Male’ Declaration on the Human Dimension of Global Climate Change. They “solemnly” submitted a few “requests”. Since then the debate has become more heated. Many – predominantly the most vulnerable countries – are very frustrated about the pace of progress in the international arena; they are increasingly exploring legal strategies.

¹⁶ This is not to say that the debate is meaningless; a series of procedural obligations come into play. But the latter will be much more effective if substantive obligations are sufficiently clear. By way of example: impact assessments are undoubtedly useful, but it is quite a challenge to carry them out as long as the legal obligations of the player are up in the clouds. That is not to suggest that they are useless. Even if the legal obligations of a specific enterprise are unknown, it remains possible to determine whether or not it applies “best practices” and/or is energy-efficient to the extent feasible.

We believe that prevention should be our first and foremost focus.¹⁷ If we cannot tame the hydra, catastrophe will set in, catastrophes that can still largely be avoided.¹⁸

We realise, of course, that our submissions could and will be challenged. There may be alternative methods of determining the obligations of the respective players. Countries could strike compromises in international agreements, thus allocating the obligations in different ways. It can only be hoped that politicians will forgo the present lethargy. International agreement(s) would be the best solution if and to the extent they are sufficient to avoid that the fatal threshold will be passed. Until that happens, reliance on other sources or areas of law is unavoidable. These sources are imperfect when it comes to answering the question, what has to be done by whom and why that is the case. But their ability to form a sound foundation for concrete obligations to avert the dangers of climate change should also not be underestimated.

Given that our focus is on prevention, we do not express a view on other important issues, such as adaptation, damages and climate change refugees.¹⁹

¹⁷ The outcome of the latest COP meeting in Lima opts for a slightly different approach, i.e., addressing in “a balanced manner, inter alia, mitigation, adaptation, finance, technology development and transfer, and capacity building, and transparency of action and support” (Decision -/CP.20, Advance unedited version supra 2 p. 1).

¹⁸ See, for a similar view, IFC (part of the World Bank Group), IFC Performance Standards on Environmental and Social Sustainability, p. 6. The ILA draft (Legal Principles relating to Climate Change, Washington Conference 2014) places some emphasis on prevention; see f.i. Commentary to art. 2 supra 3, art. 3 para 2 and 5, art. 4 para 3, Commentary to art. 5 supra 8 and to art. 7A supra 4 and 5. But ILA does not take a bold stance: it observes that art. 7A does not express a priority, “although, where possible, mitigation should take priority” (idem supra 8). See also Art. 13 ILC Resolution on responsibility and liability under international law for environmental damages and Philippe Sands and Jacqueline Peel, *Principles of International International Law*, 3rd. ed (2012) p. 277, pointing to the UNFCCC Convention.

¹⁹ As to the former two, opinions are rather divided among the members of our group. See, for a series of climate change issues: Oliver C. Ruppel, Christian Roschmann and Katharina Ruppel-Schlichting (eds.), *Climate Change: International Law and Global Governance*.

Leading academics have pointed to a series of potential obstacles to litigating climate change cases.²⁰ The three most obvious obstacles are probably that most individual states and enterprises make only minimal contributions to the global threat,²¹ the “political question argument” (for practical purposes, the unwillingness of judges to deal with the matter and their deference to elected officials) and lack of (adequate) obligations or targets set by international conventions or perhaps even *national* legislation.²² These issues and a series of other potential hurdles need to be addressed if a credible picture of the *enforceable* legal obligations of the respective players is to be provided. With the exception of minimal causation, we do not tackle these issues. However, we believe that the mere setting out of a solid footing for the definition of legal obligations of States, enterprises and other actors in the field of climate change can serve a useful purpose, regardless of whether the obligations defined can be enforced by remedies, such as injunctions, issued by courts.

We realise, of course, that our Principles are, in the short-run, quite demanding for States and enterprises. The obligations embedded in our Principles go well beyond the international “consensus”.²³ Unlike the present reductions by most countries and enterprises, they are in line with the almost commonly accepted view that we must avoid the passing of the dangerous two-degree threshold.²⁴ When a long-run perspective is taken, it can be tenably argued that the cost of immediate action will be considerably lower than the cost of mitigation and adaption if we carry on with business as usual.

²⁰ See e.g. D.A. Kysar, What Climate Change Can Do about Tort Law, http://digitalcommons.law.yale.edu/fss_papers/3849.

²¹ That is a causation and a wrongfulness issue; the latter will be discussed below.

²² See, for a crystal clear and concise overview, Michael Gerrard, What Litigation of a Climate Nuisance Suit Might Look Like, YLSO Essay 13 September 2011; see also Jaap Spier, Shaping the Law for global crises pp. 163ff. and in Jaap Spier and Ulrich Magnus (eds.), Climate change remedies, p. 10ff. and 96/97.

²³ Unlike politicians, we did not “balance ambition and realism using some guidelines” (A new global partnership: eradicate poverty and transform economies through sustainable development, The Report of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda, p. 15), seemingly a soft wording for insufficient steps.

²⁴ Even an increase of 2 degrees Celsius in global temperatures entails major risks; see in more detail IDDRI, pathways to deep carbonization p. 3.

We sincerely hope that our Principles will contribute to a solution to the greatest challenge and threat for mankind in living memory.

We have acknowledged the most useful work of the ILA. Its Draft Principles aim to “provide considerations that decision-makers must take into account.”²⁵ The same goes for our Principles. If “decision-makers” (political leaders, governmental agencies and business leaders) fail to comply with their obligations as described, they could serve as a basis for legal enforcement by means of injunctive relief. Furthermore, these principles are intended to also serve as guidance to investors, supervisory institutions and auditors about steps that must be taken by enterprises.

After our meeting in Oslo, the IBA (International Bar Association) launched a most interesting report: *Achieving Justice and Human Rights in an Era of Climate Disruption*.²⁶ Unlike our principles, the report emphasises adaptation and compensation, although it labels mitigation (including the planet’s capacity to absorb GHGs) as the “first strategy”. The IBA rightly observes that mitigation and adaptation raise justice issues.²⁷ The IBA advocates strategies to make climate change obligations concrete;²⁸ that is exactly the purpose of our principles.

In 2009 the World Wildlife Fund (WWF) issued an important report: *Sharing the effort under a global carbon budget*.²⁹ WWF proposes three trajectories to come to grips with climate change. One of our core principles aligns with the WWF’s contraction and convergence submission. The WWF suggests the following: “as a first step, all countries agree on a path to future global emissions that leads to an agreed long-term stabilisation level for greenhouse gas concentrations (“contraction”). As a second step, the targets for individual countries are set in such a way that per capita

²⁵ O.c. commentary to Art. 2 supra 1.

²⁶ According to the acknowledgements, two of our members (John Knox and Michael Gerrard) have contributed to this report.

²⁷ P. 4.

²⁸ E.g. p. 8, 9, 26, 27, 118, 121 (but only “minimum core”) and 127.

²⁹ Authors: Niklas Höhne and Sara Moltman.

emission allowances converge from the countries' current level to a level equal for all countries within a given period (convergence). The convergence level is calculated at a level that resulting global emissions follow the agreed global emission path.”³⁰ The major difference between the WWF's report and our principles is that the WWF still stressed the need for agreement among nation states. That would indeed be very desirable, but in the short term it is almost certainly a mirage; it would already be a giant step forward if the COP in Paris would result in *any* concrete agreement on reduction of GHG emissions and if that agreement would be ratified by countries around the globe. In our view, States are *legally obliged* to reduce their GHG emissions, even if they do not conclude (further) international agreements or conventions. Besides, our principles are much more detailed and provide a series of additional obligations of a substantive and procedural nature. That said, we largely endorse the WWF's contraction and convergence approach.

2. The group and its working method

Thomas Pogge and Jaap Spier have taken the initiative to convene a group of distinguished experts from various countries and diverse legal backgrounds to explore whether it would be possible to determine the legal obligations of States and enterprises as concretely as possible. The group has accepted the challenge; these Principles are the fruit of its work.

The first meetings (The Hague, New York and London) were attended by Michael Gerrard of the United States, Toon Huydecoper of The Netherlands, Michael Kirby of Australia, Thomas Pogge of the United States, Dinah Shelton of the United States (New York), Jim Silk of the United States, and Jaap Spier of The Netherlands, and Philip Sutherland of South Africa (London and New York). At the second and third meetings, drafts produced by Jaap Spier were discussed and were largely adopted with

³⁰ O.c. p. 14 and 15. If we understand correctly, the WWF's submission is based on reduction compared to 1990 levels (o.c. p. 5 and 11). Thus, it seemingly introduces (a kind of) historical obligation, at any rate as from 1990 onwards.

the exception of duties of enterprises. The preamble is an abbreviated version of the impressive and eloquent draft by Michael Kirby.

After the London meeting, the members of the group were keen to expand it. In particular, the members wanted to extend membership to representatives from countries that were not yet represented. At its meeting in Oslo, Antonio Benjamin of Brazil, M.C. Mehta of India, Qin Tianbao of China and Jessica Simor of the U.K. joined the group. The group had the privilege to benefit from the insights of the Independent UN expert John Knox of the United States, who attended the first and the third meeting; John Knox is, however, not in a position to express a view on or support the principles. Due to personal circumstances, Elisabeth Steiner of Austria³¹ could not attend the meetings, but she expresses support for the principles.

On the basis of the discussions in London and an updated draft about obligations of enterprises by Michael Gerrard, the text of the principles has been amended. A commentary to the principles was drafted by Jaap Spier. Thomas Pogge and Philip Sutherland have suggested many improvements to the commentary which are incorporated in this draft. The updated draft and the principles related to enterprises were discussed in Oslo. The group has reached agreement on the obligations of States and, to some extent, also of enterprises. An updated draft has been circulated; the comments have been incorporated. This pre-final draft of the principles was subsequently edited by Jim Silk. The edited version and the updated commentary have again been distributed among the members. Michael Gerrard has submitted a series of suggestions and observations; these have been addressed by Jim Silk on the basis of comments by Philip Sutherland and Jaap Spier in the final draft, the present text. The amended text has been distributed among and was approved by the members.

Three students of Jim Silk's Allard K. Lowenstein International Human Rights Clinic – Ben Farkas, Allana Kembabazi and Stephanie Safdi – have provided the group with a most valuable report,

http://www.law.yale.edu/Climate_and_Human_Rights_Memo.Final.pdf.

³¹ She has been a member from the very beginning.

Fiona Kinniburgh, a collaborator of Michael Gerrard, has drafted a most useful overview in relation to efficiency measures that could be taken; that report can be downloaded from http://web.law.columbia.edu/sites/default/files/microsites/climate-change/files/Publications/Students/Specific%20Measures%20to%20Combat%20Climate%20Change%20-%20Compilation_Final.pdf.

The meetings in The Hague, London (in part) and New York (in part) have received generous financial support from the Heinrich Böll Foundation; the meeting in London by the Dixon Poon School of Law, Kings College London; the meeting in Oslo from the Centre for the Study of Mind in Nature at the University of Oslo.

As already mentioned, the International Law Association is also in the process of drafting legal principles relating to climate change.³² Its admirable draft submits a series of highly important principles. There is some overlap between the ILA draft and ours, but both drafts primarily complement each other.

The current text of the commentary includes minor edits made since its original release on March 30, 2015.

3.1 The core principles should be as clear as is reasonably possible

There is a heated debate about the allocation of the reduction burden. A major part of that discussion is fuelled by the common but differentiated responsibility debate; see below *supra* Principle 14. It is understandable that opinions on this subject diverge significantly.

In the extensive debate that has primarily taken place in the non-legal literature, a plethora of considerations that can be used to determine the allocation of reduction responsibilities has been bandied about.³³ Most of them have merits. However, we

³² To the best of our knowledge, the Washington version of 2014 is the ILA latest draft.

³³ See, for further elaboration, *inter alia*: Shaping the law for global crises, *o.c.* p. 107ff.; Jaap Spier in *Climate change remedies* nr 1.4.6 and recently Humberto Llavador, John Roemer and

believe that we should not unnecessarily complicate matters. Overly sophisticated formulas may be fair on paper, but unworkable in practice.

First, many of the criteria are unavoidably vague; thus (national) courts and parties to the obligations would have too much manoeuvring room, which would create uncertainty and inequality.

Secondly, the greater number of the factors that carry weight, the more the respective obligations will vary over time, as they will be dependent on ever-shifting consideration.

It follows that, to some extent, we cannot do without simplified criteria.

Nevertheless, the principles give special consideration to the special position of vulnerable countries (see Principles 8, 9, 10, 13, 14, 15, 16, 17, 18, 19b, 20, 21 and 23), despite making use of simplified criteria.

3.2 Per capita approach

We have adopted a “per capita approach”³⁴ as a point of departure. This means that each human being is entitled to the same GHG emissions.³⁵ There are several reasons for this position, predominantly:

Joaquim Silvestre, How to Allocate CO2 Emissions, YaleGlobal online, <http://yaleglobal.edu/print/8691>; Sumudu Atapattu, Climate change, Equity and Differentiated Responsibilities: Does the Present Climate Change Regime Favor Developing Countries?; the contributions to What next, Volume III/September 2012.

³⁴ This approach is supported by, among many others, Felix Ekardt, Umweltverfassung und “Schutzpflichten”, NVwZ 2013, 1105 ff; Frédéric-Paul Pigué, La justice distributive face au risque de basculement climatique: quelle cohérence morale et épistémologique? See, in more detail, Shaping the law for global crises, o.c. p. 127ff. and in particular Peter Michael Lawrence, Justice for Future Generations: Climate Change and International Law, thesis Tilburg 2013 p. 107ff. and 210ff. with further references. Pathways to deep carbonization, advocates per capita emissions by 2050 as benchmark, o.c. p. 21 and 22. See also the Preamble of the UNFCCC Convention and Philippe Sands and Jacqueline Peel, Principles of International International Law, 3rd. ed (2012) p. 277

³⁵ Naturally, the population of countries will be calculated on an annual basis; see Definitions 3 and 4.

- * fairness: human beings are equal and it would be unfair to allocate diverging emission rights;³⁶
- * it allows for the indirect accommodation of the level of “development” of a country as the economic development produces greater GHG emissions;
- * it broadly accommodates the historical contributions of countries. As a matter of fact, most countries with small or relatively modest per capita GHG emissions at this time also did not emit much GHG in the past.³⁷ Conversely and as a rule of thumb, countries with large per capita GHG emissions right now are mostly the major contributors to historical emissions;
- * this approach allows countries with modest GHG emissions below the permissible level to increase their GHG emissions, within the boundaries mentioned in Principles 14 and 15;
- * it can easily be “calculated”, unlike a formula based on a series of vague determinants.

We realise, of course, that use of per capita emissions does not necessarily do full justice to (all) vulnerable nations. We do not, for instance, deny that it is open to debate whether it fully, or even sufficiently, copes with the diverging GHG emissions in the past. So far, the debate about “historical contributions” has been rather vague and undetermined.³⁸ We have been unable to glean more specific legal principles and rules from the law, including international instruments, case law and well-established

³⁶ See also the report by the Lowenstein Clinic, *supra*, the principle of equality.

³⁷ There are exceptions to this rule, such as some OPEC countries.

³⁸ See, on this and related topics, Equitable access to sustainable development, Contribution to the body of scientific knowledge, a paper by experts from BASIC countries, drafted by Harald Winkler, T. Jayaraman, Jiahua Pan, Adriano Santhiago de Oliveira, Yongsheng Zhang, Girish Sant, Jose Domingos Gonzalez Miguez, Thapelo Lelete, Andrew Marquard and Stefan Raubenheimer.

legal concepts.³⁹ It follows, we think, that it is hardly possible to determine the *legal* impact of GHG emissions in the past.⁴⁰

We appreciate the debate about historical contributions and the other factors mentioned in Principle 16. We could imagine that a more subtle approach, based on a series of relevant factors, might do more justice in specific instances. But we believe some sophistication has to be traded off against certainty. A formula entirely or predominantly based on open or vague criteria will not work; it will unnecessarily complicate things. Such a formula would be a stumbling block for global solutions and, by the same token, also for the protection of the most vulnerable countries: if we opt for solutions that will not work because they do not point to sufficiently clear and operable reduction obligations, the entire globe would be worse off. For these reasons, we do not explicitly provide for the lowering of obligations of countries with limited GHG emissions in the past. It also is difficult to discern a legal basis upon which historical contributions can be accommodated more directly. Yet, the principles provide some flexibility to reach fair and equitable results in concrete cases; see Principles 16, and also 9, 21 and 23.

³⁹ All the more so as the scene has changed; e.g., several very wealthy countries in the Middle East have become major emitters; see Richard Heede, Tracing anthropogenic carbon dioxide and methane emissions to fossil fuel and cement producers, 1854-2000, Springerlink.com. Others have struggled with the same difficulty; thus, e.g., Xosila Ngwadla and Lavanya Rajamani, Operationalising an equity reference framework in the climate change regime, Legal and technical perspectives. They rightly observe that “the choice of period under consideration can lead to significant changes in responsibility”; they do not make a choice (p. 19 and footnote 34). See also WBGU, Solving the climate dilemma: The budget approach (2009) p. 25.

⁴⁰ The ILA draft and the commentary thereto go into quite some detail in relation to the common but differentiated responsibilities (article 5, particularly para 3). The impressive commentary seems to underscore our view that there is no sound legal basis for more concrete submissions. See also Shaping the law for global crises, o.c. p. 110ff.; Climate change remedies p. 43ff and Benito Müller, Niklas Höhne and Christian Ellermann, Differentiating (Historic) Responsibilities for Climate Change; Jonathan Pickering, Steve Vanderheiden and Seumas Müller, “If Equity’s In, We’re Out”: Scope for Fairness in the Next Global Climate Agreement; Lukas H. Meyer and Dominic Roser, Distributive Justice and Climate Change. The Allocation of Emission Rights; David Müller, Global Justice and Climate Change: How Should Responsibilities Be Distributed?; Humberto Llavador, John Roemer and Joaquim Silvestre, How to Allocate CO2 Emissions, <http://yaleglobal.yale.edu/print/8691>.

Although we do not find a clear legal basis for greater protection to countries that have made small historical contributions to global emissions, we would nevertheless welcome any attempts by international treaties to further restrict the obligations of these countries. Nevertheless, such restrictions should be allowed only by concomitant increases in the obligations of others.

The per capita approach does not yet answer the question how to allocate the reduction burden among countries, but it lays the basis for making such a determination. In our submission, the reductions needed in line with Principle 6 have to be achieved by countries with GHG emissions above the permissible level as defined in Principle 3. If below permissible quantum countries as defined in Principle 4 would also have to bear part of the reduction burden at their own expense, the per capita approach would be undermined. With a few possible exceptions, such as “developed countries” largely depending on nuclear energy, below permissible quantum countries do not bear a relevant historical responsibility for the impending crisis. Besides, a major part of the population of many of these countries is very poor. It would be unfair to require reductions from those countries, unless these reductions do not impose more than a minimal financial burden or are financed by others. We realise that “minimal” is rather vague. Its meaning has to be determined on the basis of all relevant factors of the case in point.

4. Legal basis for far-reaching reduction requirements

4.1 An amalgamation of legal sources

So far, the legal debate about legal duties to mitigate climate change has taken place in the following areas: human rights, international, constitutional, environmental and, to a lesser extent, tort law.

A sound legal underpinning, based on international law, would obviously entail many advantages: it “applies” world-wide or, at least, in major regions, it has – at least on paper – a higher status than national law, and it *may* be easier to enforce, at least in theory. International law – encompassing human rights law – provides a rather strong basis for the submission that steps must be taken to avoid the passing of the fatal

threshold: Principles 6 and 13. Unfortunately, it does not provide sufficiently precise guidance as to the *concrete* obligations of individual countries. To achieve that, reliance on other areas of law is necessary.⁴¹

In our view, only an amalgamation of legal sources can provide a sufficiently sound underpinning for our principles; international law, legislation, case law and doctrine from these sources reinforce one another. We cannot yet support our principles with references to judicial precedents. That may be problematic in countries that are heavily dependent on judicial precedents. But even in these countries, the law has developed over time and judges have been creative to map ways to meet other urgent demands of society. One can still make use of established legal principles and concepts. Our principles are aimed at contributing towards the establishment of precedents on the basis of doctrine and principles; if we were to wait for judicial precedents, we will be too late.

4.2 International law and human rights

The ILA draft points to a well-established principle of customary international environmental law to avoid significant trans-boundary harm.⁴² A report commissioned by the group and written by Ben Farkas, Allana Kembabazi and Stephanie Safdi,⁴³ *Obligations of States and Enterprises to Respond to the Threat of Climate Change*, gives detailed consideration to a series of human rights and other aspects of international law. Below we will quote their major findings;⁴⁴ the updated full report can be downloaded

http://www.law.yale.edu/Climate_and_Human_Rights_Memo.Final.pdf.⁴⁵

⁴¹ See for a similar view IBA report, o.c. p. 5 and 66.

⁴² See in more detail the Commentary to Art. 7 supra 4 and 5, with further references and Mapping report, o.c. A/HRC/25/53 p. 17 ff.

⁴³ Allard K. Lowenstein International Human Rights Clinic (Yale Law School).

⁴⁴ The quotation is based on the version as it stood at the time of drafting.

⁴⁵ This most valuable report has been a rich source of inspiration. The report addresses climate change from a much broader angle than our principles; i.e., it is also about adaptation and damages, issues our group does not tackle, given our emphasis on prevention. Besides, it puts quite some emphasis on the rights of special groups of vulnerable people (women and

The UN Human Rights Council has acknowledged that human rights obligations of States related to trans-boundary environmental harm need to be clarified.⁴⁶ Over the last years, there has been an intensive debate about the relationship between human rights and climate change.⁴⁷ The Independent UN Expert John Knox has convincingly demonstrated that climate change is not only a human rights issue, but that human rights also provide an underpinning for quite a few important legal obligations, be it primarily of a procedural nature.⁴⁸ The same goes for the “no harm rule” of international law.⁴⁹ It is true that these sources do, or at least may, not (yet) point to very *concrete* obligations of the respective States⁵⁰ and, to the extent human rights and international law also have some horizontal effect, enterprises. But they reinforce and support the view that major harm to others (neighbouring countries and their citizens included) must be avoided. Indeed, international law cannot be relevant only to *relatively* unimportant – and at times even trivial – issues. It must play a role in relation to the most serious challenge to humankind in living memory. So, in case of doubt, we believe that it should be interpreted extensively.

4.3 The human rights dimension

children included and, by the same token, the majority of the world’s population). Some members of the group adhere to different views on quite a few issues, in particular in relation to compensation duties and the seemingly advocated additional *reduction* duties in relation to – inter alia – future generations, women, children and indigenous people, discussed by the Lowenstein Clinic, but all of us agree that they did a most impressive job.

⁴⁶ A/HRC/25/L.31 supra 31.

⁴⁷ See, inter alia, Annual report of the UN High Commissioner for Human Rights and reports of the office of the High Commissioner and the Secretary-General, A/HRC/10/6; Human Rights Council, A/HRC/25/L.31; Mapping report of the Independent Expert on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, John H. Knox, A/HRC/25/53; Human Rights Council A/HRC/26/L.33.

⁴⁸ See the Mapping report mentioned in the previous footnote; see also, e.g., Sébastien Jodoin & Katherine Lofts (eds.), *Economic, Social & Cultural Rights and Climate Change*.

⁴⁹ See Malcolm N. Shaw, *International Law* (6th ed.), p. 851 ff.

⁵⁰ See, for a similar view, IBA report, o.c. p. 5.

According to the Lowenstein Clinic, the “Principle of Human Dignity” is vital in the human rights debate.⁵¹ States have a stringent duty to respect, protect, and fulfil human dignity, which requires that they act urgently to mitigate climate change. States must take necessary measures in response to climate change in order to maximally respect, protect, and advance human dignity. They elaborate as follows:⁵²

“The central place of the concept of dignity in the UN Charter and the Universal Declaration of Human Rights has contributed to the establishment of the concept as a core value throughout international and regional human rights law.⁵³ Corresponding with the adoption of the Universal Declaration at the end of WWII, Germany enshrined dignity as the foundational principle of its new constitution,⁵⁴ and many nations have since followed suit. As international and national courts begin to engage with climate change-related issues, they have begun to invoke dignity as a source of governmental constraints and affirmative duties. Dignity is a particularly powerful lens through which to view the human consequences of climate change because it provides a fabric that unifies the full panoply of human rights that climate change will compromise. (..)

The Universal Declaration of Human Rights relies on the concept of dignity as a core human value.⁵⁵ In adopting the Declaration, States began to engage in the project of creating a universal system of agreed-upon human rights. Dignity

⁵¹ In art. 2:202 para 2 PETL, human dignity ranks third, after life and bodily and mental integrity.

⁵² The numbering of the footnotes has changed due to incorporation in our text.

⁵³ *See, e.g.*, Charter of the United Nations, 26 June 1945, 59 Stat 1031, UNTS 993, preamble (determining to “reaffirm faith in fundamental human rights, in the dignity and worth of the human person...”); Universal Declaration of Human Rights, GA Res 217A (III), UN Doc A/810, at preamble (1948) (“[w]hereas recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world ...”); Charter of Fundamental Rights for the European Union, at chp. 1., art. 1 (“Human dignity is inviolable. It must be respected and protected.”); McCrudden at 668, et. seq. (describing the “remarkable degree of convergence on dignity as a central organizing principle” in international and regional human rights texts.).

⁵⁴ Gregory S. Alexander, *The Global Debate over Constitutional Property: Lessons for American Takings Jurisprudence* (2006), at 110 (explaining that “[a]ll [] provisions of the Basic Law, including the property clause, must be interpreted in light of the commitment to human dignity.”).

⁵⁵ Universal Declaration of Human Rights, *supra*, at preamble (asserting that “recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world.”), art. 1 (recognizing that “all human beings are born free and equal in dignity and rights.”); art. 22 (“Everyone is entitled to realization of the economic, social and cultural rights indispensable for his dignity and the free development of his personality.”).

helped to provide a common value that States could embrace and connect to their own legal traditions.⁵⁶ From that point of departure, the concept of dignity has become established as a foundation for the binding human rights obligations embedded in subsequent treaties and domestic constitutional law. The International Covenants on Economic, Social and Cultural Rights and on Civil and Political Rights extended dignity's foundational role, establishing the inherent dignity of the human person as the source from which all other human rights derive.⁵⁷ All major UN conventions have since included the concept of dignity in their preambles or their substantive provisions.⁵⁸ As the international community has developed new human rights instruments in areas such as indigenous and cultural rights, their drafters have connected these rights to the protection and advancement of human dignity.⁵⁹

Regional human rights instruments and many post-WWII constitutions have adopted dignity as their "central organizing principle," giving the concept local meaning and force.⁶⁰ Dignity plays a prominent role, for instance, in the American Declaration on the Rights and Duties of Man, the American Convention on Human Rights, the Revised Arab Charter on Human Rights, the African Charter on Human and Peoples' Rights, and the European Union Charter of Fundamental Rights. Article I of the German Basic Law begins with

⁵⁶ See, Christopher McCrudden, *Human Dignity and the Judicial Interpretation of Human Rights*, 19 Eur. J. Int'l L. 655, 655, 677 (2008) (describing the "pivotal" role that the Declaration played in "popularizing the use of dignity... in human rights discourse" and asserting that its significance at the time of drafting of the UN Charter and Declaration "was that it supplied a theoretical basis for the human rights movement in the absence of any other basis for consensus.").

⁵⁷ See ICESCR, GA Res 2200A (XXI), 21 UN GAOR Supp (No 16), at Preamble, UN Doc A/6316 (1966), 993 UNTS 3 ("recognizing that these rights derive from the inherent dignity of the human person"); ICCPR, GA Res 2200A (XXI), 21 UN GAOR Supp (No. 16), at Preamble, UN Doc A/6316 (1966), 999 UNTS 171 ("recognizing that these rights derive from the inherent dignity of the human person.").

⁵⁸ See, e.g., the U.N. Convention on the Elimination of Racial Discrimination, the Convention on the Elimination of All Forms of Discrimination Against Women, the Convention against Torture, the Convention on Rights of the Child, and Conventions regarding the Rights of Migrant Workers, Protection Against Forced Disappearance, and the Rights of Disabled Persons. See also, the Vienna Declaration and Programme of Action, A/Conf.157/23 (1993) (referring to dignity in its preamble and in relation to several substantive provisions, including those referring to the treatment of indigenous peoples and the eradication of extreme poverty).

⁵⁹ See, UN Declaration on the Rights of Indigenous Peoples (2008), http://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf, at art. 43 ("The rights recognized herein constitute the minimum standards for the survival, dignity and well-being of the indigenous peoples of the world."). See also, UNESCO Universal Declaration on Cultural Diversity, art. 4 (2001) ("The defence of cultural diversity is an ethical imperative, inseparable from respect for human dignity.").

⁶⁰ McCrudden, *supra* note, at 671.

the statement, “Human dignity shall be inviolable. To respect and protect it shall be the duty of all state authority.”⁶¹ Similarly, Chapter 1 of the South African Constitution inscribes “human dignity” as the first value upon which the democratic State is founded. Many constitutions protect dignity as a fundamental right itself. The South African Constitution places the right of “[e]veryone . . . to have their dignity respected and protected” ahead of the right to life.⁶² Regional and domestic courts have given force to these provisions by finding that a wide range of State actions and omissions violate the right to dignity.

Courts have interpreted dignity to require States to refrain from infringing on other fundamental rights, such as liberty and equality, and to take positive steps to fulfil socioeconomic rights. (...)

In a 2005 case, the Federal Court of Nigeria found that protecting the fundamental right to dignity required the State to enjoin gas flaring by the Shell Petroleum Development Company in the Niger Delta. The Court found that the “massive, relentless, and continuous gas flaring” in the production of crude oil and petroleum products “contributes to adverse climate change as it emits carbon dioxide and methane.”⁶³ The “warming of the environment” that results, combined with the direct environmental effects of the localized pollution, impairs the community’s health and jeopardizes their food and water sources.⁶⁴ The Court declared that the Nigerian “constitutional guarantee of right to life and dignity . . . includes the right to a clean, poison-free and pollution-free air and healthy environment conducive for human beings to reside in for our development and full enjoyment of life.”⁶⁵ Finding that these rights “are being wantonly violated,” the Court enjoined all further gas flaring in the area and instructed the government that regulations that allow for such gas flaring are unconstitutional.⁶⁶ The case provides a pathway for other constitutional courts to similarly enforce the right to dignity in order to curtail greenhouse gas emissions.

Regional courts have also invoked the right to dignity to prevent environmental degradation (...). The Inter-American Commission of Human Rights has invoked human dignity in enjoining both Nicaragua and Belize from granting

⁶¹ Grundgesetz, art. 1, para. 1.

⁶² *See*, chp. 2, sec. 10. *See also*, Colombia Constitution tit. I, art. 21, guaranteeing the “right to dignity.”

⁶³ *Gbemre v. Shell Petroleum Development Co. Nigeria Ltd.*, FHC/B/CS/53/05 (Nigeria, 2005), at paras. 3, 7(a).

⁶⁴ *Id.* at para. 7(c).

⁶⁵ *Id.* at para. 14.

⁶⁶ *Idem.*

logging concessions that violated indigenous communities' physical and cultural survival and exacerbated environmental damage to their property.⁶⁷ Although dismissed, the Inuit Petition to the Inter-American Commission on Human Rights articulated climate change as a threat to dignity, particularly through the threats that it poses to indigenous property rights and cultural integrity.⁶⁸ The judicial recognition of the relationship of dignity to environmental protection suggest that dignity may play an important role going forward in shaping the duty of States and non-State actors with regards to climate change mitigation (...).

Though it has not yet been invoked in relation to climate change, the notion of "vida digna" in the jurisprudence of the Inter-American Court of Human Rights could provide teeth to States' climate change-related obligations. The Court has interpreted the "right to life," protected by Article I of the American Declaration on the Rights and Duties of Man, to encompass the right to live a "vida digna," or a dignified life.⁶⁹ The right to a "vida digna," in the Court's conception, "obligates the State to generate living conditions that are at least 'minimum living conditions that are compatible with the dignity of the human person.'"⁷⁰ "Vida digna" imposes both positive and negative obligations on the State. It requires States to "take positive, concrete measures geared toward fulfillment of the right to a decent life (...)."⁷¹ (...)

⁶⁷ See, *Maya Indigenous Communities v. Belize*, Case 12.053, Inter-Am. C.H.R., Report No. 40/04, OEA/Ser.L/V/II.122, doc. 5 rev. 1 ¶ 2 (2004), available at <http://www.cidh.org/annualrep/2004eng/Belize.12053eng.htm>, at para 84 (referring to the Constitution of Belize's recognition that "The People of Belize ... require policies of state... which protect the identity, dignity, and social and cultural values of Belizeans, including Belize's indigenous people."); *The Mayagna (Sumo) Awas Tingni Community v. Nicaragua*, Case No. 79/01 Inter-Am. Ct. H.R. (2001), available at <http://www1.umn.edu/humanrts/iachr/AwasTingnicase.html>, para 116, 140(f), (citing the American Convention's and the Nicaraguan Constitutions' guarantees of the right to dignity).

⁶⁸ *Petition to the Inter American Commission on Human Rights Seeking Relief from Violations Resulting From Warming Caused by Acts and Omissions of the United States* (2005), available at <http://inuitcircumpolar.com/files/uploads/icc-files/FINALPetitionICC.pdf>.

⁶⁹ See, e.g., *Sawhoyamaya Indigenous Community Case (Paraguay)*, Inter-Am. Ct. H.R. (ser. C) No. 146 (March 29, 2006) (finding that Paraguay violated the right to life of members of an indigenous community by delaying determination of title and preventing access to their ancestral lands.).

⁷⁰ Jo M. Pasqualucci, *The Right to a Dignified Life (Vida Digna): The Integration of Economic and Social Rights*, 2, citing *Indigenous Community Yakye Axa Case (Paraguay)*, Inter-Am. Ct. H.R. (ser.C) No. 125, at ¶¶ 162-4 (June 17, 2005).

⁷¹ *Indigenous Community Yakye Axa*, supra.

The Inter-American Court’s jurisprudence on “*vida digna*” suggests that States have obligations to undertake immediate mitigation measures to dampen the severe impacts of climate change on human welfare.⁷² (...)”

They also point to a duty to institute affirmative measures individually and in concert, in order to further the exercise of core human rights by all people within their jurisdictions. States must therefore act expeditiously to mitigate climate change in order to protect the enjoyment of core human rights by all of their members, with particular attention to persons and communities that are most vulnerable to its impacts.⁷³

States have a fundamental duty to respect and fulfil the right to life. Given the imminent threat that climate change poses to human life, States have a duty to immediately curtail activities that contribute to climate change and to take positive measures to protect and promote the right to life.⁷⁴ The argument of the Lowenstein Clinic is along the following lines:

“The right to life is explicitly protected in ICCPR Article 6: “Every human being has the inherent right to life. This right shall be protected by law. No one shall be arbitrarily deprived of his life.”⁷⁵ The subsequent portions of Article 6 deal with the death penalty and genocide, but the Human Rights Committee has interpreted the right broadly in CCPR General Comment 6 to extend as far as creating an obligation to reduce infant mortality and increase life expectancy.⁷⁶ At the same time, the General Comment notes that the right to life, based on its unqualified language and primary position in the ICCPR, is a bedrock human

⁷² The Court has recognized some limitations to States’ requirements to fulfill the conditions for a dignified life. *See e.g.*, *Sawhoyamaxa*, supra note 9, at ¶ 155 (citing the Pueblo Bello Massacre Case (Colombia), Inter-Am. Ct. H.R. (ser.C) No. 140, at ¶ 124 (January 31, 2006) (“[A] State cannot be responsible for all situations in which the right to life is at risk. Taking into account the difficulties involved in the planning and adoption of public policies and the operative choices that have to be made in view of the priorities and the resources available, the positive obligations of the State must be interpreted so that an impossible or disproportionate burden is not imposed upon the authorities.”). The Maastricht Guidelines on Violations of Economic, Social, and Cultural Rights interpret ICESCR as imposing a much broader requirement that “minimum core obligations apply irrespective of the availability of resources of the country concerned or any other factors and difficulties.” Maastricht Guidelines, at 18 U.N. Doc. E/C.12/2000/13 (2000).

⁷³ Principle 33.

⁷⁴ Supra 2 sub i).

⁷⁵ ICCPR art. 6(1).

⁷⁶ CCPR General Comment 6 para. 5 (1982).

right from which no derogation is permitted.⁷⁷ General Comment 6 may well go too far; the language of the ICCPR itself does not make it clear that suffering an avoidable early natural death amounts to being “arbitrarily deprived of life.” Article 6 also explicitly contemplates and permits the death penalty, indicating that the word “arbitrarily” restricts the application of the right to situations in which no valid reason is offered for an individual’s death.

Climate change will threaten lives. Because climate change is anthropogenic, this threat to life is more clearly related to the core of Article 6 than, for example, deaths from preventable illness, which are not always as obviously caused by human activity. In human rights terms, a death is more unacceptably “arbitrary” when it is foreseeably caused by human activity. When human activities foreseeably threaten lives, engaging in these activities amounts to a potential violation of the right to life.⁷⁸ ICCPR Article 2(1) provides that the State has a positive obligation to ensure that such violations do not take place.⁷⁹ The European Court of Human Rights has provided a similar interpretation of the parallel text of article 2 of the European Convention on Human Rights. States have an obligation “to take appropriate steps to safeguard the lives of those within their jurisdiction.” This duty applies “in the context of any activity, whether public or not, in which the right to life may be at stake.”⁸⁰ The key factor seems to be foreseeability of risk; the obligation applies even when there is a foreseeable risk in a situation that is not caused by human activity.⁸¹ The Inter-American Court of Human Rights has enforced perhaps the most sweeping interpretation of the “right to life,” by interpreting it to require States to fulfil the conditions for their people to live a life with dignity.⁸² As climate-change threats to human life, particularly for vulnerable communities, become increasingly imminent and apparent, courts may become receptive to using “right to life” provisions to require mitigation measures.”

⁷⁷ *Id.* para. 1.

⁷⁸ See, e.g., *Roger Judge v. Canada*, Communication No. 829/1998, U.N. Doc. CCPR/C/78/D/829/1998, at para. 10.6 (2003) (holding that deporting an individual to a country where he might be executed is a sufficient causal link for a violation of ICCPR art. 6).

⁷⁹ ICCPR art. 2(1) (“respect and ensure”).

⁸⁰ *Oneyrildiz v. Turkey*, [2004] ECHR 657, para. 71-72 (holding that Turkish authorities had an obligation to anticipate and respond to the risk of a methane explosion from a rubbish dump).

⁸¹ *Budayeva and Others v Russia* [2008] ECHR 15339/02, para. 133, (finding obligation to mitigate harm when imminence of a natural disaster is “clearly identifiable”).

⁸² See *Sawhoyamaxa Indigenous Community Case (Paraguay)*, Inter-Am. Ct. H.R. (ser. C) No. 146 (March 29, 2006) (finding that Paraguay violated the right to life of members of an indigenous community by delaying determination of title and preventing access to their ancestral lands.) See also discussion on “*vida digna*,” (...).

The Lowenstein Clinic subsequently turns to the right to property, in particular the extent to which it meets the essential needs of “dignified human living.” The latter is under stress due to climate change. In turn, countries have to mitigate climate change:

“The right to property is not explicitly protected by the ICCPR or ICESCR, but it is protected by inter-American, African, and European rights treaties⁸³ as well as many national jurisdictions. The right to property is not absolute; the ability of states and their courts to balance the right to property against other values is essential for making it possible to regulate pollution.⁸⁴ (...)”

At the same time, the protections for property within human rights instruments also suggest that states have an obligation to ensure that private property is protected, particularly so as to prevent harms to other essential rights. For instance, the American Declaration on the Rights and Duties of Man ensures the right to private property to the extent that “it meets the essential needs of decent living and helps to maintain the dignity of the individual and of the home.”⁸⁵ States may thus have an obligation, grounded in human rights, to regulate emitters in order to protect private property from environmental harm and thereby ensure that essential needs are met and core human rights protected.”⁸⁶

Climate change will also jeopardise the right to health. The duty of States to respect, protect, and fulfil the right to health extends to securing a healthy environment and preventing environmental degradation. States have a consequential obligation to prevent degradation of the earth’s atmosphere, thereby curtailing the severe threats to human health that global temperature increases, extreme weather events, and sea level rise will pose:

“The right to health has been relied upon as a source of the right to a clean and healthy environment. In turn, a healthy environment is deemed a *sine qua non* for the right to health to be meaningful. International law reflects this strong interface between health and the environment. (...) In Article 12, the Covenant

⁸³ African Charter on Human and Peoples’ Rights art. 14 (1982); Protocol to the Convention for the Protection of Rights and Freedoms art. 1 (1952); American Convention on Human Rights art. 21 (1969).

⁸⁴ See, e.g., *Fredin v Sweden*, [1991] ECHR 2, para. 51.

⁸⁵ American Declaration on the Rights and Duties of Man, art. 23.

⁸⁶ Öneriyildiz, para. 145-146 (holding that the State has a duty to take measure to protect a squatter’s possessory interests in a self-built home). Dinah Shelton had some doubts about this firm statement. There is a danger that those who have to contribute to the cost of climate change may rely on this right, in an attempt to protect their property in the short-term. It is, however, hoped that decision-makers will take cognisance of the longer-term consequences of climate change on property.

expressly calls on State parties to take steps to improve all aspects of environmental [hygiene] (...) and to enable the prevention, treatment and control of epidemic, endemic, occupational, and other diseases.⁸⁷ The Committee on Economic, Social and Cultural Rights has defined the right to health expansively, as “an inclusive right extending not only to timely and appropriate health care but also to the underlying determinants of health, such as access to safe and potable water and adequate sanitation, an adequate supply of safe food, nutrition and housing,[and] healthy occupational and environmental conditions.”⁸⁸ (...)

The Inter-American Commission expanded on the link between the environment and health in its 1997 “Report on the Situation of Human Rights in Ecuador.” In the Report, the Commission identified human rights violations, particularly violations of the right to life and health, resulting from contamination caused by oil exploration in the Oriente region. The contamination threatened the food and water supply and increased morbidity in the surrounding populations.⁸⁹ The Commission determined that “[c]onditions of severe environmental pollution, which may cause serious physical illness, impairment and suffering on the part of the local populace, are inconsistent with the right to be respected as a human being.”⁹⁰ Emphasizing the interrelatedness of health and the environment, it stated that “[t]he realization of the right to life, and to physical security and integrity is necessarily related to and in some ways dependent upon one’s physical environment. Accordingly, where

⁸⁷ The General Comment 14 recognizes that the “improvement of all aspects of environmental and industrial hygiene” (art. 12.2 (b)) comprises, “*inter alia*, preventive measures in respect of occupational accidents and diseases; the requirement to ensure an adequate supply of safe and potable water and basic sanitation; the prevention and reduction of the population’s exposure to harmful substances such as radiation and harmful chemicals or other detrimental environmental conditions that directly or indirectly impact upon human health.” See General Comment 14, *The Right to the Highest Attainable Standard of Health*, UN Doc. E/C.12/2000/4, 11 August 2000, para. 15. It is available on:

[www.unhcr.ch/tbs/doc.nsf/\(Symbol\)40d009901358b0e2c1256915005090be?Opendocument](http://www.unhcr.ch/tbs/doc.nsf/(Symbol)40d009901358b0e2c1256915005090be?Opendocument).

⁸⁸ General Comment 14.

⁸⁹ Many people suffered skin diseases, rashes, chronic infections, and gastrointestinal problems. In addition, they claimed that pollution of local waters contaminated fish, drove away wildlife, and affected their food supplies. See Dinah Shelton, *Human Rights And The Environment: What Specific Environmental Rights Have Been Recognized?* 35 DENV. J. INT’L L. & POL’Y 129,146 (2006-2007).

⁹⁰ Inter-Am.C.H.R. *Report on the Situation of Human Rights in Ecuador*, OEA/Ser.L/V/II.96, doc. 10 rev. 1 (1997) Chapter VIII [hereinafter *Report on Ecuador*], accessed at <http://www.cidh.org/countryrep/ecuador-eng/chaper8.htm#THE%20HUMAN%20RIGHTS%20SITUATION%20OF%20THE%20IN%20HABITANTS%20OF%20THE%20INTERIOR%20OF%20ECUADOR%20AFFECTED%20BY%20DEVELOPMENT%20ACTIVITIES>.

environmental contamination and degradation pose a persistent threat to human life and health, the foregoing rights are implicated.”⁹¹ The Commission pointed out that “states parties may therefore be required to take positive measures to safeguard the fundamental and non-derogable rights to life and physical integrity, particularly to prevent the risk of severe environmental pollution that could threaten human life and health (...).”⁹² The Commission called on the government to implement legislation to strengthen protection against pollution, (...)

The Commission’s insistence on positive measures to protect health from future contamination can be used as a powerful tool in environmental protection. It calls on States to both formulate and enforce laws to prevent environmental degradation and its consequent impacts on human health (...). In the context of climate change, the requirement to take positive measures extends to those that prevent degradation of the earth’s atmosphere, thereby curtailing the severe threats to human health that global temperature increases, extreme weather events, and sea level rise will pose. (...)”

In relation to the duty to adopt appropriate economic, environmental, and social policies to ensure access to adequate and nutritious food and prevent hunger, States must take effective measures to mitigate climate change:

“The right to food is enshrined in international instruments, including the Universal Declaration of Human Rights and the International Covenant on Economic, Social and Cultural Rights. It is also recognized in subject-specific human rights treaties, such as the Convention on the Rights of the Child,⁹³ the Convention on the Elimination of All Forms of Discrimination against Women,⁹⁴ and the Convention on the Rights of Persons with Disabilities.⁹⁵ The right to food is also recognized by many national constitutions⁹⁶ and regional human rights instruments, including the Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights (known as the Protocol of San Salvador), the African Charter on the Rights and Welfare of the Child, and the Protocol to the African Charter on Human and Peoples’ Rights on the Rights of Women in Africa.

⁹¹ *Id.* at chapter VIII.

⁹² *Id.*

⁹³ Convention on the rights of the child, arts. 24(2)(c), 27(3).

⁹⁴ Convention on the elimination of all forms of discrimination against women, art. 12(2).

⁹⁵ Convention on the rights of persons with disabilities, arts. 24(f), 28(1).

⁹⁶ *See e.g.*, Brazil, South Africa.

The Committee on Economic, Social and Cultural Rights has clarified that the right to adequate food requires the adoption of “appropriate economic, environmental and social policies.”⁹⁷ In General Comment No. 12, the Committee stated that “[t]he right to adequate food is realized when every man, woman and child, alone or in community with others, has physical and economic access at all times to adequate food or means for its procurement.”⁹⁸ The Covenant on Economic, Social and Cultural Rights also enshrines “the fundamental right of everyone to be free from hunger.”⁹⁹ The UN Special Rapporteur on the Right to Food has declared that the right encompasses “[t]he right to have regular, permanent and unrestricted access, either directly or by means of financial purchases, to quantitatively and qualitatively adequate and sufficient food corresponding to the cultural traditions of the people to which the consumer belongs, and which ensure a physical and mental, individual and collective, fulfilling and dignified life free of fear.”

Climate change will adversely affect States’ ability to realize the right to food. Fulfilment of the right to food requires access to appropriate natural resources and healthy ecosystems, particularly for those populations that depend on a subsistence economy. It also requires production and distribution of sufficiently nutritious foodstuffs to satisfy the basic needs of all individuals. Climate change is expected to disrupt ecosystems and growing cycles, causing food production to decrease and thereby increasing the risk of hunger and food insecurity in the poorer regions of the world.¹⁰⁰ In response to these threats, the (former) UN Special Rapporteur on the Right to Food, Olivier De Schutter, has stated that the right to food includes “the right to be protected from policies that undermine access to it.” States’ obligation to ensure realization of the right to food is a central component of their duty to take (...) mitigation (...) measures.”

Climate change also impairs access to Safe Drinking Water and Sanitation. That also requires positive action geared at mitigation:

⁹⁷ Committee on Economic, Social and Cultural Rights (CESCR), General Comment No. 12 (1999) on the right to adequate food (art.11), para. 4.

⁹⁸ Committee on Economic, Social and Cultural Rights (CESCR), General Comment No. 12 (1999) on the right to adequate food (art.11),

⁹⁹ ICESCR, article 11, para.2.

¹⁰⁰ UN Human Rights Council, *Report of the Office of the United Nations High Commissioner for Human Rights on the relationship between climate change and human rights*, 15 January 2009, A/HRC/10/61, available at: <http://www.unhcr.org/refworld/docid/498811532.html> [accessed 13 April 2013], para 9

“The right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses.¹⁰¹ States must ensure there is adequate access to water to secure the health, dignity and livelihoods of all people.¹⁰² Water is essential to fulfilling many of the social, economic, and cultural rights protected under the ICESCR. As climate change puts additional stress on water resources, thereby reducing access to safe drinking water, water for crop production and sanitation resources, it will also endanger other rights, such as the rights to life, health and food.¹⁰³ The ESCR Committee has underscored that water and water facilities and services must be accessible to all, including the most vulnerable and marginalized sections of the population. The manner in which States realize the right to water must be sustainable, ensuring that present and future generations can depend on safe and reliable water resources.¹⁰⁴ The Committee has also stated, “Steps should be taken by States parties to prevent their own citizens and companies from violating the right to water of individuals and communities in other countries.”¹⁰⁵ (...)

The ESCR Committee has identified several ways in which States violate the right to water, including:

- a) State parties’ interference with the right to water. This includes, inter alia:
 - (i) arbitrary or unjustified disconnection or exclusion from water services or facilities; (...)
- b) Violations of the obligation to protect follow from the failure of a State to take all necessary measures to safeguard persons within their jurisdiction from infringements of the right to water by third parties. (...)

Last but not least, the duty to provide for a clean and healthy environment conducive to human well-being is equally at risk in relation to climate change:

“Every citizen has the right to a clean and healthy environment, one that permits the realization of a life of dignity and well-being. States have an

¹⁰¹ CESCR general comment No. 15 (2002) on the right to water (arts. 11 and 12), para. 2

¹⁰² UN Human Rights Council, para.7.

¹⁰³ Annual Report Of The United Nations High Commissioner For Human Rights And Reports Of The Office Of The High Commissioner And The Secretary General, on the relationship between climate change and human rights. Human Rights Council, Tenth session Item 2 of the provisional agenda. A/HRC/10/61. para. 29

¹⁰⁴ Substantive Issues Arising In The Implementation Of The International Covenant On Economic, Social And Cultural Rights, General Comment No. 15 (2002) The right to water (arts. 11 and 12 of the International Covenant on Economic, Social and Cultural Rights) [hereinafter CESCR general comment No. 15 (2002)]

¹⁰⁵ CESCR general comment No. 15 (2002) on the right to water (arts. 11 and 12), para. 33

obligation to take positive measures to safeguard and advance this right. In particular, States have a duty to prevent severe environmental pollution that could threaten human life and health (...)

Although U.N. human rights treaties do not refer to the right to a clean and healthy environment, regional human rights conventions for Africa and the Americas and almost 60 national constitutions¹⁰⁶ recognize it.¹⁰⁷ The Protocol of San Salvador, the additional protocol to the American Convention on Human Rights in the area of Economic, Social and Cultural Rights, explicitly recognizes the right to a healthy environment. Article 11 states: “Everyone shall have the right to live in a healthy environment and to have access to basic public services. The States Parties shall promote the protection, preservation, and improvement of the environment.”¹⁰⁸ Article 24 of the African Charter on Human and Peoples’ Rights states that “all peoples shall have the right to a general satisfactory environment favorable to their development.” The African Charter expresses the right as one that belongs to peoples as a collective, rather than one that adheres to individuals.

The African Commission on Human and Peoples’ Rights specifically adjudicated the right to a satisfactory environment in the case *SERAC v. Nigeria*. Two non-governmental organizations filed a petition on behalf of the people of Ogoniland, Nigeria, alleging that Nigeria had breached its obligations to respect, protect, promote and fulfil the right to a healthy environment guaranteed by the Charter. The Commission articulated the substantive aspects of Article 24:

The right to a general satisfactory environment, as guaranteed under Article 24 of the African Charter or the right to a healthy environment, as it is widely known, therefore imposes clear obligations upon a government. It requires the state to take reasonable and other measures to prevent pollution and ecological

¹⁰⁶ Fifty countries have explicitly recognized the right to a healthy environment in their constitutions, and a further 30 constitutions recognized a duty to defend or protect the environment, <http://www.nepalnews.com/home/index.php/guest-column/19926-the-right-to-healthy-environment-.html>. See, e.g., references to the right to a healthy environment in the following constitutions: Argentina, art 41; Belgium, art 23; Ecuador, art 89; Georgia, art 35; Norway, art 110(b); Paraguay, art 7(1); Portugal, art 66; and South Africa, art 24.

¹⁰⁷ David Boyd, *The Environmental Rights Revolution: A Global Study of Constitutions, Human Rights, and the Environment* (UBC Press 2011).

¹⁰⁸ Additional protocol to the American Convention on Human Rights in the area of Economic, Social and Cultural rights: “PROTOCOL OF SAN SALVADOR”

degradation, to promote conservation, and to secure an ecologically sustainable development and use of natural resources.”¹⁰⁹

So far, we have presented a few core findings of the report by Yale’s Lowenstein Clinic. A very recent judgement of the ECHR¹¹⁰ seems to support our case. The Court reiterates that art. 2 (the right to life)

“lays down a positive obligation on States to take appropriate steps to safeguard the life of those within their jurisdiction (....)

80. This obligation is construed as applying in the context of any activity, whether public or not, in which the right to life may be at stake, and *a fortiori* in the case of industrial activities which by their very nature are dangerous (...).”

The Court recalls that “a serious risk of an ensuing death” suffices.¹¹¹ It observes that

“in the context of dangerous activities, the scope of the positive obligations under Article 2 of the Convention largely overlaps with that of those under Article 8”¹¹² (private life).

Further down, the ECHR held:

“101. The Court makes reference to its general principles as stated in *Öneryıldız* and further elaborated on in *Budayeva and Others* (both cited above), as summarised in *Kolyadenko and Others v. Russia*, nos. 17423/05, 20534/05, 20678/05, 23263/05, 24283/05 and 35673/05, §§ 157-161, 28 February 2012, and as reiterated in *Vilnes and Others v. Norway*, nos. 52806/09 and 22703/10, § 220, 5 December 2013:

“The Court reiterates that the positive obligation to take all appropriate steps to safeguard life for the purposes of Article 2 (see paragraph 151 above) entails above all a primary duty on the State to put in place a legislative and administrative framework designed to provide effective deterrence against threats to the right to life (see *Öneryıldız*, cited above, § 89, and *Budayeva and Others*, cited above, § 129).

The Court considers that this obligation must be construed as applying in the context of any activity, whether public or not, in which the right to life may be at stake, and *a fortiori* in the case of industrial activities, which by their very nature

¹⁰⁹ The Social and Economic Rights Action Center and the Center for Economic and Social Rights v. Nigeria, African Commission on Human and Peoples' Rights, Comm. No. 155/96 (2001), para 52.

¹¹⁰ *Brincat and others v. Malta*, 24 July 2014. The case is about victims employed by a state-owned enterprise exposed to asbestos in the course of their employment.

¹¹¹ Para 82 with reference to other cases.

¹¹² Para 85.

are dangerous. In the particular context of dangerous activities special emphasis must be placed on regulations geared to the special features of the activity in question, particularly with regard to the level of the potential risk to human lives. They must govern the licensing, setting up, operation, security and supervision of the activity and must make it compulsory for all those concerned to take practical measures to ensure the effective protection of citizens whose lives might be endangered by the inherent risks (see Öneriyıldız, cited above, §§ 71 and 90).

Among these preventive measures particular emphasis should be placed on the public's right to information, as established in the case-law of the Convention institutions. The relevant regulations must also provide for appropriate procedures, taking into account the technical aspects of the activity in question, for identifying shortcomings in the processes concerned and any errors committed by those responsible at different levels (see Öneriyıldız, cited above, §§ 89-90, and Budayeva and Others, cited above, § 132).

As to the choice of particular practical measures, the Court has consistently held that where the State is required to take positive measures, the choice of means is in principle a matter that falls within the Contracting State's margin of appreciation. There are different avenues to ensure Convention rights, and even if the State has failed to apply one particular measure provided by domestic law, it may still fulfil its positive duty by other means. In this respect an impossible or disproportionate burden must not be imposed on the authorities without consideration being given, in particular, to the operational choices which they must make in terms of priorities and resources; this results from the wide margin of appreciation States enjoy, as the Court has previously held, in difficult social and technical spheres (see Budayeva and Others, cited above, §§ 134-35).

In assessing whether the respondent State complied with its positive obligation, the Court must consider the particular circumstances of the case, regard being had, among other elements, to the domestic legality of the authorities' acts or omissions,¹¹³ the domestic decision-making process, including the appropriate investigations and studies, and the complexity of the issue, especially where conflicting Convention interests are involved. The scope of the positive obligations imputable to the State in the particular circumstances would depend on the origin of the threat and the extent to which one or the other risk is susceptible to mitigation (see Budayeva and Others, cited above, §§ 136-37).

101. The Court has also held on many occasions that the State has a positive duty¹¹⁴ to take reasonable and appropriate measures to secure an applicant's rights under Article 8 of the Convention (see, among many other authorities, *López Ostra*, cited above, § 51, Series A no. 303-C; *Powell and Rayner v. the United Kingdom*, 21

¹¹³ If we understand correctly, the Court means that violation of domestic rules, stricter than the European Convention, may amount to a violation of the latter. Otherwise, its reasoning would be strange: domestic law could undercut fundamental provisions of the European Convention.

¹¹⁴ I.e., to take concrete steps.

February 1990, § 41, Series A no. 172; and, more recently, *Di Sarno and Others v. Italy*, no. 30765/08, § 96, 10 January 2012). In particular, the Court has affirmed a positive obligation of States, in relation to Article 8, to provide access to essential information enabling individuals to assess risks to their health and lives (see, by implication, *Guerra and Others*, cited above, §§ 57-60; *López Ostra*, cited above, § 55; *McGinley and Egan*, cited above, §§ 98-104; and *Roche*, cited above, §§ 157-69). In the Court's view, this obligation may in certain circumstances also encompass a duty to provide such information (see, by implication, *Guerra and Others*, cited above, §§ 57-60; and *Vilnes and Others*, cited above § 235). It has also recognised that in the context of dangerous activities, the scopes of the positive obligations under Articles 2 and 8 of the Convention largely overlap (see *Budayeva and Others*, cited above, § 133). Indeed, the positive obligation under Article 8 requires the national authorities to take the same practical measures as those expected of them in the context of their positive obligation under Article 2 of the Convention (see *Kolyadenko and Others*, cited above, § 216). NB: de opmaak is hier versprongen, maar dat is een fout van de computer; neger dat svp

One cannot take it for granted that the Court would apply the same reasoning in relation to climate change. It may be difficult to persuade the Court that all industrial activities which produce GHGs should be labelled as “dangerous” in the sense quoted above, in light of the marginal contribution of every individual emitter to the ensuing damage.¹¹⁵ The final part of the *Brincat* judgment may influence the Court to take a more cautious stance.¹¹⁶ However, it would be unsatisfactory if art. 2 and 8 of the European Convention on Human Rights could be invoked in *relatively* unimportant cases, but not in case of grievous injustice to a great many people around the globe.

The repeated pledges by world leaders, in and outside the COP framework, and the urgent need to come to grips with the looming threats advocated by these leaders may in themselves not amount to legal obligations, but they are not meaningless either. *Taken together with other legal bases*, they help to crystallise enforceable obligations on countries. Most importantly, it means that above permissible quantum countries should not only reduce GHG emissions, but should also provide financial and technical means to the most vulnerable countries to curb their GHG emissions.

¹¹⁵ It follows from principle 3.8 that we would ignore such a “defence”, but the ECHR may take a different view.

¹¹⁶ Para 121-127; a not overly convincing line of thought.

4.4 Tort law

The strongest legal basis for our principles can probably be gleaned from what arguably is a common core of tort law referred to in the U.S. as the Learned Hand formula.¹¹⁷ It is a fundamental and widely accepted rule of thumb that an act or omission will be unlawful if it subjects the life, well-being or property of others to a risk of damage, if the risk is considerable, if the potential damage is colossal, and if the risk can be avoided without undue detriment to the party/parties causing that risk.¹¹⁸ Obligations to mitigate climate change meet all these requirements. Climate change poses a significant risk to billions of people – present and future – which can still be avoided by reducing GHG emissions to a significant extent. Technology has progressed to such an extent that the measures can be taken. Though the costs of making the necessary transition away from fossil fuels may be very large in the short and medium terms, many of them will eventually pay for themselves through energy savings. Overall the net economic effects of this transition would be positive to the extent that it prevents the far greater economic costs of catastrophic climate change. Moreover, many jobs and much economic activity would be created by building the new clean energy facilities, and many negative environmental impacts not related to climate change, such as conventional air pollution, would be reduced.¹¹⁹

In tort law, the yardstick for the assessment whether or not a specific act or omission is (un)lawful is whether the act meets the standard of what a ‘reasonable person’ (*bonus pater familias*) would/should have done in similar circumstances.¹²⁰ What can

¹¹⁷ See below.

¹¹⁸ See, in more detail, Shaping the law for global crises, o.c. p. 86ff and Climate change remedies o.c. p. 53ff.

¹¹⁹ See Kinniburgh’s report for a series of measures that could be taken.

¹²⁰ See, e.g., par. 291 - 293 Restatement Second on Torts and art. 3:102 PEL Liab. Dam; George C. Christie, Joseph Sanders and W. Jonathan Cardi, The Law of Torts (5th ed., 2012) p. 121 ff; Prosser, Wade and Schwartz’s Tort (12 ed. 2010) p. 150 ff.

reasonably be required from such a person?¹²¹ The Principles of European Tort Law (PETL) determine that it depends:

“in particular, on the nature and the value of the protected interest involved, the dangerousness of the activity, the expertise to be expected of a person carrying it on, the foreseeability of the damage, the relationship between those involved, as well as the costs of precautionary or alternative methods”.¹²²

§ 291 Restatement of Torts (1965)¹²³ puts it as follows:

“Where an act is one which a reasonable person would recognize as involving a risk of harm to another, the risk is unreasonable and the act is negligent if the risk is of such magnitude as to outweigh what the law regards as the utility of the act or of the particular manner in which it is done.”

while according to § 3 Restatement (Third) of Tort Liability for Physical and Emotional Harm (2010):

“A person acts negligently if the person does not exercise reasonable care under the circumstances. Primary factors to consider in ascertaining whether the person’s conduct lacks reasonable care are the foreseeable likelihood that the person’s conduct will result in harm, the foreseeable severity of any harm that

¹²¹ See, in more detail, C. van Dam, *European Tort Law* (2006) pp. 189 *et seq.* Part of the text is borrowed from *Shaping the law for global crises*, o.c. p. 88ff.; see also *Climate change remedies* par. 1.4.

¹²² Art. 4:102 para. 1. Just-mentioned art. 3:102 PEL Liab. Dam. is less explicit. According to the Commentary, “several factors beyond conclusive enumeration” play a role. Courts have to assess what constitutes careful conduct in a given set of factors that may change over time; see Christian von Bar, *Principles of European Tort Law, Non-Contractual Liability Arising out of Damage to Another* p. 585 and 586. It seems open to debate whether judges necessarily always assess what *proper* conduct would have been. Instead, we are inclined to believe, they may stick to labeling a specific act or omission as wrongful. Put differently, they may intuitively jump to conclusions. That is by no means a veiled criticism. Quite often, the arguments pro and contra plaintiff or defendant are more or less in balance; in such scenarios, it is difficult to explain at length why one of them acted wrongfully. That is much easier in relation to climate change, as will be demonstrated below. See, for a wealth of information about a series of countries, Richard Lord, Silke Goldberg, Lavanya Rajamani and Jutta Brunnée (eds.), *Climate change liability*.

¹²³ I.e., the US Restatement, drafted by the ALI.

may ensue, and the burden of precautions to eliminate or reduce the risk of harm.”

In California, the policy of preventing future harm also carries weight.¹²⁴ The same probably goes for many other jurisdictions.

A similar approach as advocated by PETL is adopted in, for instance, the U.S. (the so-called Learned Hand formula),¹²⁵ England and Wales,¹²⁶ New Zealand,¹²⁷ Australia¹²⁸ and South Africa.¹²⁹ The new Chinese law is largely similar.¹³⁰ The International Commission of Jurists seems to take a similar position.¹³¹ Canadian Tort Law very much depends on foreseeability.¹³² It “seeks to impose a result that is fair to both the plaintiffs and the defendants and that is socially useful”,¹³³ thus leaving considerable leeway for courts.¹³⁴

¹²⁴ Rowland v Christian, mentioned by Prosser, Wade and Schwartz’ Torts p. 147.

¹²⁵ US v. Carroll Towing, (1947) 159 F(2d) 169, 173; see, in more detail, D.B. Dobbs, The Law of Torts (2000) §145. See also, about the draft Restatement Third, Kenneth W. Simons, The Hand Formula in the Draft (Third) of Torts: Encompassing Fairness as Well as Efficiency Values, Vanderbilt Law Review [Vol. 54:3:901]. See, for a further elaboration, also Prosser, Wade and Schwartz’ Torts p. 147 ff.

¹²⁶ Morris v. West Hartlepool Co. Ltd., (1956) AC 552, 574 per Lord Reid; the judgment adds: the use to society.

¹²⁷ Bill Atkin and Geoff McLay, Torts in New Zealand, Cases and Materials (5th ed.).

¹²⁸ Kit Barker, Peter Cane, Mark Lunney and Francis Trindade, , The Law of Torts in Australia (5th ed.), pp. 417 *et seq*; see, in particular, p. 421ff.

¹²⁹ Neethling, Potgieter, Visser, Deliktereg (6th ed.) pp. 36 *et seq*.

¹³⁰ See H. Koziol and Yan Zhu, JETL 3/2010 p. 340.

¹³¹ Corporate Complicity & Legal Accounting, Volume 3 Civil Remedies p. 19.

¹³² Supreme Court of Canada, Mustapha v. Callagan of Canada, 2008 SCC 27 per the Chief Justice *supra* 4. See, in more detail, Lewis N. Klar, Tort Law (5th ed. 2012) p. 355ff. and Ernest Weinrib, Tort Law, Cases and Materials, (3rd ed. 2005) p. 71ff.

¹³³ Mustapha v. Callagan, *supra* 16.

¹³⁴ According to Cornelia Stephanie Wölk, Das Deliktsrecht Ruslands 2003 p. 154ff., causing damage to others is generally considered as unlawful. The Learned Hand formula has not been applied, so far, in Singapore: “Singapore courts have instead utilised the factors in a holistic manner via a balancing exercise, as it were, in order to determine the standard of care. (...) it should be highlighted that there are other factors such as industrial practices and the social benefits and utility of the activity that might be involved in determining the standard of care”, Chan Kok Yew Gary, The law of torts in Singapore 2011 p. 186ff.; quotation at p. 187.

This approach approximates the view of the International Commission of Jurists. The ICJ persuasively submits the view that in considering what a prudent company would have foreseen, the court will look at “objective evidence as to what kind of information was available to the company about the risk (...) from its own employees and consultants, the media and civil society.” An important reason for this formulation is that “a reasonable person in the company’s shoes would have undertaken an inquiry as to the potential risks involved.”¹³⁵

The application of the PETL and similar formulations in *specific* cases is not necessarily easy. After all, not all the criteria just mentioned point in the same direction. Ultimately, application to a specific case almost unavoidably may call for “value judgments.”¹³⁶ The U.S. judge Learned Hand rightly observed that “a solution always involves some preference, or a choice between incommensurables”.¹³⁷ Put differently: the formula provides some maneuvering room for lawyers and particularly for judges. One cannot escape the impression that courts occasionally pay lip service to this or similar formulations, but that they are in fact working towards an equitable outcome. Simons puts it very eloquently:

“In the end, a determination that an actor is negligent reflects a value judgment at two levels. It expresses the judgment that the actor should have done something different in light of the foreseeable risks of his conduct. It also presupposes value judgments about the relevant advantages and disadvantages of taking such a precaution. The task of conscientiously identifying and clarifying the appropriate value judgments is not easy, but it is unavoidable if negligence is to remain a justifiable ground of tort liability.”¹³⁸

Lord Hoffmann has expressed a similar view:

¹³⁵ Corporate Complicity & Legal Accountability, Volume 3 Civil Remedies pp. 17 and 18.

¹³⁶ See also K.W. Simons, The Hand Formula in the Draft Restatement (Third) of Torts: Encompassing Fairness as Well as Efficiency Values, 54(3) Vanderbilt Law Review, 2001, p. 916 with a very interesting discussion on the subsequent pages, seen from the angle of various theories (standards).

¹³⁷ In *Conway v. O’Brien*, quoted by Prosser, Wade and Schwartz’ Torts, o.c. p. 147.

¹³⁸ O.c. at 935.

“(…) But the balance between risk on the one hand and individual autonomy on the other is not a matter of expert opinion. It is a judgment which the courts must make and which in England reflects the individualist values of the common law.”¹³⁹

Turning to the respective criteria: none of them are completely unambiguous, as the following examples may show. It is open to debate whether there is a sufficient relationship (proximity)¹⁴⁰ between, say, a German enterprise and the people living in Bangladesh. If not, the same *may* even go for the relationship between, say, a German living in the very southern part of Germany and a German enterprise based in the northern part of the country. Nevertheless, we do not think that this would serve as a serious obstacle. Even if the relationship requirement is interpreted narrowly, it remains just one of the relevant factors. Besides, there are many people in the close vicinity whose interests will be jeopardised by the consequences of GHG emissions.¹⁴¹

With the exception of the costs of precautionary measures – to be dealt with below – the other signposts (the *protected* interests, the dangerousness of the activity and the foreseeability of the damage) point to the need to take swift action. Little justification is needed to show that a protected interest is affected if nothing is done to reduce GHG emissions. The predominant view among climate change scientists is that catastrophe will set in if we stick to business as usual or if we confine ourselves to minor reductions of GHG emissions. Massive and still largely avoidable human and economic suffering would occur, while the ability of the environment to sustain life would be greatly impaired. These interests are obviously protected by law (national and international).

¹³⁹ In *Tomlinson v. Congleton BC*, [2003] UKHL 47.

¹⁴⁰ In the sense of art. 4:102 para 1 PETL, mentioned above. We realise, of course, that climate change results from the cumulative effect of global emissions, i.e., a series of emissions worldwide. But this leaves untouched that defendants could try to harp on lack of proximity.

¹⁴¹ See, for the minimal contribution-issue, Principle 11.

The foreseeability of the damage is so much beyond disagreement that it does not need any elaboration either. In line with the precautionary principle (Principle 1), the mere fact that the predominant view is challenged by sceptics does not carry weight in this respect. The same holds true for the uncertainty about the magnitude of the harm that will be caused by climate change. Even if we would depart from the most optimistic scenarios – which would be in blatant conflict with the precautionary principle – we must reckon with devastation. In the latter context, one should bear in mind the increasingly severe natural events (droughts, excessive rainfall, hurricanes) even at the stage where we are still some distance away from exceeding the maximum tolerable increase of 2 degrees C. It goes without saying that things will get worse.¹⁴²

The dangerousness of the activity is a slightly more delicate issue. If we perceive GHG emissions from a *global angle*, they are obviously dangerous. Nevertheless, it is arguable that the emissions brought about by each *single actor* (the majority of States) are not dangerous *in this legal sense*. Realistically, the harmful consequences of climate change would ensue despite reductions (even to zero) by a single State (with the exception of, say, the top ten emitters).¹⁴³ Yet, if most of these actors (or only a small proportion) do not collectively reduce their GHG emissions, global devastation cannot be avoided. Moreover, in light of the global devastation that will materialise if we stick to business as usual, even a very small contribution may be said to bring about a far from negligible loss. Even a small contribution to a very harmful outcome should, in any event, suffice for legal purposes. If, e.g., one billion people will be seriously impaired in one way or another (some will lose their life; others will no longer have access to water or will fall ill, whereas again others will “only” face damage to property), a minor contribution to the global evil may be sufficient for the imposition of a legal duty.

¹⁴² That goes at least for the foreseeable future.

¹⁴³ I.e., if the two top emitting states would drastically reduce their GHG emissions, that would make a big difference; but even in that scenario, the harmful consequences of climate change will ensue.

The view that excessive GHG emissions of a single actor are not dangerous in a legal sense is unsustainable, despite the fact that they do not cause harm by themselves. It would imply that the law would not be able to deal with the most serious challenge of our time, but only with run-of-the mill cases.¹⁴⁴ In our submission, minor or even – seen from a global angle – negligible contributions are still a sufficient basis for rendering GHG emissions wrongful (tortious; see Principles 11 and 13). This submission is well in line with the view that the extent of the risk of harm to others affects the extent of the burden or duty to avoid injury.¹⁴⁵ In relation to global challenges, society would be badly served with views ignoring the unfortunate reality that:

- a) climate change cannot be prevented but by collective actions;
- b) if we fail, or if major or many small players do not curb emissions, present and future generations will face devastation;
- c) it is possible, but by no means imperative, to interpret “dangerous” narrowly;
- d) case law is often very strict in imposing liability for causing personal injuries, even where the likelihood that they would materialise was remote;
- e) impact assessments are frequently required for the building or expansion of manufacturing facilities.¹⁴⁶ The impact of climate change is one of the aspects that must be taken into account.¹⁴⁷

¹⁴⁴ See, for elaboration in Climate change remedies, o.c. p. 50ff.

¹⁴⁵ Prosser, Wade and Schwartz’ Torts p. 148.

¹⁴⁶ See Jennifer C. Li, Environmental Impact Assessments in Developing Countries: An Opportunity for Greater Environmental Security?, Working Paper No. 4, 2008, www.fess-global.org. This is not to suggest that they are necessarily carried out as they should;

¹⁴⁷ See inter alia: Brian J. Preston, The Influence of Climate Change Litigation on Governments and the Private Sector and in Leadership by the Courts in Achieving Sustainability, http://www.lec.justice.nsw.gov.au/agdbasev7wr/assets/lec/m4203011721754/preston_influence%20of%20climate%20change%20litigation.pdf

and George Pring and Catherine Pring, Specialized Environmental Courts and Tribunals: The Explosion of New Institutions to Adjudicate Environment, Climate Change, and Sustainable Development,

http://conference.unitar.org/yale/sites/conference.unitar.org.yale/files/Pring_Paper.pdf. See also European Commission, Impact Assessment Guidelines 15 January 2009, SEC (2009) 92.

This suggests that even a marginal impact on the global climate matters, from a legal perspective; see also Principle 8 and the commentary thereto.

Climate change is, among many other evils, about *untold* human suffering around the globe. Private law often requires bold and effective steps to ward off the threats concerning, inter alia, personal injury and major human suffering.

The final element of the PETL formula, namely the costs of precautionary or alternative measures, deserves special attention. To what extent will the costs to be incurred to achieve the necessary reduction of GHG emissions affect the imposition of duties to reduce emissions? The cost of mitigation may be relevant in relation to enterprises, poorer nations and potentially even the wealthiest countries. It also may be of particular relevance in times of crisis.

As a point of departure, the importance of this factor should not be overstated. By way of example: the German Supreme Court is very reluctant to attach any importance to it.¹⁴⁸ Van Dam convincingly demonstrates that the risk that someone will suffer personal injury generally will suffice for courts to require considerable precautionary measures.¹⁴⁹ Prosser et al. observe that the social value of the imperiled interests counts; so does the extent of the harm. In the context of climate change, it is unlikely that the cost issue would outweigh the latter two. All the more so as the costs involved in coming to terms with the looming threats are bearable if we do not leave it till too late and if only limited obligations are imposed on vulnerable nations. So, in light of the magnitude and seriousness of the threats of climate change, the cost of mitigation will not serve as a valid justification for inaction. Moreover, a legal duty to take steps to prevent climate change can be justified on the basis that the cost of the consequences of climate change in the case of inaction will far exceed the cost of preventing them.¹⁵⁰

¹⁴⁸ BGH 29 November 1983, NJW 1984, 801, 802.

¹⁴⁹ Tort law, o.c. nr 807-1.

¹⁵⁰ This submission is in line with the view expressed by Christie et al., o.c. p 158, be it not in the context of climate change. Dan Dobbs convincingly argues that the kind of loss also plays a role; o.c. p. 346.

In the case of vulnerable nations, the cost of mitigation nevertheless may serve as a basis for imposing obligations that are less onerous when compared with those of “developed” countries. This exception should prove the rule. In fact the exception will be justifiable only on the basis that there are others who are better situated to take the required measures and therefore should do so.

It follows, we think, that tort law provides a sufficiently solid legal basis for our reduction principles, all the more so in light of the supportive arguments from other realms of the law. First, it urges global reductions to meet the target set forth in Principle 6. Secondly and for lack of better and workable suggestions, it supports the principle that countries above the permissible quantum are under an obligation to reduce their emissions to that quantum. Thirdly, countries below the permissible quantum do not commit wrongful acts, unless they refrain from reductions mentioned in Principles 7, 8, 9, 17 and 21. This, we believe, follows from the per capita approach that would be undermined otherwise. In light of the imminent threats, they, too, should contribute if the reduction could be achieved at no more than minimal cost; that is exactly what a “bonus pater familias” ought to do. That might be different in relation to, e.g., tax exemptions for the travel industry in poor countries. As long as long distance travelling is still almost universally accepted, one could barely blame a poor country for subsidizing domestic air travel if that would attract tourists.¹⁵¹

This is not to say that litigation based on (the underlying principles of) tort law will be a walk-over. So far, the U.S. Supreme Court has held that GHG emissions are not subject to the federal common law of nuisance, since Congress in enacting the Clean Air Act gave the EPA the exclusive federal power to set GHG emissions (American

¹⁵¹ Nevertheless, we seriously doubt whether unlimited and unnecessary travelling by air can be reconciled with the urgent need to curb GHG emissions. But we also realise that restrictions may hugely jeopardise international tourism, in quite a few instances one of major sources of income of poor countries. See: UNEP, *Moving towards a climate neutral UN*, 2011 edition supra 4. According to International Civil Aviation Organization (a UN Agency), the aviation industry’s contribution to climate change has not been given due attention: *Grounded, How ICAO failed to tackle aviation and climate change and what should happen*, transportenvironment.org/sites/te/files/media/2010_09_icao_grounded.pdf .

Electric Power v. Connecticut (2011).¹⁵² This leaves untouched that tort law *conceptually* provides a fairly sound basis for our reduction principles; all the more so if one would be willing to draw from all relevant realms of the law, such as international, human rights, environmental and constitutional law. Taken together, they provide a strong basis. Justice Brian Preston rightly put it as follows:

“In the environmental context, it would be a spurious interpretation for a court to cure what it perceived to be deficiencies in the statute by making, unmaking or remaking the law to promote or better implement environmental goals (...). However, this is not to say that a court cannot adopt a construction of a statute which promotes or better implements environmental goals, if to do so is consonant with and required by the principles of genuine interpretation. Indeed, courts have, through genuine interpretation, construed many planning or environmental laws to require consideration of the principles of ecologically sustainable development.”¹⁵³

He also quoted Sir Anthony Mason: “[Judges] must have an eye to the justice of the rule, to the fairness and the practical efficacy of its operation in the circumstances of contemporary society.”¹⁵⁴

We realise, of course, that, if brought before courts, it cannot be taken for granted that courts will issue judgments urging nation states to curb their emissions significantly. No doubt judges willing to do so will be labelled activists. It could also be argued that judges keen to abstain are activists, albeit conservative ones unwilling to apply well established concepts to a new set of cases. As a matter of fact, bold judgments will contribute to the prevention of global catastrophes. That, at least, cannot be denied.¹⁵⁵

States or enterprises may, if supported by the facts, feel tempted to justify their conduct on the basis that their GHG emissions are well in line with those of other

¹⁵² See, about other countries, the country reports in Richard Lord, Silke Goldberg, Lavanya Rajamani and Jutta Brunnée, *Climate Change Liability*.

¹⁵³ Brian J. Preston, *Leadership by the Courts in Achieving Sustainability*, [http://www.rmla.org.nz/upload/files/leadership_by_the_courts_in_achieving_sustainability_\(rmla_conference,_wellington,_nz_oct_2009\).pdf](http://www.rmla.org.nz/upload/files/leadership_by_the_courts_in_achieving_sustainability_(rmla_conference,_wellington,_nz_oct_2009).pdf), p. 9.

¹⁵⁴ O.c. p. 6.

¹⁵⁵ This is a sensitive issue, also for the members of our group. A few members stress that judges must respect the separation of powers, as, f.i., U.S. courts tend to do.

countries or enterprises. That argument should be rebutted. First and foremost, the other countries and enterprises referenced by unwilling nations and enterprises must also curb their GHG emissions. Secondly, the mere fact that others also commit evil is not an excuse or justification for doing the same.¹⁵⁶ The Restatement of Torts 2nd puts it convincingly as follows:

“In determining whether conduct is negligent, the customs of the community, or others under like circumstances, are factors to be taken into account, but are not controlling where a reasonable man would not follow them”.¹⁵⁷

The Commentary elucidates:

“No group of individuals and no industry or trade can be permitted, by adopting careless and slipshod measures to save time, effort, or money, to set its own uncontrolled standard at the expense of the rest of the community. If the only test is to be what has always been done, no one will ever have any great incentive to make any progress in the direction of safety.”¹⁵⁸

The many asbestos and fewer tobacco cases decided around the globe, mostly to the detriment of defendants, underscore this point.

At first glance, tort law may not be a sound legal basis for differentiating the obligations of states as set out in Principle 14ff. But the opposite is also arguable:

a) it would be unfair to expect that the least developed countries must take steps with hugely adverse consequences for their population (a fair outcome matters, as mentioned above);

b) the impact of the costs to be incurred to prevent harmful climate change may justify some leniency; see Principles 7 and 8.

Whatever our conclusion on this point, we do not need tort law for this purpose. The common but differentiated responsibility concept can be called to aid for this purpose; see Principle 14.

¹⁵⁶ Ideally speaking, the extent of reductions to be achieved by States and enterprises should be determined by adequate – i.e., sufficiently far reaching – legislative instruments. But this is unlikely to happen in the short term.

¹⁵⁷ § 295A.

¹⁵⁸ Vol. 2 p. 63.

Commentary to the respective principles

Precautionary principle

General observations

The precautionary principle has emerged as one of the cornerstones of modern law.¹⁵⁹ It is tackled in quite some detail in the ILA draft (article 7B). The Commentary to the latter draft explains the legal basis of the principle. We accordingly refer to ILA's commentary for the underpinning of the precautionary principle,¹⁶⁰ with a few general additions and a justification for our slightly different, more stringent, interpretation.

The precautionary principle is a legal (and moral) concept. Its goal is to strike a fair balance between diverging interests of the parties who are confronted by uncertainties regarding risks. The most common application is in the context of scientific uncertainty: we do not yet know whether or not a specific substance, product, activity or technology poses threats. In such a scenario, one should remain on the safe side.

There is a wide spectrum of potential uncertainties. On one extreme of the spectrum, we simply do not have a clue whether or not "something" might be harmful (the so-called unknown unknowns).

Despite the fact that a small number of experts still doubts whether climate change is human induced,¹⁶¹ we do not have any doubt whatsoever that we must ignore these doubts when it comes to the question whether or not states and enterprises are under a

¹⁵⁹ See, inter alia, Miriam Haritz, an inconvenient deliberation: the precautionary principle's contribution to the uncertainties surrounding climate change policy, and Arie Trouwborst, Precautionary rights and duties of states. Sands and Peel, o.c. p. 188 put it as follows: the precautionary principle is "sufficiently well established to provide the basis for an international cause of action; that is to say, to reflect an international customary legal obligation the violation of which would give rise to a free-standing legal remedy". See also the national reports in Richard Lord, Silke Goldberg, Lavanya Rajamani and Jutta Brunnée (eds.), Climate change liability.

¹⁶⁰ See also: Principle 15 Rio Declaration; art. 3 para 3 UNFCCC.

¹⁶¹ According to IPCC "human influence is clear", IPCC, Fifth Assessment Synthesis Report, Summary for Policymakers, 1 November 2014 p. SPM-3.

legal obligation to curb their GHG emissions.¹⁶² This no longer is a matter governed by the precautionary principle at all; see Principle 1 first paragraph. It follows – and that is our first important finding – that the precautionary principle does *not* come into play in relation to the question *whether* the climate is changing, nor whether this change is human induced. There clearly is a predominant view to the effect that climate change is real and that it is largely caused by human activities.¹⁶³ The overwhelming majority of experts warn of very grievous harm if we don't change course. So, for legal purposes, we must accept that climate change (and our present level of GHG emissions) give(s) rise to very serious threats, if not checked in the very near future.

Seen from a legal – and also policy – angle, the real difficulty lies in the uncertainty about the time we still have and the steps that we have to take to come to grips with the threats of climate change. How much time, if any, do we still have to ward off the major threats? To what extent do we have to reduce our GHG emissions and at what pace? In these respects, opinions diverge significantly. Part of the story probably is that estimates in the recent past were based on – as it has turned out – overly optimistic scenarios, i.e., the hope (or expectation) that GHG emissions would decrease or, at least, that the increase could be kept within the order of a few percent. Quite the contrary has happened. Another explanation probably is the interpretation of scientific data. This point may be illustrated by the following findings.

According to the latest IPCC report, an enormous reduction in GHG emissions from the business-as-usual path is needed if we are to meet the objective of keeping the average global temperature rise within two degrees Celsius of pre-industrial

¹⁶² This is not to suggest that we discredit the sceptics. Their views may or may not be mistaken; experience from the past has shown that minority views may turn out to be correct. The example par excellence is Galileo. Time will tell. These sceptics, however, are such a minority that their views have to be ignored *for legal purposes*.

¹⁶³ See footnote 4.

conditions.¹⁶⁴ Cumulative GHG emissions (in carbon dioxide equivalents) from 2011 through 2050 are projected to be (at the midrange of various probabilities) 2,075 gigatons under the business as usual scenario; to have a 50% chance of staying within two degrees, they would need to be around 925 gigatons; and to have a 90% chance, they would need to be around 550 gigatons.¹⁶⁵

On November 19, 2012, the World Bank issued an alarming report: Turn Down the Heat.¹⁶⁶ It provides a gloomy picture of the world's future if we do not change course. It serves as strong support for the urgent need to achieve far-reaching reductions of GHG emissions. The report functions

“as a rigorous attempt to outline a range of risks, focusing on developing countries and especially the poor. A 4°C world would be one of unprecedented heat waves, severe droughts, and major floods in many regions, with serious impacts on ecosystems and associated services. But with action, a 4°C world can be avoided and we can likely hold warming below 2°C.
(...) Even with the current mitigation commitments and pledges fully implemented, there is a roughly 20 percent likelihood of exceeding 4° by 2100. If they are not met, a warming of 4°C could occur as early as the 2060s.”¹⁶⁷

James Hansen and others have issued a warning that

“if reductions begin this year¹⁶⁸ the required rate of decline is 6%/year to restore the Earth's energy balance, and thus approximately stabilize climate, by the end of this century. If emissions reductions had begun in 2005, the required rate was 3%/year. If reductions are delayed until 2020, the required reductions

¹⁶⁴ The two degree threshold serves as the basis for our principles; see § 1. We acknowledge that a lower threshold (f.i. 1,5 degrees C) might be preferable; see IPCC, Synthesis Report (Longer version), o.c. p. SYR 29ff.

¹⁶⁵ Intergovernmental Panel on Climate Change, Climate Change 2014: Mitigation and Climate Change, Summary for Policymakers, p. 12 Table SPM.1 (2014). According to PwC “the G7 needs to further reduce its absolute carbon emissions by 44% by 2030 and 75% by 2050 compared with 2010 levels”; see Two degrees of separation: ambition and reality, Low Carbon Economic Index, September 2014, p. 1; see also Synthesis report of November 1, 2014, Summary for Policymakers p. SPM-15.

¹⁶⁶ Why a 4°C Warmer World Must be Avoided; see also The World Bank, 4o, Turn down the Heat, Climate Extremes, Regional Impacts, and the Case for Resilience.

¹⁶⁷ Executive summary p. 1.

¹⁶⁸ I.e., probably 2013; the last revised version is dated 23 March 2013.

are 15%/year. And these scenarios all assume a massive 100 GtC reforestation program, essentially restoring biospheric carbon content to its natural level.”¹⁶⁹

The scenario which we choose as our point of departure matters.¹⁷⁰ If Hansen et al. are correct, we are under immense pressure to reduce GHG emissions immediately.

However, the IPCC is arguably less pessimistic than Hansen et al. and, according to their estimations, we have more time to effect reductions in emissions.

If there would be any divide between the worst case scenarios submitted by IPCC and Hansen et al., we do not express a view on this controversy. After all, that is far beyond our expertise.

The application of the precautionary principle to uncertainties regarding the pace and extent of the reductions needed may be contested. These are not typical scenarios/risks governed by the precautionary principle. The precautionary principle ordinarily applies to scientific *uncertainty about the potential risks*. In the setting of climate change, the risks *as such* are well understood (flooding, natural catastrophes, droughts, increase of diseases, etcetera), but the opinions of eminent experts diverge as to the *the scope of the measures* that need to be taken. We leave this doctrinal issue for what it is. At the very least, the *concept* of the precautionary principle paves the way to a “solution”. It could, at least, be applied analogously.¹⁷¹

¹⁶⁹ James Hansen and many others, *Scientific case for Avoiding Dangerous Climate Change to Protect Young People and Nature*, p. 2. On p. 10, 3,5%/year is mentioned instead of 3%/year. Departing from 50 GtC reforestation, the level of reduction required would amount to 9%/year (p. 10). The authors point at geo-engineering as a possible solution, be it not in the short term (p. 10).

¹⁷⁰ That also goes for the ultimate goal. It matters whether the increase of average temperature were to be kept below a threshold of 1.5 or alternatively 2 degrees C. The COP meeting left this open; see Decision -/CP.20 (Advance unedited version) p. 1. If an increase by more than 1.5 degrees C would entail significant risks for humanity, nature, the environment or other living species, the precautionary principle probably requires departure from 1.5 degrees. Whether or not that is the case depends primarily on the magnitude of the risks.

¹⁷¹ We endorse the view of the ILA draft that there is a fluid line between both; see Commentary to Article 7 supra 1.

For our purposes, we do not have to delve into the various versions of this principle.

The EU-version is quite appealing. The principle applies in

“those specific circumstances where scientific evidence is insufficient, inconclusive or uncertain and there are indications that through preliminary objective scientific evaluation that there are reasonable grounds for concern that the potentially dangerous effects on the environment, human, animal or plant health may be inconsistent with the chosen level of protection.”¹⁷²

The EU Commission (rightly) observed that “requirements linked to the protection of public health should undoubtedly be given greater weight than economic considerations”.¹⁷³

Largely similar versions have been applied by Courts around the globe and are laid down in a series of international instruments.¹⁷⁴ In an Australian case, Justice Talbot held that

“the element of caution dictates that the Court, as the consent authority, needs to adopt *every avenue open to it* in order to *minimise any potential risk of an adverse impact* from the proposal *no matter how remotely connected or unlikely the manifestation* of that risk is”¹⁷⁵ (emphasis added).

The UN Global Compact “Ten Principles” requires “businesses to support a precautionary approach to environmental challenges.”¹⁷⁶ In light of the commentary, it is a watered-down version of what is commonly understood by precaution, if not for

¹⁷² COM (2000) 1, 9 and 10.

¹⁷³ O.c. p. 20.

¹⁷⁴ See, for further details, Brian J. Preston, *The Role of the Judiciary in Promoting Sustainable Development: The Experience of Asia and the Pacific* and EU COM (2000) 1 with further references.

¹⁷⁵ *Port Stephens Pearls Pty Ltd v Minister for Infrastructure and Planning*, [2005] NSWLEC 426 (15 August 2005) at 56, quoted by Brian J. Preston, o.c. p. 60; the case is about an appeal against the refusal, in light of the sensitive environment, by the government to establish pearl farming. See also Joakim Zander, *Different Kinds of Precaution, A comparative analysis of the precautionary principle in five different legal orders*; Philippe Cullet, in Malgosia Fitzmaurice, David M. Ong and Panos Merkouris (eds.), *Research Handbook on International Environmental Law* p. 161ff.; *Shaping the Law for Global Crises*, o.c. p. 61 ff; Tuula Honkonen, *The Common but Differentiated Responsibility Principle in Multilateral Environmental Agreements*.

¹⁷⁶ Principle 7.

other reasons because it takes “political considerations such as acceptability to the public” into account. Much emphasis is put on cost-effectiveness. As already observed before, this emphasis strongly supports our principle if one bears in mind that a better-safe-than-sorry approach in the realm of climate change will be much cheaper than running the risk of global devastation.

If we apply the EU approach, it is beyond reasonable doubt that credible findings by a substantial number of eminent experts in the field should be our starting point. After all, they are “a reasonable ground for concern” in the sense just mentioned. More concretely: the credible findings of even a smaller group of eminent climate change experts should be our starting point, given that they give rise to reasonable concern. In other contexts, less certainty about the likelihood that a risk would materialise was required and it was not necessary to show that it would have a large impact once it occurred; see above § 4.4. We reiterate that the findings must be sufficiently credible and realistic to serve as the basis for calculating the reductions needed. That does not mean that they have to be accepted by most or the majority of leading climate change experts. As a rule of thumb, they should, at least, be recognised as “credible” and “realistic”, i.e., based on sound research, even if many other distinguished experts disagree. Below we will further elaborate on this.

The view just expressed is not necessarily commonly accepted. A U.S. Federal Court took the view – albeit in a different context – that “more than a mere scintilla of evidence”¹⁷⁷ but less than a preponderance is required. Another court required “such relevant evidence as a reasonable mind might accept as adequate to support a conclusion.”¹⁷⁸ The ILA draft also seems to suggest a higher threshold.¹⁷⁹

¹⁷⁷ *AT&T Wireless PCS Inc. v. City Council of Virginia Beach*, quoted by Joakim Zander, o.c. p. 325. This standard was introduced by the U.S. Supreme Court in *Universal Camera v. NLRB v. Grand Canyon Mining Co.*, 340 U.S. 474, 488 (1951), in relation to “substantive evidence”.

¹⁷⁸ *Associated Fisheries of Maine Inc v. Daley*, 127 F.3d.104 at 109, quoted by Zander p. 325.

¹⁷⁹ See art. 7B para 2. According to the Commentary, referring to art. 3 para 3 FCCC and Principle 15 of the Rio Declaration, the “trigger” is whether or not there is “full scientific

If the standard emanating from the two just-mentioned U.S. judgments is to be applied, our approach would still be valid. Given the magnitude of the evil that is going to materialise if we do not take sufficient preventive measures, alarming findings by a substantial number of credible and eminent experts would probably suffice to convince a “reasonable mind” if their submissions are realistic. Of course, the emphasis here is on credible, realistic and eminent; it may make a difference whose mind is taken as the yardstick.¹⁸⁰

In the light of the sheer amount of eminent climate change scientists, a view submitted by a single or a few brilliant climate change experts will not carry enough weight to serve as a legal basis for global reductions. That is not to say that these views are necessarily mistaken (Galileo may serve as an example), but in light of the consequences for society as a whole, it would be over-demanding to expect that the extent of the reductions of GHG emissions globally required should be based on such a minority view. This would put a disproportionate burden on many countries and by the same token on their people. A practical argument supports this view. It is unlikely that submissions about worst case scenarios by one or a very few distinguished climate change scientists, going well beyond the worst case scenarios painted by the majority of distinguished climate change experts, will be accepted as sufficiently sound (credible) by their peers.

We have explored options to make our formula as concrete as possible. For that purpose, we have introduced the word “substantial”. We realise that this is a bit vague, but the advantage of this approach is that it leaves sufficient manoeuvring room to take all relevant aspects into account, i.e., to base the judgment on the merits of the case in point.

certainty.” ILA emphasises that this formulation has been criticised; instead ILA advocates “reasonably foreseeable” (Commentary supra 13).

¹⁸⁰ The US Court of Appeals interestingly and perhaps realistically observed that “the “reasonable mind” of a legislator is not necessarily the same as the “reasonable mind” of a bureaucrat”, *AT&T Wireless PCS v. City Council of Virginia Beach*, 155.F3.423 supra V.

Hence, we do not require a majority view among leading climate change experts. Thus, our principle tries to strike a fair balance between diverging interests: the urgent need to avoid major and global catastrophes, on the one hand, and major but, as it will turn out in the future, unnecessary reduction measures with a huge adverse impact on society, on the other hand. That said, one must bear in mind the very high price that will have to be paid if *insufficient* steps are taken.

The ILA draft advocates that the precautionary principle entails some cost/benefit-analysis.¹⁸¹ With the proviso discussed below, *supra* 4, we do not think that this parameter will have a major impact on the application of this principle in the context of climate change. That would – perhaps¹⁸² – be different if “society” would have to give up a major part of its economic fortunes. But that is not the case, as is demonstrated in the Stern report. It may turn out that products and services may become somewhat more expensive; some enterprises may even have to close down, but that in itself is no reason to relax the application of the principle.¹⁸³ Although there also may be other justifications for our approach, we justify it on the basis that economic loss and – more importantly – human suffering will be significantly higher if it would turn out that we based our duties to reduce on estimates that were not sufficiently conservative. A case decided by the Supreme Court of India seems to support this view:

“though the leather industry is of vital importance to the country as it generates foreign exchange and provides employment avenues it has no right to destroy the ecology, degrade the environment and pose a health hazard.”¹⁸⁴

¹⁸¹ Art. 7B para 2 speaks of “cost effective measures”.

¹⁸² The argument that it would matter that the rich countries would have to give up a major part of its economic fortunes will – understandably – not be appreciated by the few billions of people who still are considerably worse off.

¹⁸³ We do realise that the reduction trajectory we advocate will have adverse consequences; for some groups, they may even be severe. Taking a wait and sit position or embarking on insufficient reductions will end up with many more adverse consequences.

¹⁸⁴ *Vellore Citizens Welfare Forum v. Union of India per Kuldip Singh J.*, quoted by Preston, o.c. p. 62.

It seems self-explanatory that the impact of climate change will be of a fundamentally different magnitude than that of the leather industry in India.

There is an emerging school of thought that the onus of proof is on the actor (State or enterprise) to show that its present level of GHG emissions is benign.¹⁸⁵ This burden of proof includes the following issues:

- a) Whether a specific worst case scenario should be the legal basis for determining the scope of reductions;
- b) If relevant at all, the feasibility (either technically or economically) of curbing GHG emissions to the extent necessary.

Two inter-related issues regarding the extent to which GHG emissions have to be curbed, must be discussed. First, it is sometimes proposed that major reductions of GHG emissions at this stage are not required, as other solutions to come to grips with climate change are close at hand; scientific progress will fix the problem. Secondly, it is submitted that there are other solutions to the problem of climate change, but that we just fail to use them.

Both arguments may be valid. It may happen that technology will progress at such a pace that clean energy “producing” equipment or safe and adequate measures to offset GHG emissions will become available in the nick of time.¹⁸⁶ Those who advocate the former argument probably/hopefully mean that technology will be developed that is capable of achieving far-reaching reductions in the short term *after offsetting* the carbon footprint for manufacturing and maintaining the equipment. It can only be hoped that they are right. But ignoring Hansen’s warnings about the additional efforts needed if we take a wait-and-see position right now is far too risky. The precautionary principle shows why there is not yet sufficient certainty about the possibility of

¹⁸⁵ Borrowed from *Vellore Citizens Welfare v. Union of India*, AIR 1996, SC 2715; see also *Conservation Council of South Australia v Development Assessment Committee and Tuna Boat Owners Association (No. 2)*, [1999] SAERDC 86; see also Preston, o.c. p. 54ff.; 65 and 66; UNEP Judicial Handbook p. 23; EU COM (2000) 1 at 20 and 21.

¹⁸⁶ Geo-engineering is one of them.

developing these technologies. As explained above: in light of the magnitude of the losses that will occur if we take the wrong decisions, doubts cast by serious and credible scientists in the relevant field require that we do not take a “hope for the better” position.

The same goes for alternatives such as carbon storage and/or geo-engineering.¹⁸⁷ We observe, in the meanwhile, that leading experts are critical of these technologies.¹⁸⁸

Comments on the first paragraph

The evidence follows from the subsequent IPCC studies and the other studies discussed in these reports; see, for elaboration, § 1 and the general observations above.

¹⁸⁷ See about the latter IPCC Special Report, Carbon Dioxide Capture and Storage, A Special of Working Group III of the IPCC 2005 and Gerd Winter, Climate Engineering and International Law: Final Exit or the End of Humanity, in Ruppel et al, o.c. p. 979ff. Michael Gerrard rightly observed that the effects are “now difficult or impossible to predict, but they could be dramatic, as well as expensive and controversial. Yet currently, there is neither a domestic nor an international regime in place to regulate geoengineering research or deployment. This increases the chances that a state (or, some believe, even a very wealthy individual) could undertake a geoengineering program unilaterally, with a great potential of international conflict”, in Michael B. Gerrard, and Jody Freeman (eds.), Global Climate Change and U.S. Law 2nd ed. p. 30. Carbon storage, as part of carbon capture and storage (CCS), is a technology under which emissions from a power plant or other technology are captured, and the carbon is permanently stored, probably in a geologic reservoir. This technology is not yet in widespread commercial application anywhere, and there are significant doubts about whether it will ever be economical. But, if it were, there is not so much worry that it will have adverse effects (though there is worry that some of the CO₂ will leak out over time).

Geoengineering falls into two categories: carbon capture and solar radiation management. Carbon capture basically involves capturing CO₂ from the ambient air (as opposed to from a power plant or factory just before it goes out the smokestack), and then probably storing the captured CO₂ in a way similar to CCS. This technology is much less advanced than CCS, but if it works, the risks are similarly modest.

On the other hand, solar radiation management involves trying to cool the planet by keeping out a great deal of sunlight, by for example dumping massive quantities of sulfates into the atmosphere to simulate a volcano. This technology is not very sophisticated and could probably be deployed. However, virtually everyone who studies it agrees that its risks are horrific. I don't think any responsible scientist or analyst thinks it's a good idea right now, but some advocate seeing it as an absolute last resort (in the same way that chemotherapy is a last resort for a cancer patient), thus Michael Gerrard explains.

¹⁸⁸ The Royal Society, Geoengineering the climate, science, governance and uncertainties, September 2009. See also ETC Group, Geopiracy, the Case Against Geoengineering.

By referring to “future generations,” we probably do not have to answer the question whether or not the current generation has obligations towards future generations. The measures advocated in our principles are sufficiently founded in the interests of current generations, although the most grievous effects of unchecked GHG emissions will be felt at some time in the future. Thus we do not have to dwell on the question whether we have “*additional* obligations” towards future generations. We attempt to side-step this question as the state of the law makes it difficult to draw confident conclusions about the existence and extent of “*additional* obligations” towards future generations.¹⁸⁹

Nevertheless, there is considerable support for the submissions that the present generation has such obligations.¹⁹⁰ In the unlikely event that courts conclude that

¹⁸⁹ See, in more detail, Lawrence, o.c. p. 53ff. and 77/78. That may be different in relation to, e.g., adaptation. See, about adaptation, Michael B. Gerrard and Katrina Fischer Kuh (eds.), *The Law of Adaptation to Climate Change*.

¹⁹⁰ Over the last almost sixty years, the concept of intergenerational equity has gained ground; see, in considerable detail, Edith Brown Weiss, *Implementing intergenerational equity*, in Malgosia Fitzmaurice, David M. Ong and Panos Merkouris (eds.), *Research Handbook on International Environmental Law* 2011 p. 103ff; Peter Michael Lawrence, *Justice for Future Generations: Climate Change and International Law*, thesis Tilburg 2013 p. 77ff and 119ff; Burns H. Weston and Tracy Bach, o.c. p. 28ff and the separate opinion of Judge Cancado Trindade in ICJ case *Whaling in Antarctic* supra 41ff. It is acknowledged in a series of international instruments, pledges, national laws and constitutions as well as case law; see, in more detail, Edith Brown Weiss, *Implementing intergenerational equity*, in Malgosia Fitzmaurice, David M. Ong and Panos Merkouris (eds.), *Research Handbook on International Environmental Law* (2011) p. 100 ff. By way of example: UNESCO has issued a *Declaration on the Responsibilities of the Present Generation Towards Future Generations*. Article 1 puts it seemingly in bold and unequivocal terms: “The present generations have the responsibility of ensuring that the needs and interests of present and future generations are fully regarded.” Article 2 adds that it is “important” “to make every effort to ensure, with due regards to human rights and fundamental freedoms, that future as well as present generations enjoy full freedom of choice as to their political, economic and social systems and are able to preserve their cultural and religious diversity”. Article 4 reads: “The present generations have the responsibility to bequeath to future generations an Earth which will not one day be irreversibly damaged by human activity. (...)” As to ecosystems, article 5 para 1 adds that “the present generations should strive for sustainable development and preserve living conditions, particularly the quality and integrity of the environment.” According to para 4, “present generations should take into account possible consequences for future generations of major projects before these are carried out”. The same goes for Principle 3 of the Rio Declaration:

climate change insufficiently impairs the interests of the present generation (young children included) to justify obligations as set out in these principles,¹⁹¹ the interests of future generations ought to be considered. If catastrophe would set in, the interests of future generations would be jeopardised, even if that would not yet be the case in relation to the present generation. But even if we would have to take the rights of or obligations to future generations into account, they would not forge more stringent obligations than those emanating from these principles.

Comments on paragraph a

The question what is “a credible and realistic worst case scenario” and who are “eminent climate change experts” is not a legal issue. There will unavoidably be some dispute about these issues, but there is little we can do to solve them. We quite strongly believe that this principle requires reliance on the most demanding reduction scenario submitted by IPCC¹⁹² or, if more demanding, by a substantial number of other eminent experts. According to IPCC:

“Scenarios that are *likely*¹⁹³ to maintain warming at below 2 C are characterized by a 40% to 70% reduction in GHG emissions by 2050, relative to 2010 levels, and near zero in 2100.”¹⁹⁴

In our view, a mere likelihood of “66-100%” is an insufficiently sound and safe basis to determine the reductions of GHGs legally required. *If* the just-mentioned scenario were to serve as the basis for calculations of the reductions legally required, the highest percentage (70) should be adopted.

“The right to development must be fulfilled so as to equitably meet developmental and environmental needs of the present and future generations.” See also James Hansen et al., *Scientific Prescription to Avoid Dangerous Climate Change to Protect Young People, Future Generations, and Nature*, par. 8.3.

¹⁹¹ That would be an unsatisfactory and unconvincing position. All the more so as the consequences of climate change already are manifest; see, also for further references, *Shaping the law for global crises*, o.c. p. 17ff.

¹⁹² See Synthesis report of November 1, 2014, Summary for Policymakers p. SPM-15ff.

¹⁹³ I.e., a 66-100% likelihood; see IPCC 5th Assessment Synthesis Report, *Climate Change 2014, Longer Report*, adopted November 1, 2014 p. SYR-4.

¹⁹⁴ IPCC, longer report (previous footnote) p. SYR-39.

The ILA rightly observes that new scientific knowledge requires continuous assessment of the obligations.¹⁹⁵ We also second its view that “(i)improvements in scientific knowledge about damage from climate change – for instance, shifting a threat from plausible but not conclusively scientifically proven risk to likely harm – will require the substitution of precautionary measures with preventive measures.”¹⁹⁶

Comments on paragraph b

Paragraph b provides a very narrow escape: completely disproportionate cost. The combination of “disproportionate” and “completely” underscores that this principle can only be invoked in exceptional circumstances. All kinds of ordinary misfortunes and even events with considerable deleterious consequences for large groups of people around the globe, such as global financial crises, are by no means a justification to lower the standard of principle 1. This should be so even if these events would temporarily impair the exercise of one or more social or economic rights of (a major part of) the population.¹⁹⁷ That may sound heartless, but any other position would lay the foundation for *much more* serious global evil and, by the same token, more serious and long-lasting impairment of social and economic rights.

By way of hypothetical example: if a substantial number of eminent and credible experts would realistically conclude that global GHG emissions would have to be reduced by 80% before 2020, whereas the next worst scenario painted by equally eminent experts would require “only” a reduction of 60% before 2030, it might be completely disproportionate to assume the former scenario, given that in this example the only way to reduce GHG emissions by 2020 by 80% might (and probably will) end up in global economic devastation. But even in the latter scenario, one should bear in mind that the toll in human and economic terms will be significantly higher if we

¹⁹⁵ O.c. art. 7B para 3.

¹⁹⁶ Commentary to art. 7 supra 17.

¹⁹⁷ Several international tribunals and national superior courts have ruled that, e.g., major cuts of retirement benefits and/or wages amount to such a violation, despite the alleged need to do so in light of the financial crisis.

would ignore the view of the formerly mentioned “very few eminent experts,” if it would turn out that their view is right.

So it is far from self-explanatory that one could adopt the 60%-scenario. It is very difficult to go into more detail as the answer depends on the balancing of the diverging interests; such a balancing cannot be executed in the abstract. Some economic hardship right now will be an unavoidable toll that has to be accepted *if* the consequences would otherwise be even greater devastation. More likely than not, society does not have to make such choices. It is possible to achieve major reductions with existing technologies. On an overall basis, this would not seriously jeopardise the economy of the world (though some areas that are now particularly dependent on fossil fuels would experience real dislocations). It may be impossible to do so, so to speak, overnight. Hence, if application of this principle would have unbearably harsh consequences, a short “adaptation period” may be allowed if, in the meantime, effective steps are taken to achieve the required GHG reductions in the shortest possible time and if such a *terme de grâce* would not result in potentially even harsher and irreversible consequences in the future.¹⁹⁸

Definitions

Introduction: why do we need to distinguish among countries?

In our view the starting point of the obligations of all nation states to curb their GHG emissions is the amount of reduction needed to avoid passing the two degree threshold (Principle 6). In our view, the overwhelming part of GHG reductions has to be achieved by above permissible quantum countries (henceforth also referred to as APQ countries). We have struggled with the question whether and, if so, how to distinguish among APQ countries. Our debate has long been dominated by a further divide between above- or below-average countries.¹⁹⁹ It may make sense to impose stricter obligations on countries with emissions that are above the global average and less

¹⁹⁸ A scenario as painted in the text may fall under the umbrella of Principle 23.

¹⁹⁹ Calculated on a per capita basis. For our purpose, a country was labelled as above average if, in a given year, per capita emissions, calculated for the relevant country, exceeded the average. Below average meant that the emissions of the country did not exceed the global average.

obligations on those with below average emissions. Most of them have been major historical GHG emitters. Moreover, they represent most of the richer countries that have the resources to take the required mitigation measures.

We still believe that the latter distinction has its merits, but it also entails a few shortcomings that caused us to abandon it.

Not all above-average countries find themselves in the same or even in a sufficiently similar position. China may serve as an example. According to the most recent statistics, its per capita GHG emissions exceed those of Europe.²⁰⁰ But China has not made a major contribution to historical GHG emissions and it still contends with poor communities although its wealth is increasing rapidly.

A more flexible approach than above or below average seems preferable. The obvious disadvantage of this flexibility is its vagueness. One could imagine further distinguishing, say 25, 50 and 100% above the permissible quantum of a specific country. Once again, these categories would be somewhat arbitrary; we would be unable to provide a sound legal underpinning for such or any other distinctions apart from below or above permissible quantum. The same holds true for a sliding scale. Overstretching the obligations of a relatively small group of major emitters may turn out to be counter productive; there is a “fair” chance that the countries in point would argue that they are unfairly treated because the major part of the reduction-burden falls upon them.

How to calculate GHG-emissions?

The example of China mentioned above suggests another refinement of reduction duties. China is a major exporter. A considerable proportion of China’s emissions is a consequence of producing goods for export.

²⁰⁰ Based on The Conversation, Global carbon report: emissions will hit new heights in 2014, 21 September 2014; reference is made to the Global Carbon Project.

We have also considered whether production for export along the lines just mentioned would justify attribution of the relevant GHG emissions to the country where the products will (ultimately) be used or to the seat or main place of business of the enterprise in point. Seen from a moral angle, such an approach might carry weight. Moreover, it would prevent evasion of obligations by repatriation. We could well imagine that this would be(come) an issue to be discussed and ultimately decided in international negotiations. But we cannot discern a sufficiently solid legal basis for such a submission. See, for further elaboration, *supra* Principle 4 below.

We reiterate that this debate is *unrelated* to the obligation to reduce a country's GHG emissions to the permissible level. It comes into play only in relation to the obligations mentioned in Principles 8, 16, 19 and 23.

There is no obvious answer to the question how to count GHG emissions in specific fields, such as air transport. The relevant GHG emissions could be attributed to the country of departure or arrival or any country overflown by the plane. The allocation may have a more than marginal impact on the calculations. We do not have a concrete answer to this kind of questions.²⁰¹

One may also wonder whether GHG emissions brought about by manufacturing products in country A for the export into country B count as emissions by A or B. In our view, they count as emissions by country A. First, any other calculation would, at least, be practically difficult.²⁰² ²⁰³ Ever more products, semi-manufactured goods or

²⁰¹ See, in more detail, International Civil Aviation Organization (a UN Agency), the aviation industry's contribution to climate change has not been given due attention: Grounded, How ICAO failed to tackle aviation and climate change and what should happen. Similar questions arise in the context of military operations conducted by airplanes.

²⁰² There is work going into this now; see, in more detail:

<http://www.pnas.org/content/108/21/8903> and

http://www.wiod.org/conferences/groningen/paper_Boitier.pdf.

²⁰³ Several members of the group would intuitively or for fairness' sake be in favour of attribution to the country of consumption. But this would end up in a hopeless bureaucracy. It presupposes that there would be reliable statistics about the consumption in each single country about all products. That may be the case for some products and some countries (see, e.g., statistics provided by Index mundi and Statista), but almost certainly not for all countries and all products. Next, the emissions may depend on the use of the products; cars or lamps

components travel around the globe before they are put together in a final product. The only practical way to allocate the GHG emissions is to attribute the emissions of every phase of the process to the country where they occur. This seems also fair. The country of “production” mostly reaps the fruits of that activity.²⁰⁴ Last but not least: as a rule of thumb, States are not responsible for a *business decision* to migrate (part of) a manufacturing process to another (often so-called “low wages”) country; they cannot influence it and will often be unhappy with the decision, as it takes place at the expense of local employment and tax revenues. *If* there would be a legal basis to attribute GHG emissions of an outsourced activity to, f.i., the parent company, that would be far from self-explanatory for attribution of the emissions of these *enterprises* to the relevant state.²⁰⁵

As time progresses, ever more countries will probably try to effectuate countervailing measures to offset their GHG emissions. This raises the question how the GHG emissions of these countries have to be calculated. If and to the extent that GHG emissions can be “removed” safely and for a sufficiently long period, they can be offset, in that they can be deducted from the GHG emissions; see also Principle 5. Thus we do not express any view about the safety and desirability of any specific measure. We stick to the observation that the precautionary principle will equally come into play in relation to the safety and desirability of these countervailing measures.

may serve as an example. Finally, emissions flowing from manufacturing would have to be deducted or ignored in some countries (not obvious which countries), but only to the extent their products would be used for consumption in a wealthy country (again not crystal clear which countries would fall in the latter category). Hence our conclusion: this would be unworkable.

²⁰⁴ Admittedly, the consumption would be “enjoyed” in the countries of consumption. “Enjoyed” between inverted commas, as quite a few products are unhealthy.

²⁰⁵ One could argue that countries are responsible for consumption decisions, but it is open to debate whether that would be true in light of a series of trade agreements and the like.

We realise that this approach may hamper calculations; it may even be fraught with difficulties. After all, offsetting requires reliable information which can be controlled by independent institutions. It may be difficult to obtain such information.

Similar questions arise in the context of Principle 18. Only reductions that were directly brought about through means provided by a particular country can be offset by that country. This may again complicate calculations and require difficult monitoring mechanisms. These inherent challenges will have to be solved on a case-by-case basis. In case of doubt, offsetting should not be allowed.

(Un)certainly about the number of the population

The exact number of the population may be unknown in some countries. In those instances, the most reliable estimate should be used.²⁰⁶ Exact accuracy is not required here. The numbers will change every second. For that purpose, “within the relevant year” should be clarified. The more plausible solution seems: as per January 1 at 00.00 hours of the given year. We realise that this approach may stimulate or turn out to be to the benefit of countries with “excessive” population growth. Such a growth is clearly to the detriment of a wide spectrum of sustainability issues. Perhaps there is a need for a revision of numbers for countries with fast-growing populations. We cannot discern a (solid) legal basis for fixing specific rules to that effect to determine what would be an “acceptable” rate of population growth. These issues belong to the realm of (international) politics.

Principle 2

In line with the (still) prevailing view, we acknowledge the importance of the common but differentiated responsibilities maxim; see Principle 14. Hence, we distinguish between developed, developing and least developed countries. It accordingly matters whether a country falls into one of these categories.

²⁰⁶ Worldometers might be the most accurate point of reference.

To the best of our knowledge, there is no commonly accepted definition of “developed” or “developing” country.²⁰⁷ We have considered various concepts, such as the annual income per capita.²⁰⁸ But we have finally concluded that our principles would not be well served by referring to a definition that is not commonly accepted.

Principle 3

This definition largely speaks for itself.²⁰⁹

The maximum emissions per capita in a given year should be consistent with a plan of steady emission reductions (the “glide path”). By way of simplified example:²¹⁰ suppose current GHG emissions are equivalent to 50 billion metric tons of CO₂, and suppose respecting the two-degree threshold is compatible with a steady-state rate of 10 billion tons of CO₂ equivalent from 2050 to eternity.²¹¹ Then we need a glide path to reduce the annual emissions down to 10 billion, consistent with the two-degree threshold. Here annual reductions of ca. 4.5% would work. This would mean that the permissible quantum would be:

50.00 billion (2015)

47.75

²⁰⁷ See http://en.wikipedia.org/wiki/Developing_country and UN Statistics Division, Composition of macro geographical (continental) sub-regions, and selected economic and other groupings. The UN Conference on Trade and Development provides a list in its publication The Least Developed Countries Report 2011, but we cannot escape the impression that quite a few countries – such as Bahrain, Liechtenstein, Monaco but also Argentina, Botswana and South Africa – have been overlooked. Be it as it may, the latter list is not commonly accepted. Hence, we refrained from defining “developed” and “developing” countries, which only enter the scene in Principle 9.

²⁰⁸ We have also considered to borrow from the Montreal Convention on Ozone Reduction. Yet, there is major difference compared with that Convention, in that it provides detailed information about the respective obligations, which are the fruit of an international bargaining process. Unfortunately, there is not (yet) a sufficient international agreement in relation to the reduction of GHG emissions.

²⁰⁹ We acknowledge that under almost all imaginable scenarios, increasing emissions by a few and insufficient cuts by other major GHG emitting countries will dominate the world totals. The world would be a safer place if all countries would be willing to comply with our principles.

²¹⁰ This example does not fully account for the residence time of various greenhouse gases in the atmosphere and other timing issues. Nor does it account for emissions from aviation and international shipping.

²¹¹ More likely than not, GHG emissions will have to be reduced by 2050 to close to zero.

45.61
43.56
41.60
39.73
37.95
36.24
34.61
33.06
31.57
30.15
28.80
27.51
26.27
25.09 billion (2030)
23.96
22.89
21.86
20.88
19.94
19.04
18.19
17.37
16.59
15.84
15.13
14.45
13.80
13.18
12.59
12.02
11.48

10.97

10.48

10.00 billion (2050 and thereafter)

This glide path would lead to excess emissions (above the steady-state rate of 10 billion) of 540 billion metric tons of CO₂ equivalent, and it would be a permissible glide path only if it does not get us above +2 degrees. Then each annual quota would be divided among countries according to their population in this year to calculate the permissible quantum for the particular country in the particular year. The rest would follow as we have it in the principles.

Governments are not allowed to push their reduction obligations forward in time, thus reducing the reductions right now and offering all kinds of pledges about future reductions. If countries are allowed to delay reductions, the likelihood that they will not be performed rises. The governments that make pledges to perform in the future may themselves lose power, and there is no guarantee that other governments will adhere to them. Secondly, leading politicians have reiterated on numerous occasions that it is high noon and that far reaching reductions should have been achieved already. Such a position is irreconcilable with a new set of pledges about future steps, not accompanied by an appropriate level of reductions in the present. Thirdly, it is a *legal* imperative to start right now. There is a striking parallel with a factory emitting dangerous waste into a lake. Up to a certain level, the pollution does not create serious difficulties. It will not affect fish stocks or biodiversity or make the water undrinkable. Once a certain threshold is crossed, irreversible damage will occur. It goes without saying that the defence that the lake will not become irreversibly impaired because emissions will stop in the future fails. Despite this point of departure, Principle 18 provides a solution if a country has taken all steps reasonably available but nevertheless has failed to fulfil its obligation.

One may wonder why States and enterprises are allowed *at all* to emit GHG, assuming that it would be possible to achieve carbon neutrality straightaway.²¹² That is a difficult and a delicate issue. Our answer is that:

a) it is not *unlawful* to emit GHG in a specific year if the emissions are reduced to such an extent that they no longer cause (major) harm if the glide path is respected in relation to future GHG emissions;²¹³

b) additional reductions would unnecessarily harm the interests of the State or enterprise in point;

c) we say unnecessarily because there is no justification for giving emitters a “free ride” in subsequent years by allowing them to use the remaining carbon budget.

Principle 4

This definition speaks for itself. Hereinafter, above and below permissible quantum countries will be referred to as APQ, respectively BPQ countries.

Principle 5

We do not express a view on the safety or acceptability of alternative measures, such as geo-engineering²¹⁴ and carbon sequestration. They are briefly addressed below.

Again we believe that they should be accommodated only subject to the precautionary principle.

This principle addresses neither the measures that would qualify as means of reduction, nor the manner in which reduction will be calculated. Planting trees, e.g., probably reduces the GHG in the atmosphere, but we do not express a view whether

²¹² In most instances a rather hypothetical scenario.

²¹³ It is probably common ground in tort and environmental law that States and enterprises are, within certain limits, entitled to all kinds of emissions, even if these emissions may cause some damage, either individually or together with emissions by others. The case of climate change is different, primarily in light of the magnitude of the impending losses. This magnitude requires bold and effective mitigation. But that is not to say that States or enterprises should bear the full reduction burden in the shortest possible term, if the losses can still be avoided if others in the near future also curb their emissions.

²¹⁴ See, inter alia, Edward A. Parson and Lia N. Ernst, International Governance of Climate Engineering, <http://ssrn.com/abstract=2157754> and Royal Society (2009), Geoengineering the climate: science, governance and uncertainty.

planting trees counts as a reduction measure. Addressing these types of difficulties would go beyond our expertise.

Obligations of states and enterprises

Principle 6

The legal underpinning of this principle has been explained above in § 4. Unlike the determination of the reduction obligations of the respective States and enterprises, international and human rights law also support this principle.

It follows from the logic of the legal principles that underlie the obligations that we set out for States and enterprises that obligations should also be extended to other parties and even to every individual. However, we do not explicitly mention other parties.

Firstly, we accept that the primary obligations for reducing emissions should rest on States and enterprises because they have the ability to effect major reductions.

Secondly, we believe that it will be well-nigh impossible to enforce obligations to reduce emissions against individuals.²¹⁵

Suppose the glide path that safely keeps us below +2 degrees allows a permissible total of N tons of CO₂ equivalent for the current year. Then the permissible quantum for this year is obtained by dividing N by the number of people in the world.

Principle 7

The first sentence follows from the wrongfulness formula discussed above in § 4.4.

Given the seriousness of the threats of climate change and the urgent need to reduce GHG emissions, measures that can be effected at no relevant additional cost must be taken.

²¹⁵ This is not to suggest that individuals can lean backwards. We second the view, submitted by the High-Level Panel of Eminent Persons, A new global partnership, o.c. p. 8, that “individuals must transform the way they generate and consume energy.”

The principle is about, among other issues, the need to use carbon energy in an efficient way. Fiona Kinniburgh's report provides ample support for this duty.²¹⁶ According to an IFC report, a lot can be achieved without too much inconvenience.²¹⁷

It is close to impossible to give a definition of "relevant". The question of what is meant by "relevant" has to be determined in light of all circumstances, such as those enumerated in Principle 16 and the relationship between the additional expense and the total amount that has to be spent. An additional investment of, say, US\$ 1 million will usually not be relevant in relation to a project which requires a total expenditure of US\$ 1 billion; the (future) benefits of GHG reduction also play an important role to determine whether costs are relevant. In brief, one has to balance various factors. In view of the urgency to come to grips with climate change, one should be cautious to attach a meaning to "relevant" that would serve as an easy excuse to refrain from taking measures to reduce emissions.

The second sentence may be more controversial. Yet, the steps advocated seem quite reasonable, given that they are only about "excessive" power consumption "where possible".²¹⁸ No doubt, opinions will greatly diverge as to the meaning of "excessive". People used to powerful air-conditioning in luxury hotel rooms may believe that it is ridiculous to open a window and switch off the air-conditioning; others may believe that it is "convenient" to heat rooms or offices up to, say, 24 degrees Celsius. We realise that our submissions require a paradigm shift. However, we suggest that "relevant" should be defined narrowly and that the law should reject most of these arguments on the basis that they concern luxuries and not significant needs. The concept of equity²¹⁹ and the principle of sustainable development point to a much more egalitarian *GHG-emitting* world, in which it is no longer possible for those in

²¹⁶ See, for opportunities, also UNEP, 2010, Montreal Protocol on Substances that Deplete the Ozone Layer, Report of the Refrigeration, Air Conditioning and Heat Pumps, Technical Options Committee, 2010 Assessment, in particular pp. 22ff.

²¹⁷ See Environmental, Health and Safety General Guidelines, p. 18ff; see also Pathways to deep decarbonization, o.c. p. xiv.

²¹⁸ See, for a similar view, A new global partnership, o.c. p. 8.

²¹⁹ See art. 3 and 4 ILA-draft and the report by the Lowenstein Clinic, in particular supra 1) iv, 2) ii.

“developed” countries to argue that they are entitled to luxuries that harm the environment. It therefore might be necessary for states to enact legislation that ensures low-carbon lifestyles.²²⁰

The duty to take measures which do not require additional cost can be extended easily to underlie a duty to abandon broad fossil fuel subsidies. It would produce a dual benefit for states: they would save money that would otherwise go to subsidies and at the same time effectively stimulate (or remove obstacles for) renewable energy. This leaves untouched that there might be instances where fossil fuel subsidies are justified, in particular to poor people, homes for the elderly or hospitals for the poor that otherwise would be doomed to disappear.

Principle 8

This principle is about “excessive emissions”. The question whether emissions are “excessive” has to be answered by comparing available alternatives within reach.

Activities which emit excessive GHGs perhaps may be acceptable when countervailing measures are taken to offset the “excess.” Yet, new activities that produce excessive GHG emissions may have to be endured in the case of least developed nations, e.g., in case of a least developed country with abundant coal reserves that would otherwise have to make use of more expensive cleaner alternatives. The desirability to use the limited available funds to lift populations from poverty will justify exceptions in these situations.²²¹ Still, least developed countries will be required to opt for cleaner technologies if developed countries or other entities,

²²⁰ Recent developments in China may serve as an example; see, for details, http://www.china.org.cn/government/whitepaper/2013-11/10/content_30555331.htm; see also Chris Goodall, *how to live a low-carbon life*, 2nd ed. So, in the hotel example, States might have to require hotels to set air-conditioning to a maximum of 24 degrees and to a maximum heating of 19 degrees Celsius, which can be overridden only for guests with certified medical conditions that require greater cooling/heating.

²²¹ See, f.i., Burns H. Weston and Tracy Bach, *Recalibrating the Law of Humans with the Law of Nature: Climate Change, Human Rights, and Intergenerational Justice*, www.vermontlaw.edu/...Law.../Publications-x4049.htm.

such as development banks, provide the technical or additional financial means to the extent that resources will still be available for poverty alleviation; see the last sentence of this principle.²²²

We don't close our eyes to an emerging trend of aid switching: what used to be aid for poverty alleviation now becomes aid for reducing GHG emissions. In this scenario, the least developed nation has incurred further obligations without receiving any *real* benefits. This is a difficult and delicate matter. One could argue it both ways: switching should not qualify as a reduction for the above-average nations that provide assistance to reduce GHG emission, or, alternatively, that countries are not legally entitled to reduce aid for poverty in exchange for support to reduce GHG emissions which would mean that "aid switching" is allowed. We do not express a pertinent view in this debate.²²³

Principle 9

The rationale and legal basis for this principle are similar to those expressed in relation to Principle 7. This principle may imply that money has to be borrowed to achieve reduction. As a general rule, this can reasonably be expected as long as the cost will be offset by the benefits, e.g., by lower energy consumption.

Not every enterprise or even nation state may be able to borrow money, let alone at "affordable" rates. If this is so, higher interest rates may mean that the benefits will no longer make up for the cost.

A similar duty cannot be imposed on vulnerable least developed nations. As previously mentioned, the high cost of borrowing for these nations often will mean that they cannot be offset by benefits. Moreover, the futures of these nations are frequently too unpredictable for these types of calculations to be made effectively. It is therefore proposed that they should be excluded from the duty. Naturally it would be in the general interest of all nations if even the least developed states were to take

²²² Principle 9 of the Rio Declaration provides some basis for this submission. See also – inter alia – Decision -/COP.20 (Advance unedited version) supra 4 and the Annex (Elements for a draft negotiating text) supra G and H.

²²³ One of the reasons for not doing so is that it is common knowledge that a not insignificant part of "aid" does not reach the populations for whom the money is given.

these measures but then only where the up-front cost is incurred by others (developed states, development banks or other institutions).²²⁴ Least developed nations will have to realise reductions in these circumstances, even if they are required to indemnify those who have incurred the costs, once the benefits have been achieved. Exactly how this is to be done will be a matter to be negotiated between the relevant country and the institution in question.

The just-mentioned exception can also be invoked by local enterprises in the most vulnerable states. It may become very difficult to determine whether an enterprise is local or not. It is also open to argument that production for exports also may have benefits for local communities. Perhaps the basic distinction should merely be between local enterprises and the local branches of foreign enterprises or enterprises that produce goods only or substantially for others that have outsourced. That, we think, is reconcilable with Principle 23. The latter comes into play only in relation to obligations. If an enterprise could invoke the “defence” mentioned in the last sentence of Principle 9, it is only under an obligation to take specific steps if the up-front costs are incurred by others.²²⁵

Principle 10

As a general rule, it is the result that counts. If a State or an enterprise is able to meet its reduction obligations by lawful means, the path that it takes to arrive there does not matter. However, this is subject to a few provisos. First, the ambit of the obligations set out in Principles 7, 8 and 9 will remain the same whatever method for complying with them is chosen. Secondly, Principle 18 determines when above permissible quantum countries can meet their reduction obligations by providing support to others.

²²⁴ See, for a comparable approach, the ILA draft Commentary to art. 5 supra 11 and Sands/Peel, o.c. p. 278ff. and 685/6.

²²⁵ By way of example: art. 10:401 of the Principles of European Tort Law provides a rule about reduction of damages for exceptional cases if, in light of the financial situation of the parties, full compensation would be an oppressive burden. This provision, in line with the law in several European countries, naturally only plays a role *if* liability has been established; see, in more detail, Text and Commentary (Moréteau) p. 179ff.

In its judgement in *Brincaat and others v. Malta*, quoted above, the ECHR emphasises the margin of appreciation enjoyed by States in determining the measures they must take in order to comply with obligations.²²⁶

The reductions needed can be achieved by various means; it would be sensible to allow for a “mix” of solutions.²²⁷

Principle 11

With the exception of a handful of countries (China, the U.S., the Russian Federation and India), no single country emits more GHGs than approximately 5% of the global emissions. No single enterprise exceeds 0,5%.²²⁸

Most enterprises contribute less than 0,1% per enterprise. This creates difficulties when a causal link between emitters and harm caused by climate change is to be established in claims for damages.²²⁹ Thankfully, these intractable problems can be left aside for our purpose.²³⁰ But minimal causation may also rear its head where the question is merely whether a State or enterprise has a duty to take steps to reduce emissions (in brief, a wrongfulness issue).

This principle is cautiously drafted. It aims to remove the minimal “causation” defence (for instance, in case of litigation for injunctive relief). To stick to the basics, the question is whether a (very) minor contribution to an emerging global loss can be labelled as “wrongful” or unlawful. To the best of our knowledge, there is hardly any

²²⁶ Para 101.

²²⁷ See, in more detail, Michael Gerrard, in Gerrard and Freeman, o.c. p. 19 and 20; Kinniburgh’s paper; EU directive 2012/27/EU and Bharat Desai, *Greenhouse Gas Mitigation, Environmental Policy and Law*, 43/4-5 (2013) p. 238 ff.

²²⁸ That view is challenged by Richard Heede, *Climate Change* (2014) p. 229ff. In his submission, 63% of the GHG emissions between 1854 and 2010 can be attributed to 90 “entities”: 56 crude oil and gas producers, 37 coal extractors and 7 cement producers. If we understand correctly, he attributes emissions by subsequent users to the former “entities.”

²²⁹ To avoid any misunderstanding: we do explicitly *not* suggest that any country would have to reduce its emissions in relation to its contribution to the global emissions in a given year. The argument developed here is about a different topic, i.e., is a minor contribution a defense or can it suffice to constitute “wrongfulness”?

²³⁰ Causation plays a role in relation to, f.i., claims for damages. That issue is not addressed by our principles. It is far less an issue in relation to, e.g., injunctive relieve; see, for further elaboration, *Climate change remedies*, o.c. par. 1.3.

doctrine or explicit case law on this point.²³¹ That is not surprising. The issue rarely arises in typical tort law litigation. However, we do not think that minimal contributions should be an insurmountable obstacle to the conclusion that conduct is unlawful. Firstly, it would seem that even small gross contributions to global emissions cannot be regarded as minimal. We contend that a country which contributes more than, say, 0,5% of global emissions makes a significant contribution to global emissions. Moreover, duties should be imposed on countries even where they make only minimal contributions to global emissions, such as, say, less than 0,1%. If not, it would trivialise law as a regulatory tool.²³² It would only be of relevance in cases that, by comparison, concern insignificant issues.²³³ It would imply that only a handful of countries and at best a couple of enterprises would have to carry the burden of reducing GHG emissions. It could also mean that secession from an existing country – by no means a theoretical example these days – might entail considerable benefits; the new and smaller country might no longer have reduction obligations, because the contribution to the global emissions would be minimal.

In tort law, the materialisation of a very remote risk often suffices for establishing liability if the loss that could flow from it would be significant. Courts around the globe have been willing to hold defendants accountable for all kinds of events despite the minimal and, at times, extremely remote likelihood that losses would occur. The potential losses that may be related to climate change are of a different magnitude than those that are incurred in “typical” tort cases. It would be very unsatisfactory to apply a lower standard even while the stakes are higher. We submit that the spirit with which

²³¹ The IBA asks the question whether the same or different standards should apply in case of preventive and ex post remedies. It seems to believe that the issue here is (primarily) causation; o.c. p. 130.

²³² That is arguably not entirely true. Minimal contributions may not serve as an obstacle for the enforcement of obligations on the basis of human rights and international law, despite the fact that the latter two do not point to sufficiently precise and pertinent obligations.

²³³ See, for further elaboration, Spier’s contribution in *Climate change remedies*, o.c. p. 10ff and in relation to wrongfulness p. 41ff.

established legal principles are applied in other contexts should prevail also in the unique setting of climate change and in relation to marginal contributions.²³⁴

This conclusion is supported by other developments. In the course of the last decades, legislation and case law in quite a few countries have come to the aid of vulnerable people and the environment. That goes for (serious) personal injury, product liability, and liability for labour accidents and occupational diseases (such as asbestos-related illnesses) but equally for less important issues such as the use of general terms and conditions and other kinds of consumer protection²³⁵ and, in the field of the environment, all kinds of pollution and environmental degradation. This seems to point to a universal trend: the willingness to come to grips with the apparent demands of our society, particularly to protect vulnerable people and groups. It is in the spirit of this development that we do not believe that minimal contribution is an insurmountable obstacle.

Principle 12

As mentioned before, our principles are based on an amalgamation of international and national law. In this light, this principle ought to be self-explanatory. No doubt, it probably is controversial in quite a few countries, including increasingly in Europe.²³⁶

²³⁴ See, in more detail, Shaping the law for global crises and particularly Climate change remedies, o.c. with further references. We do realise the doctrinal difference between both issues mentioned in the text. The first issue mentioned in the text is about causal links where it is unlikely that harm would follow, while the issue in point is whether there is or should be a minimum contribution of a specific contributor if it is clear that the result will occur. There is a fluid line between both. It would be difficult to justify a very different approach in light of the close connection.

²³⁵ See, for examples, Marshall S. Shapo, Tort Law and Culture, p. 126 ff.

²³⁶ See, in more detail, Duncan B. Hollis, The Oxford Guide to Treaties, p. 367 ff. Dinah Shelton puts it eloquently as follows: “(...) human rights are maximum claims on society, elevating concern for the environment above a mere policy choice that may be modified or declared at will. Rights are inherent attributes of human beings that *must be* respected in any well-ordered society” (emphasis added) in Malgosia Fitzmaurice, David M. Ong and Panos Merkouris (eds.), Research Handbook on International Environmental Law p. 265. See further Michal Gondek, The Reach of Human Rights in a Globalising World: Extraterritorial Application of Human Rights Treaties. The UK is an example of increasing unease with the idea that Parliament would not be sovereign and that English judges might have to apply any

We realise, of course, that courts will have an easy escape if they would interpret the law as it stands differently. We can only hope that courts reluctant to apply rules as set forth by these principles²³⁷ will be prepared to be inspired by other courts willing to take a more progressive stance. Judges willing to apply our principles or similar rules, even if their own legal system sets lower standards, should feel encouraged by the predominant view, including among leading politicians, that it is high noon and that *much more* must be done to avoid that we pass the fatal threshold. These and similar messages, quite often in the format of solemn pledges, cannot be interpreted in another way than that the present standards or practice fall short. In such a scenario, it would be unsatisfactory to apply the latter clearly insufficient “standards”.

Even if international courts or tribunals are willing to step in, execution is often fraught with difficulties.²³⁸

Obligations of states

Principle 13

The legal basis for this principle was already explained above.

“Within their territory or control” is borrowed from the ILA draft.²³⁹

We realise that it will be virtually impossible to curb GHG emissions to the permissible quantum straightaway. Solutions are available, but it will take some time to install the technologies and/or take other appropriate steps to implement those solutions. Solar and wind energy are, for example, readily available but not necessarily to the extent needed to satisfy energy needs on a global scale. Even if they are

foreign law that runs contrary to English law; see, e.g. The Rt Hon. Lord Judge, Constitutional Change: Unfinished Business, University College London, 4 December 2013.

²³⁷ I.e., almost certainly, based on less stringent obligations; see, for a rather different view, Lord Neuberger, The UK Constitutional Settlement and the Role of the UK Supreme Court; this lecture can be downloaded from the website of the Supreme Court (of the UK).

²³⁸ See, f.i., Gerhard Loibl, in Malgosia Fitzmaurice, David M. Ong and Panos Merkouris (eds.), Research Handbook on International Environmental Law p. 437ff. See also Climate change remedies, o.c. p. 77ff.

²³⁹ Art. 7A para 1.

available to the extent needed, it will take some time to install the technologies needed to meet these needs. For this reason, the duty is qualified: reductions must be attained “within the shortest time feasible”. However, this is intended to be a strict test. It does not allow for the consideration of affordability or hardship.

If and to the extent that a country with GHG emissions above the permissible quantum cannot curb its GHG emissions to the permissible level in a given year, it must take offsetting measures as mentioned in Principle 5 and/or provide technical and/or financial means as mentioned in Principle 18.

Principle 14

According to article 5 of the ILA draft, states have common but differentiated responsibilities.²⁴⁰ ILA also points to their “respective capabilities” (para 1). This means, inter alia, that “the most advanced” states shall take the lead “in addressing climate change by adopting more stringent mitigation commitments and in assisting developing States, in particular the least developed among them, (...) in addressing climate change”. Developing states, in particular the least developed among them, “shall be subject to less stringent mitigation commitments” (para 3). The Commentary gives a detailed description of the background to this important principle, embedded in art. 3 FCCC. It is labelled “an overarching principle”, “routinely referred to in FCCC COP decisions and Ministerial Declarations”.²⁴¹ The ILA observes that there exists “less common ground (...) on the relevant criteria for differentiation.”²⁴² The ILA recognises – and clearly accepts – that “to the extent that per capita emissions in developing countries are still low, these will grow, within reason and in a sustainable manner, to meet their social and development needs”.²⁴³

²⁴⁰ See, recently, also the Ministerial Declaration of the Ministers of Foreign Affairs of the Group of 77 and China of 26 September 2014 supra 14, 15, 24, 52 and 55 and Sands/Peel, o.c. p. 230ff. This concept is mentioned in almost all versions of “Elements for a draft negotiating text”, an Annex to Decision -/COP.20 (Advance unedited version).

²⁴¹ Commentary supra 1. Yet, “developed” countries apparently get worried; they increasingly stress that the future system should be applicable to all; see ILA Commentary to art. 5 supra 14.

²⁴² Commentary supra 6.

²⁴³ Art. 4 para 2 (a), with an explanation in the Commentary supra 4.

We second the views mentioned above,²⁴⁴ but we have tried to be a little bit more explicit and specific in Principle 15. We observe, in the meanwhile, that ILA's proposition clearly is geared towards *sustainable* growth.

We also refer to the observations made in the report by the Lowenstein Clinic, *supra* the Principle of Equity.²⁴⁵ One of the features of common but differentiated responsibilities is that countries with relatively low historical contributions to the present level of GHG in the atmosphere should not be required to bear the same burden for addressing the problems as the major contributors to the current state.²⁴⁶ As already explained above in § 3.2, we believe that our per capita approach by and large encapsulates the common but differentiated responsibilities concept, although there is also a need that its obligations should be further limited for the least developed countries.

Principle 15

This principle follows from the concept of common but differentiated responsibilities. Obligations that are imposed on the shoulders of the least developed countries would jeopardise the eradication of poverty in these countries. That would be an unacceptable result. These countries have only two obligations: to bring about reductions that can be achieved at no cost (Principle 7) and to align with Principles 8 and 9.

Principle 16

This principle is inspired by the concept of common but differentiated responsibilities (Principle 14). But it is only triggered if:

²⁴⁴ See also: art. 4 UNFCCC and art. 10 Kyoto Protocol.

²⁴⁵ Principle iv. See also Tuula Honkonen, *The Common but Differentiated Responsibility Principle in Multilateral Environmental Agreements*, Peter Michael Lawrence, *Justice for Future Generations: Climate Change and International Law*, thesis Tilburg 2013 p. 59ff.; *Shaping the law for global crises*, o.c. p. 110ff., Brian J. Preston, *The effectiveness of the law in providing access to environmental justice: an introduction and World Trade Organization, Special and Differential Treatment for Least-Developed Countries*, WT/COMTD/W/135.

²⁴⁶ See also, for further references, in *Climate change remedies*, o.c. p. 43ff.

- a) the GHG emissions of the relevant country closely approximate the permissible quantum;
- b) reducing its GHG emissions to the permissible level would cause *undue hardship to the country*.

As explained above, the common but differentiated responsibilities maxim has already been discounted in the application of the “per capita-approach”. However, this approach cannot do all the work of achieving equity. A fully fledged duty to reduce emissions as set out in Principle 13 may amount to inordinate hardship for least developed countries. Relatively high levels of GHG emissions per capita *may*, for example, be “unavoidable” where countries with relatively poor populations have easy access to carbon fuels such as oil or coal and suffer from extreme weather conditions such as severe winters, extreme summers or low levels of sunshine. An example of a country that could be covered by this proviso might be Uzbekistan.²⁴⁷

Undue hardship points to rather exceptional circumstances. Generally, it cannot be invoked by referring to circumstances that apply to more than a very few countries.

Principle 23 provides an additional escape if certain exceptional circumstances were to prevail. The latter principle comes into play if a country does *not* meet its obligations to reduce its GHG emissions. If obligations are ameliorated on the basis of this Principle 16, Principle 23 will not be applicable.

Principle 17

There may be various reasons why the permissible quantum may change over time, the most important being that climate change science progresses and that states are unlikely to reduce emissions to permissible levels. So far, climate change experts have painted an ever grimmer picture. The same may well happen in the near future. It

²⁴⁷ Its GHG emissions per capita are relatively high while the GDP per capita is low (approximately US\$ 2000).

follows that countries close to, but still below, the permissible quantum may, in the future, find that their emissions exceed permissible levels (meaning that they have become above permissible quantum countries). Hence, their interests and those of society at large would be best served if these countries would anticipate such a scenario, by not increasing their GHG emissions, unless doing so would cause undue hardship. Once again, the answer to the question whether or not hardship will be “undue” depends on a series of relevant factors; the most important probably are those elaborated in Principle 16.²⁴⁸

Principle 18

Not every state may be able to meet its reduction obligations mentioned in Principle 13 straightaway. That goes, in particular, for countries with very high per capita emissions, such as the United States, the United Arab Emirates, Canada, Luxemburg and Australia.²⁴⁹ The reductions that have to be brought about in these – and quite a few other countries – are not insignificant. Despite the availability of technical solutions and the opportunities to save GHG emissions by increasing efficiency, it may be (close to) impossible to effectuate the reductions required in the short term. This is not to say that they should not try hard; they must. This principle kicks in if – and only if – countries have taken “all steps reasonably available”.

We realise that the phrase “all steps reasonably available” is open-ended. It follows from Principle 23 that, as a general rule, lack of financial means is not a justification to refrain from reducing GHG emissions to the extent required. On the other hand, it would be unrealistic and also unfair to expect that countries should ruin their economies if that would be the only way to arrive immediately at the required reductions. This phrase is used in an attempt to strike a balance. Given the major interests at stake, countries are under an obligation to curb their GHG emissions to the permissible level even if it requires considerable sacrifice. It would be very much

²⁴⁸ For the meaning of “undue hardship,” we refer to the commentary on Principle 16.

²⁴⁹ Figures without land use. The picture changes significantly if land use is taken into account. In the latter case, countries such as Belize, Papua New Guinea, Zambia and Malaysia rank high.

contrary to their self-interest and that of the entire globe to postpone reductions unnecessarily. In the latter scenario, the economic toll will be disproportionately higher, although not in the very short term.

The solution advocated in the first sentence entails some significant practical challenges. The cost of reducing GHG emissions in below permissible quantum countries may diverge significantly. This may stimulate a race to countries with the lowest reduction cost to offset the consequences of a shortcoming to fulfil one's own obligations.²⁵⁰ We do not have a legal solution for this problem. This is one of those areas where a dire need for international agreements exists. But perhaps countries should be expected to act in good faith in assisting others to reduce their emissions.

It may be difficult to calculate or determine the reductions brought about by technical or financial means provided to a "receiving country." However, there probably are practical steps that can be taken to avoid abuse. That, however, is a matter that goes beyond our expertise.

Some BPQ countries may be tempted to request additional benefits beyond the technical or financial means needed for *reduction* purposes. Such a stance might be understandable in light of the desperation felt by vulnerable countries. It is hoped that most countries will realise that their citizens will benefit greatly from reductions and that good faith compliance will be so widespread that it will be possible to shun those who abuse this principle.²⁵¹

²⁵⁰ Similar difficulties have arisen in relation to the Clean Development Mechanism of the Kyoto Protocol. We acknowledge that there will be many practical obstacles to the implementation of this principle. However, we believe that it is necessary to recognise this form of indirect compliance in order to balance the legitimate economic interests of nations with the essential need to meet reduction targets.

²⁵¹ We reiterate that our principles are about mitigation. We do not express a view on adaptation. By the same token, we do not address the question whether or not (a specific group of) countries should contribute to the adaptation cost to be incurred by other countries.

Countries providing means to other countries to make up for their failures to comply with reduction obligations have to rely on “receiving countries”. But the “offsetting countries” must take all reasonable steps to ensure that their assistance will be used to achieve the purpose for which it was given.

Principle 19

Even if all countries were to comply with their reduction obligations emanating from the previous principles, a not overly likely compliance scenario, there is a – hopefully remote – chance that the reduction prescribed by Principle 6 cannot be achieved. The reason for this gap lies in the flexibility emanating from Principles 16 and 23, especially if interpreted in a more lenient way than advocated by us.²⁵² This principle 19 arguably deals with a rather theoretical issue in light of Principle 3; we can only hope that it is completely redundant. After all, the global reduction obligations have to be recalculated every year. So, for practical purposes, this principle focuses on additional reductions needed in a specific year.

This principle is not intended to address failures by countries to comply with their reduction obligations. We do not think that the remaining countries are under a *legal obligation* to fill gaps caused by non-compliance of others. Such an obligation would also serve as a perverse incentive for irresponsible behaviour. Moreover, it is at least open to debate whether the remaining countries would be *able* to reduce their GHG emissions to the extent needed to “offset” the shortcoming of other major countries.²⁵³ It goes without saying that it might well be in the very best interest of all countries if the complying countries would be willing to step in to the extent possible in case of non-compliance of other states. However, Principle 19 does *not* deal with this issue. After all, the required reductions *can be* achieved by the “defaulting state”, but the

²⁵² The consequences of the flexibility rules may be made good by Principles 7 and 9.

²⁵³ That depends on the countries in point, of course. It is not difficult to predict which countries might fall into this category. See, about this issue, *Shaping the law for global crises*, o.c. p. 138ff.

goal mentioned in Principle 13 is not reached exactly because of the default of (a few) countries.

As to 19 supra a.

The additional reductions have to be implemented by above permissible quantum and specific developed countries. APQ countries should take the lead, as all of them are “developed” countries.²⁵⁴ Seen from that angle, it seems only fair that they have to assume the burden of additional reductions to the extent reasonably possible. This also follows from Principle 14. The latter obligation also implies that the heaviest burden must fall on the shoulders of the rich countries.

As to 19 supra b.

The APQ countries may not be able to realise additional reductions to the extent needed, although that seems a rather hypothetical scenario. In such a scenario, the remaining countries have to step in, albeit not at their own expense. Only if the below permissible quantum country is a “developed country” must it bear the cost of additional measures itself.²⁵⁵

Principle 20

Regrettably, not every country will comply with its reduction obligations. This has major adverse consequences for the world at large, unless the GHG emissions of the defaulters are negligible. This raises the question whether countries can be forced or coaxed into complying with their obligations. As a matter of fact, it will be difficult to sue defaulters before international tribunals, and even if this were possible, enforceability of the judgments of these tribunals will be fraught with difficulty. Hence, this extremely serious issue will have to be solved in the political arena. As

²⁵⁴ This holds also true for developed countries with relatively modest GHG emissions due to the use of, e.g., nuclear energy.

²⁵⁵ See previous footnote.

long as international politics does not come up with proper solutions, there are only two practical avenues for coming to terms with this enormous challenge.²⁵⁶

a) obligations of enterprises. Even if they are not enforceable in “defaulting” countries, litigation geared at injunctive relief to curb their GHG emissions might stand a better chance in countries where these enterprises have subsidiaries and/or assets. Besides, shareholders could put pressure on the enterprises in point;

b) the obligation mentioned in this Principle 20.

This principle aims to provide for a kind of enforcement mechanism. The idea is borrowed from art. 4.4 bis Montreal Protocol on Substances that Deplete the Ozone Layer, but it has been adapted not insignificantly.

We realise that this obligation may cause tensions in relation to, f.i., WTO-law.²⁵⁷ That is an important and huge topic in its own right. It certainly needs attention, but that goes beyond the scope of our project.

Principle 21

With the exception of the last sentence, the basic idea behind this principle is borrowed from art. 4.6 of the Montreal Protocol.²⁵⁸ It may serve as an effective obstacle to the erection of facilities that emit inordinate amounts of GHGs. Art. 4.6 of the Montreal Protocol focuses on exports to “non parties.” We have considerably widened this concept. Nevertheless, we have used similar wording; instead of “each party,” we speak of countries, although we realise that most states do not provide

²⁵⁶ But it will, at best, solve part of the problem.

²⁵⁷ See Eric Neumayer, Trade measures in multilateral environmental agreements and WTO rules: Potential for conflict, scope for reconciliation, *Aussenwirtschaft*, 55 (3), 2000 pp. 1-24; see, about the relationship between trade and climate change, also, Ludvine Tamiotti, Robert Teh, Vesile Kulaçoglu, Anne Olhoff, Benjamin Simmons and Hussein Abaza, Trade and Climate Change, a WTO-UNEP Report 2009.

²⁵⁸ See also Kinniburgh’s report p. 52ff, and on energy subsidies, the International Monetary Fund, Energy Subsidy Reform: Lessons and Implications, January 28, 2013. The IMF observes that, on average, energy subsidies are very much to the benefit of the richest 20% of households (p. 19).

credits, guarantees or insurance (they may serve as re-insurer in specific instances or provide guarantees); they may well provide subsidies or aid.

Countries should arguably be motivated (or could even be legally bound) to enact legislation to the effect that banks and insurers within their jurisdiction are not allowed to provide these financial means, although it is open to debate whether that would be necessary. After all, this principle focuses on activities in violation of Principle 8. In quite a few countries, banks and insurers would commit a tort by enabling, inducing or instigating such activities.²⁵⁹

This principle is in line with the emerging view that countries are under an obligation to ensure that enterprises over which they have jurisdiction comply with human rights.²⁶⁰ As already discussed in § 4.2 and 4.3, climate change is a human rights issue. So it seems to follow that there is a sufficiently sound basis for this obligation.

The second sentence provides an escape for least developed countries; this is in line with Principle 14.

Principle 22

This principle seems self-explanatory. Research would be particularly attractive as it could, in the future, mitigate the impact of the compliance failure by making compliance easier or cheaper.²⁶¹

Principle 23

This principle may, *prima facie*, seem harsh. Indeed, it implies that lack of financial means can only serve as a justification to default upon their reduction duties in exceptional circumstances. However, the principle is deliberately strict for the following reasons:

²⁵⁹ See, *inter alia*, art. 2:211 PEL Liab. Dam.; and – in relation to interference with contracts (a rather similar issue), Dobbs, *o.c.* par. 447.

²⁶⁰ See, e.g., the Ruggie Principles, in particular IA 1 and 2.

²⁶¹ See, more generally, IDDRI, *pathways to deep carbonization* p. xvff.

- a) the urgent need to avoid a major catastrophe. This goal can only be achieved if all countries take their obligations seriously and cannot escape but on exceptional grounds;
- b) the wide range of excuses that countries will otherwise raise, such as financial crises, local turmoil, long lasting strikes, or severe budget cuts to repay the national debt accrued in times of overspending.²⁶² We are not oblivious of the dire consequences that these events sometimes have. But the price if they were allowed to serve as excuses for not reducing emissions would be even higher.

It should also be considered that the principles contain various other more specific provisos that ameliorate the strict duties to reduce emissions. The obligations of BPQ countries are very limited, and those that are just above the threshold are moderate; see further Principles 7, 8, 9, 16, 17, 18, 21 and 23. So, for practical purposes, this Principle will predominantly be addressed to wealthier nations. All the more reason for a very strict interpretation.

Moreover and importantly, this principle is in line with the prevailing view in the realm of tort law; see, for elaboration, above § 4.4.

The exemption provided here therefore would apply only in circumstances such as a *major* natural catastrophe that lays *major parts* of a country to ruin, or a war which causes widespread devastation.²⁶³ Whether or not such a scenario may qualify as a temporal justification may depend, inter alia, on the carbon footprint of the new buildings and factories to be erected.

“Sanctions” will depend on the relevant judicial forum or tribunal which issues them. We reiterate that our principles are focused on prevention, so we aim at sanctions, such as injunctive relief or declaratory judgments, that promote emissions reductions or other means of complying with our principles. As already mentioned, our principles do not address compensation or damages.

²⁶² See, about these issues from a more general perspective, Council of Europe, Safeguarding human rights in times of economic crises.

²⁶³ Ironically, the GHG emissions of the relevant country may decrease.

Principle 24

A similar provision can be found in Principle 11 of the Rio Declaration: States should enact effective environmental legislation.²⁶⁴ The ECHR judgement in *Brincat et al. v. Malta*, quoted above, also justifies this principle:

“(…) In the particular context of dangerous activities, special emphasis must be placed on regulations geared to the special features of the activity in question, particularly with regard to the level of the potential risk to human lives. They must govern the licensing, setting up, operation, security and supervision of the activity and must make it compulsory for all those concerned to take practical measures to ensure the effective protection of citizens whose lives might be endangered by the inherent risks (see Önerıldız, cited above, §§ 71 and 90).”²⁶⁵

Art. 2 ICESCR also imposes a duty on parties to “take steps, individually and through international assistance and co-operation (...) with a view to achieving progressively the full realization of the rights recognized in the present Covenant by all appropriate means, including particularly the adoption of legislative measures.”²⁶⁶

The Ruggie Principles also determine that states must enact legislation to ensure that enterprises will not impinge on human rights.²⁶⁷ States should similarly be obliged to enact and enforce legislation that ensures the reduction of GHG emissions to desired levels.

Procedural issues

Principle 25

This principle, in particular the first paragraph and supra a, is barely a revelation. Access to courts is one of the cornerstones of a series of international treaties and

²⁶⁴ See, in relation to the right to information, art. 3 para 1 and 5 para 5, Aarhus Convention on Access to Information, public participation in decision-making and access to justice in environmental matters and Mapping report, A/HRC/25/53 o.c. supra 43 ff. See, for a similar view, IBA report, o.c. p. 133 referring to the independent UN expert John Knox.

²⁶⁵ See also the ECHR judgement *Koyadenko and Others v. Russia*.

²⁶⁶ See the report by the Lowenstein Clinic, supra principle of Equity.

²⁶⁷ See Guiding Principles on Business and Human Rights supra I.A.1 and I.B.3 (c).

conventions, among them human rights instruments.²⁶⁸ It is also found in art. 11 of the ALI/Unidroit Principles of Transnational Civil Procedures and in many constitutions. At least on paper, few countries will contest that proceedings must be fair and be adjudicated by independent courts or tribunals; reality may be different in many instances. This holds even more strongly for effective adjudication; a plethora of cases of the ECHR about violation of art. 6 of the European Convention attest to this.

States probably adhere to diverging views on “independence.”²⁶⁹ It goes beyond the scope of our project to dwell upon the meaning of “independent”. The same goes for the important question about “standing” (which parties can submit cases to courts or tribunals). As a matter of fact, opinions diverge on that point. Several human rights courts are reluctant to admit non-governmental organisations, and class actions may well be dealt with differently around the globe. It is open to debate whether litigation could be started on behalf of future generations and, if that would be the case, who could do so.

²⁶⁸ See, e.g., Dinah Shelton, *Remedies in International Human Rights Law*, 2nd ed.; Eva Rieter, *Preventing Irreparable Harm, Provisional Measures in International Human Rights Adjudication*; Jona Razzaque, in Malgosia Fitzmaurice, David M. Ong and Panos Merkouris (eds.), *Research Handbook on International Environmental Law* p. 161ff; *Shaping the Law for Global Crises*, o.c. p. 284ff. See, f.i., Principle 10 Rio Declaration; See, for a wealth of international instruments, Edith Brown Weiss, Daniel Barstow Magraw and Paul C. Szaz, *Basic Instruments and References 1992-1999* and Heyns and Killander (eds.), *Compendium of key human rights documents of the African Union*, 4th ed. 2010. See, among many other provisions, art. 8 American Convention on Human Rights; art. 6 European Convention on Human Rights; art. 7 Charter on Human and People’s Rights; art. 6 and 7 North American Agreement on Environmental Cooperation; ILC Resolution on responsibility and liability under international law for environmental damages art. 14 and 26, and art. 1 of the Aarhus Convention on Access to Information, public participation in decision-making and access to justice in environmental matters. See also John Ruggie’s *Guiding Principles on Business and Human Rights*, supra III and *Putting Rio Principle 10 into action*, Second draft (August 2014), *An Implementation for the UNEP Bali Guidelines for the Development of National Legislation on Access to Information, Public Participation and Access to Justice in Environmental Matters*.

²⁶⁹ ALI/Unidroit Principles of Civil Procedure require “judicial independence” (1.1), but the Commentary is not overly helpful: “Independence can be considered a more objective characteristic”, o.c. P-1A.

A further difficulty of submitting cases to courts may be that judges may be reluctant to issue judgments that favour plaintiffs in this field. Judges who act to prevent climate change may be decried as activists. In our view, this would be unjustified. Climate change presents an unprecedented challenge to the law. There are well-established legal concepts that can be applied or adopted to ensure that the law will meet the greatest challenge of our time; see § 4 before.

As to b.

The obligation mentioned supra b. may, at first glance, appear to be peculiar in some jurisdictions. Many legal systems recognise the right against self-incrimination. But it is unlikely that states will be subjected to criminal prosecution where they contravene duties to reduce emissions. Moreover, there probably is an emerging trend that parties must present in reasonable detail the relevant facts and describe with sufficient specification the available evidence to be offered in support of their allegations.²⁷⁰ Generally, the court and each party should have access to relevant and non-privileged evidence and documents, especially in situations where there is informational asymmetry between parties to litigation.²⁷¹ See further below supra Obligation 26.

Principle 26

International law, too, provides a sound basis for the obligations set out herein.²⁷² The Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters probably is the most apparent source. If we ignore the rather vague preamble, quite a few provisions are quite clear. According to art. 1, each party shall guarantee the right of access to information.²⁷³ Art. 3 para 2 requires parties to “endeavour to ensure that officials and authorities

²⁷⁰ Art. 11.3 ALI/Unidroit Principles of Transnational Civil Procedure.

²⁷¹ As previous footnote, art. 16.1.

²⁷² Bruno Simma, Daniel-Erasmus Khan, Georg Nolte and Andreas Paulus (eds.), *The Charter of the United Nations, A Commentary*, Volume II 2012 p. 1553; Philippe Sands and Jacqueline Peel, *Principles of International Environmental Law* 3rd ed. (2012) p. 624ff.

²⁷³ See also Mapping report, o.c. A/HRC/25/53 supra 29ff. and Rio Principle 10 and for many further references (case law, national legislations and national initiatives) Putting Rio Principle 10 into action, Second draft, o.c.

assist and provide guidance to the public in seeking access to information, in (...) seeking access to justice in environmental matters.” Furthermore, parties shall “promote” “environmental education and environmental awareness among the public, especially on how to obtain access to information (...) to obtain access to justice in environmental justice” (art. 3 para 3).²⁷⁴

In *Barkas et al. v. Malta*, the ECHR stressed the public’s right to information.

Moreover and even more importantly, it held that

“The relevant regulations must also provide for appropriate procedures, taking into account the technical aspects of the activity in question, for identifying shortcomings in the processes concerned and any errors committed by those responsible at different levels (see *Öneryıldız*, cited above, §§ 89-90, and *Budayeva and Others*, cited above, § 132).”²⁷⁵

Further down, the Court confirmed that it

“(…) has affirmed a positive obligation of States, in relation to Article 8, to provide access to essential information enabling individuals to assess risks to their health and lives (see, by implication, *Guerra and Others*, cited above, §§ 57-60; *López Ostra*, cited above, § 55; *McGinley and Egan*, cited above, §§ 98-104; and *Roche*, cited above, §§ 157-69). In the Court’s view, this obligation may in certain circumstances also encompass a duty to provide such information (see, by implication, *Guerra and Others*, cited above, §§ 57-60; and *Vilnes and Others*, cited above § 235).”²⁷⁶

According to art. 6 (a) i UNFCCC, the parties shall promote and facilitate development and implementation of education and public awareness programmes on climate change and its effects. Art. 6 (a) ii protects public access to information.

Obligations of enterprises

²⁷⁴ See art. 5 para 1 and art. 5 para 7 (b). See, in more detail, Razzaque, o.c. p. 285ff. According to art. 5 para 2 supra a ILA draft, States shall “take policies and measures to address climate change and its adverse effects, and report periodically on these.” See also Chapter VI Environment of the OECD Guidelines for Multinational Enterprises, 2011 Edition.

²⁷⁵ Para 101. See also *Serac and CESR v. Nigeria*, African Commission; *Claude Reyes et al. v. Chile*, Inter-American Court.

²⁷⁶ Para 102.

Introduction: diverging views

Next to the obligations mentioned in Principles 7, 8 and 9, we have explored two submissions to concretise the reduction obligations of enterprises. In our meeting in Oslo, the following drafts were discussed:

I.²⁷⁷

“3.1.1 Without prejudice to Principles²⁷⁸ 3.4, 3.5 and 3.6,²⁷⁹ enterprises (whether or not state owned and whether manufacturers or engaged in the service industry) must curb their GHG-emissions in accordance with Principles 3.1 - 3.3,²⁸⁰ i.e. the percentage of reductions globally required in a specific year to arrive at the permissible quantum.

3.1.2 There may be grounds for further reductions where the relevant enterprise is responsible for GHG-effects relevantly and negatively greater than those of comparable enterprises, or where that can reasonably be demanded in view of the (broader) possibilities available to the relevant enterprise and in view of the burdens involved in achieving the further reduction.

3.1.3 There may be ground for a lower level of reductions if an enterprise can demonstrate that its GHG-emissions are already relevantly lower than those of comparable enterprises and if and to the extent that further reductions in line with Principle 3.1 – 3.3²⁸¹ would cause a serious hardship for the enterprise.

3.2 Enterprises in below permissible quantum-countries have differentiated responsibilities, compared with enterprises in above permissible quantum countries,²⁸² unless:

a. the former belong to a group of enterprises with its seat in an above average-country;

²⁷⁷ At that stage, we had not yet relinquished the distinction above/below average countries, counted on a per capita basis; see above § 3.2.

²⁷⁸ Reference is made to the final numbers.

²⁷⁹ In the final version, Obligations 7 – 9.

²⁸⁰ In the final version, Obligations 6 and 7.

²⁸¹ See previous footnote.

²⁸² As mentioned before, we have relinquished the distinction above/below average. Observations in relation to this distinction will not be mentioned.

b. the major part of either the turn-over, the profit or manufacturing activities of a group of enterprises with a seat in a “below permissible quantum country” stems from activities in “above average-countries”;

[c. the enterprise predominantly manufactures goods or delivers services for the benefit of “above average-” countries;

d. the enterprise is predominantly engaged in manufacturing or providing luxury goods or services].

3.3 Parent companies must secure that their subsidiaries and affiliated enterprises meet their obligations to curb their GHG-emissions to the extent legally required. This does not affect the obligations of the subsidiaries, affiliated enterprises, contractors and sub-contractors.²⁸³

3.4 Enterprises must research further reduction possibilities and disclose their efforts to reduce their GHG-emissions.

[3.5 If an enterprise has outsourced a major part of its activities, the GHG-emissions of the contractor will be considered as GHG-emissions of the outsourcing enterprise.]”

II.

Enterprises have to

“disclose their GHG footprints and use all practicable means to reduce them through increased energy efficiency and greater use of zero- and low-carbon fuel sources. This should include not only the direct emissions from the enterprises, but also the emissions from their supply chains, their subsidiaries and affiliates, and the end users of their goods and services. [Note: the International Standards Organization in May 2013 published ISO/TS Technical Specification 14067, relating to the carbon footprint of products. Much other work is underway on accounting for the GHG emissions from supply chains.”

Draft I, submitted by Jaap Spier, met the following objections:²⁸⁴

²⁸³ See OECD Guidelines for Multinational Enterprises.

²⁸⁴ Inter alios Michael Gerrard, Toon Huydecoper, and Jessica Simor expressed disagreement for one or more of the reasons mentioned in the text.

- * it is entirely up to the relevant countries to determine the reduction-obligations of enterprises within their territory;
- * the draft is based on a flat rate, and that is not a proper yardstick for enterprises, because it includes such a diverse set of organisations;
- * a flat rate does not work in view of the realities of supply chains. The two largest sources of GHG emissions in the world are transport and electricity production;
- * as a general rule, all enterprises around the globe should have the same or very similar reduction obligations;
- * 3.2 could encourage enterprises to move their seats to “developing countries”;
- * the draft mistakenly links the obligations of enterprises to the obligations of the relevant states;
- * 3.1 would drive quite a few enterprises, such as power plants, out of business, which would lead to a lack of essential services such as widespread electricity shortages.

A few members seconded this draft. They realise that the objection related to principle 3.2 has some merit. They accept that 3.2 may stimulate some enterprises to move their seat, although they tend to believe that it will not be overly complicated to eliminate this “advantage”. It may also be true that not all enterprises in below permissible quantum countries should be given greater scope to emit GHGs. Indeed, such a view would be difficult to reconcile with the emerging case law in, for instance, India and the Philippines that urges local enterprises to refrain from harmful activities.²⁸⁵

Besides, enterprises in “developed” countries which, e.g., largely depend on nuclear energy and which belong to the group of BPQ countries, would not need to reduce their emissions.

If all enterprises would have the same reduction obligations, it would undermine the very essence of the concept of common but differentiated responsibilities, as a major part of GHG emissions in most countries can be attributed to enterprises.

²⁸⁵ See, for examples, M.C. Mehta, *In the public interest*, Volume I; *Oposa v. Fulgencio Factoran* (Supreme Court of the Philippines), *Shela Zia v. Wapda*, PLD 1994 Supreme Court 693 (Supreme Court of Pakistan) and Brian J. Preston, *Climate Change Litigation*, and *Unconventional natural gas in the courts: An overview*.

These members also admit that principle 3.2 is very vague about the precise impact of the common but differentiated responsibilities on the reductions of local enterprises in below permissible quantum countries. That undoubtedly is a shortcoming. But the state of the law does not provide a sufficiently solid basis for further elaboration. However, the advantage of the draft is that it is unambiguous about the reduction obligations of enterprises in APQ countries.

Draft II, submitted by Michael Gerrard, was supported by most of the members present in Oslo. It was quoted above.

The obligation to “use all practicable means to reduce them through increased energy efficiency and greater use of zero- and low-carbon fuel sources” was challenged for various reasons:²⁸⁶

- * it seemingly presupposes that this is the most appropriate way to achieve the global level of reductions needed to avoid passing the tipping point. That view was challenged because our group does not have the expertise to determine the level of global reductions needed;
- * “practicable” is too vague. It seems to suggest that all *available* options should be effectuated. That may be (come) unavoidable, but it is open to debate whether we have already reached that stage;
- * it would have rather unattractive consequences. A wealthy enterprise, for example, would be under an obligation to realise much higher reductions, compared with an enterprise that suffers major losses and that cannot afford to reduce its GHG emissions. The submission would be even less attractive if the former enterprise, unlike the latter, would already have curbed its GHG emissions significantly to the point they are substantially below the level of its competitors.
- * even if one accepts, as a rule of thumb, that enterprises all over the globe have the same or largely similar reduction obligations, exceptions might apply in appropriate circumstances. This may be the case in relation to enterprises in (the most) vulnerable

²⁸⁶ Primarily by Thomas Pogge, Jim Silk, Jaap Spier and Philip Sutherland.

low GHG-emitting countries manufacturing (non luxury) goods for the local market and if and to the extent alternatives are, in light of the local circumstances, not available at a price that is affordable;²⁸⁷

* the submission in point seems to undermine the very essence of the common but differentiated responsibilities concept. We all endorse Principle 14, the concept of common but differentiated responsibilities: the most vulnerable countries do not have the same reduction obligations as (more) developed countries or do not even have reduction obligations at all.²⁸⁸ If local enterprises in the former group of countries would have the same or similar reduction obligations as enterprises in developed countries, this would mean that the GHG emissions in the most vulnerable countries would have to be reduced (quite significantly), despite the fact that these *countries* would not be subject to reduction obligations. The reason why the most vulnerable countries do not have or only have limited reduction obligations is to protect their poor population. This goal cannot be achieved if a major part of society and probably the major emitters would have to reduce their GHG emissions.

Besides, it is unclear what enterprises are expected to undertake in relation to their supply chains and the end users of their goods and services.²⁸⁹ All members fully agree that a lot would be gained if enterprises would encourage their supply chains to reduce their GHG emissions, but the dissenters wonder whether there is a *legal* obligation to do so. Even if there would be such an obligation, the extent of the reductions required from the “supply chain” would be rather unclear.

²⁸⁷ We realise that this is a delicate issue, in particular the production of luxury goods. The counter-argument that a firm in a vulnerable country would be allowed to produce luxury goods, thereby contributing to the ability of the local population to purchase necessary goods which otherwise would be beyond their needs, undoubtedly has merit. For that reason, we have opted for a cautious “may”.

²⁸⁸ Except those enumerated in Principles 7 - 9.

²⁸⁹ Michael Gerrard emphasises that allowing facilities in below-quantum countries to escape GHG control obligations would invite a massive race to the bottom. Just about every kind of manufacturing operation that faced large GHG control expenses would move to a place where it could avoid those expenses, greatly frustrating global GHG reduction efforts (and also leading to environmental degradation of many kinds in the receiving countries).

The draft (II) suggests that enterprises are only allowed to put (the most) energy-efficient products on the market. That submission, too, is sympathetic, but not all members are convinced that there is a *legal* underpinning for the submission. In their view, the submissions seem also unbalanced. For instance, they wonder whether it is justified to put so much emphasis on energy-consuming products. In their view, it could also be argued that, for example, travelling, air conditioning or building of large houses should be restricted or even forbidden.²⁹⁰

After further discussion, it appeared that the “practicability” obligation was meant by Michael Gerrard as a practical²⁹¹ and desirable *means* to arrive at the global reductions.

Our group has arrived at the conclusion that we cannot reach full agreement on the mitigation obligations of enterprises. All of us believe that enterprises have reduction obligations to the extent set forth in Principles 7 - 9.

We are also in agreement that enterprises have *additional* reduction obligations. The obligations of most enterprises, by and large, may be commensurate with the reductions required by Principle 6. Opinions diverge as to qualifications, either for enterprises in “developing countries” or more fundamentally for specific categories of enterprises, such as transport companies. Hence, we have to stick to the substantive Principles 7 - 9 and a set of procedural principles set forth in Principles 27 and 28.

Commentary to Principles 27 - 30

Principles 27 - 29

²⁹⁰ This is not to suggest that these members *advocate* the relevant measures.

²⁹¹ I.e., able to be done.

Similar “obligations” are found in the OECD Guidelines for Multinational Enterprises (2011). See, in particular, *supra* III (Disclosure).²⁹² The same is true for the Equator Principles,²⁹³ the IFC²⁹⁴ Environmental, Health and Safety General Guidelines,²⁹⁵ and the IFC Performance Standards on Environmental and Social Sustainability.²⁹⁶

Principle 29 is rooted in the OECD Guidelines *supra* VI (Environment) and IX (Science and Technology). According to para 1 of section VI, enterprises should “endeavour to ensure that their activities are compatible with the science and technology (...) policies and plans of the country in which they operate”.

The independent UN Expert on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, John Knox, observes “agreement among the sources reviewed that human rights law imposes certain procedural obligations on States in relation to environmental protection”; among them impact assessments.²⁹⁷ Impact assessments gain ground. EU directive 2014/52, amending an earlier directive on the assessment of the effects of certain public and private projects on the environment,²⁹⁸ may serve as an example. The recitals explicitly refer to “environmental issues such as resource efficiency, biodiversity protection, climate change”. They acknowledge that these concerns should “constitute

²⁹² See also UNEP, *Moving towards a climate neutral UN*, 2011 edition and IBA-report, o.c. p. 16, 17 and in quite some detail p. 149ff with detailed information about legislation in several countries. According to *A new global partnership*, o.c. p. 8, today only 25% of large companies report to shareholders on sustainability practices. In the view of the High-Level Panel, reporting should be commonplace by 2030 (also p. 8).

²⁹³ See, in particular, principles 1, 2, 5 and 8. They aim to provide “rules” for financial institutions.

²⁹⁴ Belonging to the World Bank Group.

²⁹⁵ Of April 30, 2007; see p. 18.

²⁹⁶ Effective January 1, 2012; see performance standard 1. See also Sands/Peel, o.c. p. 601ff.

²⁹⁷ A/HRC/25/53 *supra* 29, with further elaboration in the subsequent paragraphs; see also Preston, *Climate change litigation*, o.c. *supra* IV, and Burns H. Weston and Tracy Bach, *Recalibrating the Law of Humans with the Law of Nature: Climate Change, Human Rights, and Intergenerational Justice*, p. 34.

²⁹⁸ Official Journal 25.4.2014, L 12/41.

important elements in assessment and decision-making.”²⁹⁹ Similar developments occur in other parts of the globe.³⁰⁰

Principle 28

This principle is inspired by the “stranded assets” approach advocated by Carbon Tracker.³⁰¹ This initiative is based on the submission that the imperative to curb global GHG emissions points to an inevitable adverse impact on investments in fossil fuels: an ever higher portion of these fuels will become “unburnable.” By the same token, the related assets get stranded. It must be clear to those that value interests in enterprises in the fossil fuel industry should be accommodated in their valuation of these investments, to prevent future losses. Major investors increasingly are open to these ideas. This principle is based on a very similar concept.³⁰²

Principle 30

The financial risks of climate change for the financial industry are widely acknowledged.³⁰³

This principle builds upon the concepts of Principles 27 and 28. Financial institutions have fiduciary duties to enterprises of which they hold shares and indirectly to their shareholders and enterprises and private persons who have entrusted their money to them. These duties require that these financial institutions do not expose themselves to

²⁹⁹ Supra 7 and about climate change art. 3 (c).

³⁰⁰ See, in more detail, Olufeni Elias, Environmental impact assessment, in Fitzmaurice et al., o.c. p. 227ff.

³⁰¹ See Strategy outline, May 2013.

³⁰² See, in more detail, Equator Principles, p. 4; principles 1 and 2: for all projects when emissions are expected to be more than 100,000 tonnes of CO₂ equivalent annually, alternative analyses will be conducted to evaluate less GHG-intensive alternatives; p. 6; this means, according to p. 12, “evaluation of technically feasible and cost-effective options.” The EHS Guidelines also aim at “technical and financially feasible opportunities for improvement” (p. 18).

³⁰³ See, e.g., Bettina Furrer, Volker Hoffmann and Marion Swoboda, Banking & Climate Change, Opportunities and Risks.

inordinate risks.³⁰⁴ Hence, they have to consider the GHG footprints of projects they might be willing to finance, in determining the risk of the investment.

Epilogue

There is an increasing unease in the air. Ever more people believe that we cannot afford the slow pace of debate, the lack of action and the unwillingness to come to grips with the looming disasters. Our principles explore avenues to contribute to a real change. Legal strategies will not save our planet, but they could contribute to our common goal: to avoid still unnecessary catastrophes.

Our Indian colleague M.C. Mehta explained it eloquently: “When our legal systems become overly technical and convoluted they can stray too far from reality. Lawyers and the courts must see to it that their interpretations of the law adhere to reality as closely as possible. Otherwise, legal systems become rudderless and stray, from that single trajectory, which must be towards justice, into technicalities.”³⁰⁵ The U.S. Secretary of State Kerry furthermore contended:

“But now is the time for voices calling for climate action to get ever louder. Speak out. Make our message echo in every city on Earth. Make this an issue that no public official can ignore another day. (...)”³⁰⁶
Whether we’re able to address this threat will be a real test of global cooperation – and global leadership. But we couldn’t have a stronger stake in the outcome. (...) Onwards.”³⁰⁷

Indeed, onwards.

³⁰⁴ CDSB (Climate Disclosure Standards Board), Statement on Fiduciary Duty and Climate Change Disclosure; see also Ceres, The 21st Century Investor: Ceres Blueprint for Sustainable Investing, June 2013, and Shaping the law for global crises, o.c. p. 228ff. See, for further elaboration, IBA-report, o.c. p. 153 and 154.

³⁰⁵ In the public interest, Volume I, p. 74.

³⁰⁶ Deleted: “Make a transition toward clean energy – through smart investments – the inevitable, not impossible. (...)”

³⁰⁷ <http://readersupportednews.org/opinion2/277-75/26329-the-gathering-storm>.