AMIDST FRAGMENTATION AND COHERENCE: A SYSTEMIC INTERPRETATION OF THE WORLD HERITAGE CONVENTION AND THE UNFCCC REGIME

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I. Introduction

Current estimates indicate that global average temperatures might increase by 6.4°C from 1990 to 2100, due to the influence of anthropogenic greenhouse gas (GHG) emissions.[1] Even limiting projected temperature increases to below 4°C above pre-industrial levels would require a radical reframing of the economic direction of contemporary society.[2] This is extremely problematic, since it is currently assumed that the 2°C increase from pre-industrial levels urged by the Copenhagen Accord and restated by the Cancun Agreements, the Durban Outcomes and the Doha Climate Gateway will result in serious impacts on human institutions and ecosystems.[3]

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1 Intergovernmental Panel on Climate Change (IPCC) "Climate Change 2007: The Physical Science Basis – Technical Summary" (2007) <www.ipcc.ch> at 68 and following; World Trade Organisation (WTO) – United Nations Environment Programme (UNEP) "Report – Trade and Climate Change" (2009) <www.wto.org> at 32. For an overview of GHG emissions data see <maps.unfccc.int/di/map>. See also Matthew Clarke *Post-Kyoto: Designing the Next International Climate Change Protocol* (Nova Science Publisher, New York, 2008) at 23 and following.

2 See Andrei Sokolov and others "Probabilistic Forecast for Twenty-First Century Climate Based on Uncertainties in Emissions (Without Policy) and Climate Parameters" (2009) 22 Journal of Climate 5175 at 5176 and following.

3 The Copenhagen Accord defines a 2°C increase in temperature above pre-industrial levels as the threshold for dangerous anthropogenic interference with the atmosphere (UNFCCC Conference of the Parties *Copenhagen Accord* (Doc FCCC/CP/2009/11/Add.1, 2010), available at <unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf>. Reducing human-generated GHG emissions over time to keep the global average temperature rise below 2°C is thus one of the main objectives of the Cancun Agreements, the Durban Outcomes and the Doha Climate Gateway (see UNFCCC Conference of the Parties, Cancun *Report of the Conference of the Parties on Its Sixteenth Session – Decision 1/CP.16* (Doc FCCC/CP/2010/7/Add.1, 2011) at [4]; UNFCCC Conference of the Parties, Durban *Draft Decision - /CP.17, Establishment of an Ad Hoc Working Group on the Durban Platform for Enhanced Action* (Doc FCCC/CP/2011/L.10, 2011) Preamble and [2]; Doha Climate Gateway <unfccc.int>. See also UNEP "The Emissions Gap Report – Are the Copenhagen Accord Pledges Sufficient to Limit Global Warming to 2°C or 1.5°C?" (2010) at <www.unep.org>.

The effect of climate change on world heritage sites is an assessed reality, with respect to both cultural and natural heritage.[4] In fact, climate change threatens the outstanding universal value of many protected sites, which is based on their unique character for humanity as a whole,[5] so much so that it might drastically modify the current World Heritage List.[6] This explains why climate change is constantly cited in the documents of the World Heritage Committee as a threat to world heritage sites, though this threat has not yet led to the inscription of any site on the list of endangered sites and concurrent incumbent threats must be taken into account in order to determine to what extent the outstanding universal value of world heritage sites is endangered.[7] Certainly, the impact of climate change is likely to be different on natural and cultural world heritage.

On the one hand, of particular importance to cultural heritage is the increase in subsidence due to changes in ground and water levels, storm and wind damage to buildings, as well as deterioration of facades arising from thermal stress.[8] On the other hand, damage to natural heritage is likely to be caused especially by coastal and riverside flooding as well as glacial melt waters resulting from the increase in average temperatures.[9]

4 *Convention Concerning the Protection of World Cultural and Natural Heritage* 1037 UNTS 151 (adopted 16 November 1972, entered into force 17 December 1975) [World Heritage Convention]. On the definition of "cultural heritage" see Abdullah Yusuf "Article 1: Definition of Cultural Heritage" in Francesco Francioni and Federico Lenzerini (eds) *The 1972 World Heritage Convention: a Commentary* (Oxford University Press, Oxford, 2008) at 23 and following. On the definition of "natural heritage" see Catherine Redgwell "Article 2 – Definition of Natural Heritage" in Francioni and Lenzerini (eds) *The 1972 World Heritage Convention: a Commentary* (Oxford University Press, Oxford, 2008) at 63 and following.

5 Francesco Francioni incisively analyses outstanding universal value as "on the one hand, the ability of the property to exercise universal appeal by virtue of its exceptional qualities, including its authenticity, its resonance in terms of human experience, and its capacity to interpret in an exceptional manner one of the eternal themes of the human condition, such as the mystery of life, the struggle for survival, death, the search for beauty. On the other hand, the concept of universality must be linked to the capacity to represent the diversity of the cultures and traditions of the world, both in the space and time dimension" (Francesco Francioni "The Preamble" in Francioni and Lenzerini, above n 4, 11 at 18-21). On the identification of sites of outstanding universal value under Article 3 of the World Heritage Convention see Ben Boer "Article 3: Identification and Delineation of World Heritage Properties" in Francioni and Lenzerini, above n 4, at 85 and following. See also Francesco Baldini *World Heritage Challenges for the Millennium* (UNESCO, Paris, 2007) at 39-42.

6 See the current World Heritage List and the World Heritage Centre's studies at <whc.unesco.org>. For a map of cultural heritage sites threatened by climate change see Michelle Berenfeld "Climate Change and Cultural Heritage: Local Evidence, Global Responses" (2008) 25 The George Wright Forum 66 at 68.

7 See the documents relating to the ordinary and extraordinary meetings of the World Heritage Committee at <whc.unesco.org>.

8 See UNESCO "Case Studies on Climate Change and World Heritage" (2007) <unesdoc.unesco.org> at 54-77.

9 At 18-53.

However, natural and cultural characteristics of sites of outstanding universal value are quite often closely related, and climate change implications are similar in each category.[10] This correlation may be acknowledged explicitly, as in the case of the Mount Emei Scenic Area in China and the Tongariro National Park in New Zealand, which are classified as "mixed sites" – "both natural and cultural sites" – the latter also being an example of "cultural landscape",[11] or implicitly, as in the case of the Great Barrier Reef in Australia.[12] In this vein, a meeting of experts on climate change recently held in Parati (Brazil) highlighted the delicate and intricate web of relationships between nature and culture, by stressing that natural sites play a fundamental role in fostering strong communities, supporting the physical and spiritual well-being of individuals and promoting mutual understanding and peace.[13]

Though the degradation of world heritage is only one part of the broader degradation of ecosystems resulting from climate change, it is not at all irrelevant. In fact, the iconic nature and the high profile of many world heritage sites make them particularly suitable to promote public awareness of the need for action on climate change mitigation and adaptation and is likely to be more immediate to people than knowledge of the science of temperature variation itself. Think, for instance, about the Italian city of Venice, which, according to recent studies, could be swamped by daily floods by the end of the century, in spite of adaptation measures such as flood defence technologies.[14] Consider also the threat brought to the city of Petra in Jordan by subsidence, thermal stress and flash flooding.[15] Indeed, the network of world heritage cities offers an unparalleled opportunity to promote and highlight the use of energy-efficient and carbon-neutral technologies.[16] Think also about the Waterton Glacier International Peace Park,[17] where, since 1850, the area covered by glaciers has decreased by 84 percent, that is more than four/fifths of the surface of the approximately 150 glaciers that originally existed within the park's boundaries, so that its

10 See Ben Boer and Graeme Wiffen *Heritage Law in Australia* (Oxford University Press, South Melbourne, Oxford, New York, 2006) at 8 and 16 and following; Francesco Francioni "Introduction" in Francioni and Lenzerini, above n 4, 1 at 5; Sandra Pannell *Report: Reconciling Nature and Culture in a Global Context? Lessons from the World Heritage List* (James Cook University, Townsville, 2006).

11 See <whc.unesco.org/en/culturallandscape>.

12 See information at <www.cultureandrecreation.gov.au>.

13 World Heritage Committee *World Heritage Convention and Sustainable Development* (Doc WHC-10/34.COM/5D, 2010) at 3 [8(b)].

14 See Laura Carbognin and others "Global Change and Relative Sea Level Rise at Venice: What Impact in Terms of Flooding?" (2010) 35 Climate Dynamics 1039 at 1055-1063; UNESCO, above n 8, at 70-71.

15 Berenfeld, above n 6, at 70-71, and footnote 13.

16 UNESCO World Heritage Centre "Policy Document on the Impacts of Climate Change on World Heritage Properties" (2008) <whc.unesco.org> at 9. See also the World Heritage Cities website at <www.ovpm.org>.

17 See <www.nps.gov/glac> and <www.pc.gc.ca>.

outstanding universal value seems to be almost completely lost.[18] Another striking example is that of the Great Barrier Reef in Australia, the largest coral reef ecosystem in the world, where it is acknowledged that increasing temperatures cause severe coral bleaching and damage to species and communities.[19] In light of this, the World Heritage Convention might emerge as a crucial tool in the fight against climate change.

Therefore, it is important to understand to what extent the regulatory framework established under the World Heritage Convention provides ways and sets out obligations for States to act against climate change. This is the aim of the present article, which explores the question by considering how the World Heritage Convention interacts with existing international instruments specifically targeting climate change, in particular the regime established under the United Nations Framework Convention on Climate Change (UNFCCC).[20]

The paper first summarises the petitions that brought the impact of climate change on world heritage sites to the attention of the World Heritage Committee as well as the position of the Committee. Secondly, it explores the relationship between, on the one hand, the World Heritage Convention, and, on the other hand, the UNFCCC regime, respectively from the viewpoint of on-site mitigation and adaptation measures and general mitigation measures. The ultimate purpose of this enquiry, which is based mainly on a textual analysis of existing rules, is to shed light on the normative relationship between the different regulatory regimes in order to understand what initiatives can be undertaken within the respective contexts.

18 "Waterton Glacier IPP Report of the Reactive Monitoring Mission" (2010) <www.nps.gov> at 34.

19 See Australian Government Great Marine Reef Park Authority "Great Barrier Reef Outlook Report" (2009) <www.gbrmpa.gov.au> at 90 and following.

20 United Nations Framework Convention on Climate Change 1771 UNTS 107 (opened for signature 4 June 1992, entered into force 21 March 1994) [UNFCCC] and Kyoto Protocol to the UNFCCC 2303 UNTS 148 (opened for signature 11 December 1997, entered into force 16 February 2005). Under the Bali Action Plan, the Conference of the States Parties to the UNFCCC launched a process to implement the Convention beyond 2012, the date of expiry of the first commitment period under the Kyoto Protocol (see UNFCCC Conference of the Parties *Bali Action Plan* (Doc FCCC/CP/2007/6/Add.1, 2008); Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol, Cancun *Draft Proposal by the Chair to Facilitate Preparations for Negotiations* (Doc FCCC/KP/AWG/2010/CRP.3, 2010). The Durban Outcomes led to the objective of reducing aggregate GHG emissions by Parties included in Annex I by at least 25–40% below 1990 levels by 2020 and defined some emission limits during the commitment period 2012-2017 (for instance, 20-30% for the EU – see UNFCCC Conference of the Parties, Durban *Consideration of Further Commitments for Annex I Parties under the Kyoto Protocol* (Doc FCCC/KP/AWG/2011/L.3/Add.1, 2011) Preamble and Annex 1. The Doha Gateway definitely launched a second commitment period under the Kyoto Protocol.

II. The Practice Linking World Heritage and Climate Change

A. The Petitions to the World Heritage Committee

Between 2004 and 2006, thirty-seven non-governmental organisations and individuals filed five petitions with the World Heritage Committee, requesting the addition of several world heritage sites to the List of World Heritage in Danger,[21] thus bringing climate change to the attention of the World Heritage Committee. Under Article 11(4) of the World Heritage Convention, a world heritage site is basically regarded as "endangered" when it is "threatened by serious and specific dangers", such as disappearance caused by accelerated deterioration, so that "major operations are necessary" and "assistance has been requested".[22]

Four petitions were filed in 2004. They concerned Sagarmatha National Park in Nepal, Huascaran National Park in Peru, the Great Barrier Reef in Australia and the Belize Barrier Reef Reserve System. A fifth petition was filed in 2006 by non-governmental organisations in the United States and Canada, concerning the Waterton Glacier International Peace Park.[23] All the petitions alleged that climate change poses the primary threat to the integrity of these sites and called for States Parties to the World Heritage Convention to make drastic cuts in their GHG emissions. Specifically, two petitions associated massive coral bleaching with rising temperatures, whilst the other three petitions focused on the threat posed by glacial melting to world heritage sites as a consequence of warming trends. Whereas petitioners seeking "in Danger" listings in the past had almost always contended that requisite "major operations" to protect world heritage sites must be conducted by the State in which the endangered property is located, it is notable that in three of the five climate change "in Danger" petitions (that is, save the Waterton Glacier International Peace Park petition and the Great Barrier Reef petition) it was argued that third States, especially major GHG emitters, are also compelled to engage in "major operations" to control GHG emissions that are precipitating climate change.[24] Furthermore, the petition concerning the Waterton Glacier International Peace Park, which is located between the United States and Canada, suggested that the emissions-reduction target expected if the Kyoto Protocol was ratified by the United States should

21 See the list of endangered sites at <whc.unesco.org>.

22 See the full text of Article 11(4) of the WHC below at footnote 68.

23 *Waterton Glacier International Peace Park Petition* (16 February 2006), *Huascaran National Park Petition* (17 November 2004), *Sagarmatha National Park Petition* (15 November, 2004), *Belize's Barrier Reef Petition* (15 November 2004), *Great Barrier Reef Petition* (21 September 2004) at <www.climatelaw.org>.

24 See the *Sagarmatha National Park Petition*, above n 23, at 3; *Huascaran National Park Petition*, above n 23, at 40; and *Belize's Barrier Reef Petition*, above n 23, at 30.

provide initial guidelines for corrective measures.[25] In this vein, the petitioners proposed a set of remedies for reducing GHG emissions in the generation of electricity and in the transportation sector.[26]

In 2007, Climate Action Network Australia, Greenpeace, the New South Wales Nature Conservation Council and Friends of the Earth filed a new petition with the World Heritage Committee requesting inscription of the Blue Mountains Area in Australia on the List of World Heritage in Danger.[27] The petition alleged that rising temperatures could substantially increase the incidence of bushfires, imperilling the diversity of major Eucalyptus species and other flora, ultimately undermining the integrity of the ecosystem in the region.[28] Furthermore, rising temperatures would replace some species with others more attuned to drier conditions.[29] As a remedy, not only on-site management measures, but also general plans of action to reduce GHG emissions were proposed, including the adoption by developed countries of consistent limits to the release of carbon dioxide (CO2) in the atmosphere and systematic resort to renewable energy.[30]

In January 2009, two non-governmental organisations, EarthJustice and the Australian Climate Justice Programme, filed a further petition with the World Heritage Committee, focusing on the threat posed by black carbon to an array of world heritage sites.[31] Black carbon is a component of soot and is primarily produced through the combustion of fossil fuels (coal and diesel) as well as the burning of biomass, such as crop residues for cooking.[32] The petitioners alleged that warming caused by black carbon, including decreased surface reflection of solar radiation, provokes glacial melt and sea-level rise, thus threatening many world heritage sites – some of which were already considered in the previous petitions – and thus might justify their inscription on the List of World Heritage in Danger.[33] As a remedy, the petition suggested not only increased monitoring by relevant world heritage bodies, but also allocation of resources from the World Heritage Fund to assist parties and site managers in developing mitigation and adaptation measures,[34] in conjunction with other pertinent bodies, such as UNFCCC institutions.[35] The petition is very important in that it addresses the threat posed by a GHG agent that is

25 See *Waterton Glacier International Peace Park Petition*, above n 23, at 21.
26 At 21 and following.
27 See *Blue Mountains Petition* (22 June 2007) at <www.climatelaw.org>.
28 At 15–16.
29 At 17.
30 At 27–42 and 62 and following.
31 *Petition to the World Heritage Committee, The Role of Black Carbon in Endangering World Heritage Sites Threatened by Glacial Melt and Sea Level Rise* (29th January 2009) at <whc.unesco.org>.
32 See Veerabhadran Ramanathan and Gregory Carmichael "Global and Regional Climate Changes Due to Black Carbon" (2008) 1 Nature Geoscience 221.
33 Earthjustice and Australian Climate Justice Programme, above n 31, at 4 and following.
34 At 41-42.
35 At 42-43.

currently not regulated under the UNFCCC and the Kyoto Protocol first commitment period, nor is likely to be regulated under the foreseeable post-2012 commitment periods.[36]

B. The Position of the World Heritage Committee

1. The Responses to the Petitions

The World Heritage Committee addressed the first four petitions in Decision 29 Com 7B.a, in July 2005.[37] While acknowledging the "genuine concerns" of the petitions and the impact of climate change on both "natural and cultural" sites of outstanding universal value,[38] the World Heritage Committee did not inscribe the sites in question on the List of World Heritage in Danger.[39] The Committee recognised the threat that climate change poses to many world heritage properties and encouraged States Parties to "seriously consider" its impact on management planning for such sites.[40] It also requested the creation of a working group of experts to study the risks posed to world heritage sites by climate change.[41] In 2006, the outcomes of this work led to the publication of a Report on Predicting and Managing the Effects of Climate Change on World Heritage (the "Joint Report") and the Strategy to Assist States Parties to Implement Appropriate Management Responses (the "Strategy").[42]

The Joint Report recommends the implementation of on-site mitigation and adaptation techniques and also requires "States Parties and site managers [...] to look beyond the individual site level and develop and implement regional and/or trans-boundary mitigation and adaptation strategies that reduce the vulnerability of natural world heritage sites in a larger landscape or seascape context".[43]

The Strategy, which was endorsed by the World Heritage Committee in July 2006,[44] represents the Committee's chief response to threats posed by climate change to world heritage sites. It focuses on three types of action:

36 At 36.

37 World Heritage Committee *Report of Decisions Adopted at the Twenty-ninth Session* (Doc. WHC-05/29.COM/22, 2005) Decision 29 Com 7B.a at 36-37.

38 At [4] and [5].

39 At its thirty-third meeting, held in June 2009, the Committee did place the Belize Barrier Reef Reserve System on the List of World Heritage in Danger, but because of mangrove cutting, not because of climate change (World Heritage Committee *Report of Decisions Adopted at Its Thirty-third Session* (Doc WHC-09/33.COM/20, 2009) Decision 33 COM 7B.33, specifically at [3] and [9]).

40 World Heritage Committee, above n 37, at [6].

41 At [7] and [9].

42 See World Heritage Centre, Its Advisory Bodies, and a Broad Group of Experts *Report on Predicting and Managing the Effects of Climate Change on World Heritage* (2006) (hereinafter "*Joint Report*") and "Strategy to Assist States Parties to Implement Appropriate Management Responses" (2006) ["Strategy"].

43 *Joint Report*, above n 42, at [101].

44 See World Heritage Committee *Issues Related to the State of Conservation of World Heritage Properties: the Impacts of Climate Change on World Heritage Properties* (Doc. WHC-06/30. COM/7.1, 2006) and World Heritage Committee *Report of Decisions Adopted at Its Thirtieth Session* (WHC-06/30.COM/19, 2006) Decision 30.COM/7.1 [*Report*].

pre-emptive action, including monitoring, reporting and mitigation of climate change impacts; corrective action, with a focus on global, regional and local adaptation strategies; and the sharing of knowledge, including best practice, education and capacity building.[45] However, as regards mitigation, the Strategy severely narrows the role of the World Heritage Convention in controlling GHG emissions, by emphasising that global and national mitigation strategies are established under the UNFCCC. Whilst concluding that the world heritage community has a role to play in mitigation, the Strategy confines such a function to providing information to the UNFCCC bodies and the Intergovernmental Panel on Climate Change (IPCC), as well as encouraging site-based reduction of GHGs.[46] The World Heritage Committee characterises the UNFCCC as "the preferred international tool to address [general] mitigation",[47] and alerts us that there are "other international instruments" for coordinating the response to climate change.[48]

The Strategy was followed by the Policy Document on the Impact of Climate Change on World Heritage Properties, which was adopted by the 16th General Assembly of States Parties to the World Heritage Convention in 2007.[49] This document echoes the World Heritage Committee's characterisation of the UNFCCC and the IPCC as the "key international organisations" to address climate change and, in the same vein, stresses the need for adaptation and on-site mitigation measures.[50]

The World Heritage Committee dealt with the Waterton petition in 2009.[51] The Committee recognised the "high level of public concern" regarding the "potential threat and any effects of climate change",[52] and invited States Parties to "explore appropriate and practical adaptation and mitigation strategies to maintain the Outstanding Universal Value of the property in the long term",[53] but finally set a deadline for reporting only on

45 "Strategy", above n 42, at [13].

46 At [18].

47 At [121]. According to some authors, the World Heritage Committee upholds the position that: (1) the UNFCCC was specifically established to mitigate anthropogenic GHG emissions that precipitate climate change; and (2) as such, it constitutes a *lex specialis* regime, and thus should be the forum in which States address climate change (William Burns "Belt and Suspenders? The World Heritage Convention's Role in Confronting Climate Change" (2009) 18 Review of European, Comparative and International Environmental Law 148 at 158). For a critique of this approach see Erica Thorson "The World Heritage Convention and Climate Change: the Case for Climate-Change Mitigation Strategy beyond the Kyoto Protocol" in William Burns and Hari Osofski (eds) *Adjudicating Climate Change: State, National and International Approaches* (Cambridge University Press, Cambridge, 2009) at 255 and following.

48 World Heritage Committee *Report*, above n 44, Decision 30 COM 7.1, at 7, [8].

49 See UNESCO World Heritage Centre, above n 16.

50 At 4 and 9.

51 World Heritage Committee, above n 39, Decision 33 COM 7B.22.

52 At [7].

53 At [10]. A similar policy was suggested by the World Heritage Committee with regard to the Rwenzori Mountains National Park in Uganda (World Heritage Committee, above n 39, Decision 33 COM 7B.7, at [7]).

adaptation measures.[54] Furthermore, in its 2010 meeting held in Brasilia, the World Heritage Committee confined itself to suggesting on-site mitigation strategies for preserving the integrity of the Waterton Glacier International Peace Park, without mentioning any general mitigation strategy.[55]

As regards the 2009 petition, in the World Heritage Committee took note of the "role of black carbon in the endangering of world heritage properties" and encouraged "all States Parties to exchange information on existing national policies, regulations and opportunities for immediate voluntary action" to control black carbon emissions.[56] In contrast, no decision has yet been taken concerning the Blue Mountains petition.

2. Other Decisions of the World Heritage Committee on Climate Change

Outside the framework of the petitions, the World Heritage Committee recently recognised the impact of global warming on world heritage sites. Thus, in its 2008 Meeting in Quebec City, the Committee decided to amend Article 179(b)(vi) of the Operational Guidelines to the World Heritage Convention. Adopting the criteria proposed for assessing properties which are most threatened by climate change for inclusion on the List of World Heritage in Danger, the Committee moved from "gradual changes due to geological, climatic or other environmental factors" to "threatening impacts of climatic, geological or other environmental factors".[57] In the same vein, in 2009, the Committee requested the World Heritage Centre and Advisory Bodies to adopt a consistent approach in reporting on the impact of climate change on world heritage sites and to ensure that related decisions are based on the Committee's Strategy to assist States Parties.[58] If, on the one hand, such statements stress the impact of climatic factors on world heritage sites, on the other hand, in light of the petitions, extensive experts' meetings, deliberations and reports on the issue, they can be considered a minimalist remedy. Furthermore, in all of these initiatives, the Committee constantly focused primarily on adaptation and on-site mitigation measures.

In 2010, a Report of the World Heritage Centre and the Advisory Bodies to the World Heritage Committee on the World Heritage Convention and sustainable development considered that the great potential of world heritage sites for contributing to sustainability is still not sufficiently recognised in both developing and developed countries. The Report stresses that unsustainable development is perhaps the most significant threat to heritage conservation, and concludes that sustainable development must take into account the need

54 World Heritage Committee, above n 51, Decision 33 COM 7B.22, at [12].
55 World Heritage Committee *Report of the Decisions Adopted at Its Thirty-fourth Session* (WHC-10/34.COM/20, 2010) Decision 34 COM 7B.20, at 73-74.
56 World Heritage Committee, above n 39, Decision 33 COM 7C, at [15].
57 See World Heritage Committee *Report of Decisions Adopted at Its Thirty-second Session* (Doc WHC.08/32.COM/24rev, 2008) Decision 32 COM 7A.32 [6(a)] (Amendment to para [179(b)(vi)]) and the latest version of the Operational Guidelines (Doc WHC. 11/01, 2012) [179(b)(vi)].
58 World Heritage Committee, above n 39, Decision 33 COM 7C at [16].

to preserve world heritage sites.[59] Though the Report highlights the fact that the impact of climate change on world heritage sites should involve a revision of the policies and procedures of the World Heritage Convention, in light of the view adopted by the World Heritage Committee, it includes no reference to general GHG emissions mitigation.[60] This approach is also reflected in the subsequent decisions of the World Heritage Committee on the relationship between world heritage and sustainable development.[61]

Overall, thus far climate change alone has not determined the inscription of any site on the List of World Heritage in Danger. This is all the more remarkable in light of the fact that the first petition on climate change was brought to the attention of the World Heritage Committee in 2004. However, together with other factors, climate change has been recognised on several occasions as a crucial potential threat for the outstanding universal value of world heritage sites.[62]

III. Adaptation and Mitigation within the Context of the World Heritage Convention: a Composite Normative Framework

A. A Preliminary Classification

Action against climate change includes basically two types of measures: adaptation, which is responsive and necessarily site-based, and mitigation, which is pre-emptive and can be general, site-based or both.

Adaptation is defined as the "adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities",[63] whereas mitigation is regarded as "an anthropogenic intervention to reduce the sources of greenhouse gases or enhance their sinks".[64]

Within the context of the World Heritage Convention, which was adopted in 1972 and includes, to date, 190 States Parties,[65] adaptation and mitigation might be envisaged under Articles 4, 5 and 6.[66] In fact, these are core rules that

59 World Heritage Committee, above n 13, at 3, [8(c)].

60 At 5 and following. Only Annex I (Jyoti Hosagrahar *Integrating Sustainable Development in Heritage Planning: a Proposed Methodology*) provides the promotion of "mitigation and adaptation strategies to the impacts of climate change through planning and design" (at 11, point 14).

61 World Heritage Committee *Report of Decisions Adopted at Its Thirty-fifth Session* (Doc WHC-11/35.COM/20, 2011) Decision 35COM 5E; *Report*, above n 55, Decision 34 COM 5D.

62 See World Heritage Committee *Report of Decisions Adopted at Its Thirty-sixth Session* (Doc WHC.12/36.COM/19, 2012) Decision 35 COM 7A.15, at [4].

63 See UNESCO World Heritage Centre, above n 16, at 4, discussing the definition provided by the IPCC.

64 At 4.

65 See <whc.unesco.org> as at 19 September 2012.

66 See UNESCO World Heritage Centre, above n 16, at 6-7. For a positive summary of the debate on the compelling nature of Articles 4, 5 and 6 of the World Heritage Convention see Erica Thorson "On Thin Ice: the Failure of the United States and the World Heritage

establish the basic substantive obligations of States Parties to ensure preservation and protection of sites of outstanding universal value, be they simply inscribed on the World Heritage List (Article 11(2)),[67] or also registered on the List of World Heritage in Danger (Article 11(4)).[68] This means that the rejection of the petitions demanding the inscription of sites threatened by global warming on the List of World Heritage in Danger does not prevent action against the negative impact of climate change on world heritage, since their inscription on the World Heritage List is sufficient to benefit from the rights and procedures established under the World Heritage Convention. Furthermore, a minimum level of protection should be granted under the World Heritage Convention to sites that are not even registered on either List (Article 12).[69]

Article 4 of the World Heritage Convention sets out basic obligations in the matter of protection and conservation of world heritage:[70]

> Each State Party to this Convention recognises that the duty of ensuring the *identification, protection, conservation, presentation and transmission to future generations* of the cultural and natural heritage referred to in Articles 1 and 2 and situated *on its territory, belongs*

Committee to Take Climate Change Mitigation Pursuant to the World Heritage Convention Seriously" (2008) 38 Environmental Law 139 at 161-164. For a summary of the same debate with regard to the UNFCCC see Patricia Birnie, Alan Boyle and Catherine Redgwell *International Law and the Environment* (Oxford University Press, Oxford 2009) at 356 and following; Robert Quick "Border Tax Adjustments in the Context of Emissions Trading: Climate Protection or 'Naked' Protectionism?" (2008) 3 Global Trade and Customs Journal 163 at 169; Roda Verheyen *Climate Change Damage and International Law: Prevention, Duties and State Responsibility* (Martinus Nijhoff Publishers, Leiden, 2005) at 135.

67 Article 11(2) of the World Heritage Convention provides: "On the basis of the inventories submitted by States […] the Committee shall establish, keep up to date and publish, under the title of "World Heritage List", a list of properties forming part of the cultural heritage and natural heritage […] which it considers as having outstanding universal value in terms of such criteria as it shall have established. An updated list shall be distributed at least every two years." See also Tullio Scovazzi "Articles 8-11 – World Heritage Committee and World Heritage List", in Francioni and Lenzerini, above n 4, at 147 and following.

68 Article 11(4) of the World Heritage Convention provides: "The Committee shall establish, keep up to date and publish, whenever circumstances shall so require, under the title of 'list of World Heritage in Danger', a list of the property appearing in the World Heritage List for the conservation of which major operations are necessary and for which assistance has been requested under this Convention. This list shall contain an estimate of the cost of such operations. The list may include only such property forming part of the cultural and natural heritage as is threatened by serious and specific dangers, such as the threat of disappearance caused by accelerated deterioration, large-scale public or private projects or rapid urban or tourist development projects; destruction caused by changes in the use or ownership of the land; major alterations due to unknown causes; abandonment for any reason whatsoever; the outbreak or the threat of an armed conflict; calamities and cataclysms; serious fires, earthquakes, landslides; volcanic eruptions; changes in water level, floods and tidal waves. The Committee may at any time, in case of urgent need, make a new entry in the List of World Heritage in Danger and publicise such entry immediately". See also Gionata Buzzini and Luigi Condorelli "Article 11 – List of World Heritage in Danger and Deletion of a Property from the World Heritage List" in Francioni and Lenzerini, above n 4, at 175 and following.

69 Federico Lenzerini "Article 12 – Protection of Properties Not Inscribed on the World Heritage List" in Francioni and Lenzerini, above n 4, at 201 and following.

70 See Guido Carducci "Articles 4-7 – National and International Protection of the Cultural and Natural Heritage" in Francioni and Lenzerini, above n 4, 103 at 107.

> *primarily to that State*. It will *do all it can* to this end, *to the utmost of its own resources* and, where appropriate, with any *international assistance and co-operation*, in particular, financial, artistic, scientific and technical, which it may be able to obtain.[71]

Transmission to future generations is implicitly linked to the concept of "heritage." It entails appropriate protection from damage and destruction as well as protection from the loss of outstanding universal value.[72]

Article 4 embeds a certain tension between sovereignty and cooperation, given that it imposes duties on the State, on its own territory, and also mentions international assistance and cooperation. However, the primary obligation remains clearly on the territorial State, which is supposed to prevent "excessive and/or undue expectations being put on the international community as a whole or on other States (*uti singuli*) for heritage situated outside their territories".[73] In contrast, assistance is not automatically operational, but must be sought consistently with the Convention, according to the procedures established under Chapter V of the World Heritage Convention.

The reference to the obligation of a State Party to "do all it can to the utmost of its own resources" takes into account cultural, social and economic factors, essentially the resources of each State.[74] This wording, however, must not be interpreted as a limit to the binding effect of the provision.[75]

Article 5(d) of the World Heritage Convention further spells out in detail obligations generally stated under Article 4:

> To ensure that effective and active measures are taken for the *protection, conservation and presentation* of the cultural and natural heritage situated *on its territory*, each State Party to this Convention shall endeavour, *in so far as possible, and as appropriate for each country*:
> […]
> (d) to take the *appropriate* legal, scientific, technical, administrative and financial *measures* necessary for the *identification, protection, conservation, presentation and rehabilitation of this heritage*.[76]

This rule sets out a list of basic measures to be taken by States for realising the purposes of the Convention. Action is envisaged based on the exclusive principle of territoriality and commitment is regarded once again as proportional to the resources of each country.[77] However, the latter provision must also not be regarded as a limit to the binding effect of the rule.[78]

71 Emphasis added.
72 Carducci, above n 70, at 114-115.
73 At 115-116.
74 At 116.
75 Thorson, above n 47, at 261.
76 Emphasis added.
77 See Carducci, above n 70, at 117. In the sense that Articles 4 and 5 of the World Heritage Convention basically provide a domestic approach to world heritage protection see Boer and Wiffen, above n 10, at 75-76.
78 Thorson, above n 47, at 261. According to Boer and Wiffen, above n 10, at 82, the expression "to the utmost of their own resources" in Articles 4 and 5 of the World Heritage Convention would not justify "a lack of action on the basis of economic constraints".

Article 6 of the World Heritage Convention complements Article 4. It provides:

> 1. Whilst fully respecting the sovereignty of the States on whose territory the cultural and natural heritage mentioned in Articles 1 and 2 is situated, and without prejudice to property right provided by national legislation, the States Parties to this Convention recognise that such heritage constitutes a *world heritage* for whose protection it is the *duty of the international community as a whole to co-operate*.
> …
> 3. Each State Party to this Convention *undertakes not to take any deliberate measures* which might damage directly or indirectly the cultural and natural heritage referred to in Articles 1 and 2 situated on the territory of other States Parties to this Convention.[79]

This provision clearly asserts the necessity for States of acting in a co-operative way within the limits outlined by the principle of sovereignty.[80]

Furthermore, States are compelled to act in a negative and pre-emptive way, so as basically not to cause damage to extra-territorial world heritage sites. Within this framework, as far as any action that might directly or indirectly damage world heritage sites is concerned, the scope of the rule is confined to "deliberate" measures.[81]

Finally, an important issue is assessing whether or not obligations established under Articles 4, 5 and 6 of the World Heritage Convention have limited scope, *inter partes*, or a general one, *erga omnes*.[82] Within the context of the present research, it would be impossible to develop detailed reflections on the matter. It is sufficient to mention that, in light of the almost universal accession of States to the World Heritage Convention, it is not illogical to maintain that resulting obligations have a universal scope. Thus, in the following debate on adaptation and mitigation measures, we will briefly take into account the possible implications of the scope of the obligations established under the World Heritage Convention.

B. The Likelihood of Adaptation and On-Site Mitigation Measures

The World Heritage Convention seems easily to encompass adaptation and on-site mitigation measures. In fact, in light of the above definition,[83] adaptation and on-site mitigation measures can be considered *ad hoc* repressive remedies aiming at the "protection" and "conservation" of world heritage sites under Articles 4 and 5(d) of the World Heritage Convention. Furthermore, this type of action falls within the scope of the principle of territoriality,

79 Emphasis added.

80 Carducci, above n 70, at 119.

81 At 126. The most exemplary case of "deliberate" action aiming to destruct world heritage properties is the destruction of the Buddhas of Bamiyan in Afghanistan, which was followed in 2003 by the Declaration of the General Conference of UNESCO on the Intentional Destruction of Cultural Heritage (see also Francesco Francioni and Federico Lenzerini "The Destruction of the Buddhas of Bamiyan and International Law" (2003) 14 (4) European Journal of International Law 619).

82 See Carducci, above n 70, at 111, 121-122, 115, 119, 132-144; Buzzini and Condorelli, above n 68, at 179.

83 See above section III.A.

which is not only stated in Article 4, but is also clearly confirmed in Article 5 of the World Heritage Convention. Moreover, adaptation and mitigation measures perfectly fit with the cooperative framework mentioned in Article 4 and re-affirmed in Article 6(1) of the World Heritage Convention. In fact, they can be adopted according to the procedures specified in Articles 8 and following of the World Heritage Convention, which are centred on the World Heritage Committee.

It will also be noted that the inscription of sites on the List of World Heritage in Danger is reserved for world heritage properties threatened by "*specific* dangers" (Article 11(4) of the World Heritage Convention)[84] and requiring major operations for which assistance has been requested. Actually, indirect effects of global warming tackled by means of on-site mitigation and adaptation measures, for example, flooding caused by changes in water level, thermal stress and glacial melting provoked by increased atmospheric temperature, may certainly be regarded as "specific" dangers. Thus, the taking of adaptation and on-site mitigation measures can be easily justified under the umbrella of Article 11(4) of the World Heritage Convention.

From the above, it can be inferred that the World Heritage Convention, on the one hand, and the UNFCCC regime, on the other hand, are fully consistent as regards adaptation and on-site mitigation measures. In fact, the UNFCCC regime provides for the adoption of local measures against climate change (Article 4(b) and (e) of the UNFCCC and 10(b) of the Kyoto Protocol),[85] which can be implemented via the World Heritage Convention when climate change specifically threatens sites of outstanding universal value. At the same time, it can be maintained that the obligation to protect sites of outstanding universal value via on-site mitigation and adaptation measures under the World Heritage Convention must be read consistently with the subsequent UNFCCC regime. This interpretation is consistent with Article 31(3)(c) of the 1969 Vienna Convention on the Law of Treaties (VCLT),[86] which provides that a treaty must be interpreted in light of "any relevant rules of international law applicable in the relations between the parties".

Thus, the UNFCCC regime and the World Heritage Convention can be regarded as mutually reinforcing legal systems within the framework of the theory of systemic integration, whereby the World Heritage Convention should be considered special law in light of the outstanding universal value of world heritage sites, which clearly entails the adoption of specific responses.[87] In this regard, it seems logical to assume that States which are

84 Emphasis added.

85 See also the Bali Action Plan, above n 20, at [1(c)]; *Copenhagen Accord*, above n 3, at [1], [3], [8], [10], [11]; UNFCCC Conference of the Parties, Cancun, above n 3, at 4 and following; UNFCCC Conference of the Parties, Durban, above n 3, at [5].

86 Vienna Convention on the Law of Treaties 1155 UNTS 331 (adopted 23 May 1969, entered into force 27 January 1980).

87 International Law Commission *Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law* A/CN.4/L.682 (2006) at 25 and following, [37] and following.

parties to the UNFCCC and the Kyoto Protocol, but not to the World Heritage Convention, such as the Bahamas, Bhutan and the Democratic People's Republic of Korea,[88] are compelled to adopt on-site mitigation and adaptation measures to protect sites of outstanding universal value comparable to those adopted by States that are parties to the World Heritage Convention. In fact, harmonious interpretation overrides the principle of speciality and the ultimate effect of systemic integration is the "extension" of the World Heritage Convention obligations to States which are parties to the UNFCCC regime.

Adaptation and on-site mitigation measures are an important contribution of the World Heritage Convention in the fight against climate change, especially because adaptation has recently emerged as an "urgent policy priority", at least in the short term.[89] In particular, the world heritage adaptation blueprint encompasses several components that most experts believe will be critical for obtaining knowledge and implementing effective adaptation strategies, including the development of efficient monitoring systems, the application of adaptive management responses, and the creation of a clearinghouse mechanism for best-case adaptation practices. Furthermore, world heritage sites are distributed around the world and represent a variety of ecosystems that are exposed to impacts from climate change of different kinds, magnitudes and rates. Therefore, adaptation projects for those sites may serve as a highly effective laboratory in order to ascertain optimal adaptive strategies for the global community.[90]

Moreover, the commitment to developing adaptation programmes within the world heritage regime has a strong potential to attract funding from developed countries to developing countries, in order to protect some of the world's most spectacular natural and cultural properties. This may be done via the mechanism outlined in Article 22 of the World Heritage Convention, which provides for the various forms of assistance that a State can grant to another State via the World Heritage Fund, including "studies concerning the artistic, scientific and technical problems raised by the protection, conservation, presentation and rehabilitation of the cultural and natural heritage", or the "supply of equipment which the State concerned does not possess or is not in a position to acquire". This approach complements the climate change regulatory regime and would lead to the fulfilment of obligations contracted under Article 3(5) of the UNFCCC, according to which States "cooperate to promote a supportive and open international economic system that would lead to sustainable economic growth and development in

88 The list of the States Parties to the UNFCCC and the Kyoto Protocol is available at <unfccc.int>.

89 See the Energy and Research Institute "Adaptation to Climate Change in the Context of Sustainable Development, Background Paper for Climate Change and Sustainable Development: a Workshop to Strengthen Research and Understanding" (7-8 April 2007) at 1 <www.un.org>.

90 World Heritage Committee *Issues*, above n 44, Annex 4 at 55.

all Parties, particularly developing country Parties", as well as under Article 10(c) of the Kyoto Protocol, which provides that States cooperate in the "diffusion […] transfer of, or access to environmentally sound technologies, know-how, practices and processes pertinent to climate change, in particular to developing countries".

Finally, adaptation and on-site mitigation measures concerning world heritage forests, which currently cover over 77 million hectares across various bio-geographic areas and constitute about half of the Natural Heritage sites (100 out of 211), may provide a consistent contribution to the general mitigation of global warming effects. In fact, since forests play a decisive role in capturing and storing carbon, on-site measures adopted under the World Heritage Convention perfectly integrate existing mechanisms aimed at the conservation of forests and the enhancement of forest carbon stocks, such as the UN Programme "Reducing Emissions from Deforestation and Forest Degradation" (REDD).[91]

In practice, however, the taking of adaptation and on-site mitigation measures is conditional upon a clear recognition of climate change as a danger to world heritage sites. This is still far from being generally established in the official documents of the World Heritage Committee, though a case-by-case recognition is quickly emerging. Furthermore, adaptation and on-site mitigation measures alone are likely to be wholly insufficient to face a global phenomenon such as climate change.[92] Detailed on-site measures, for instance, have been adopted to preserve the outstanding universal value of the Waterton Glacier International Peace Park, by using alternative fuel buses as shuttles for employees and increasing energy efficiency in park buildings, but their mitigating impact is infinitesimal.[93]

91 See UNESCO World Heritage Centre "Adapting to Change: the State of Conservation of World Heritage Forests in 2011" (2011) <whc.unesco.org> at 5 and following. In this regard, it must also be noted that measures aiming to protect world heritage forests from effects other than those of climate change, for instance war, indirectly contribute to mitigate global warming (see Baldini, above n 5, at 120 and following). On the UN REDD Programme see <www.un-redd.org>.

92 See, for instance, Colin Long and Anita Smith "Cultural Heritage and the Global Environmental Crisis" in Sophia Labadi and Colin Long (eds) *Heritage and Globalization* (Routledge, New York and Oxon, 2010) 173 at 174. A symposium on national parks management in the United States noted that "[e]cologically sound management requires active management and a vision which looks beyond artificial boundaries at environmental concerns, whether they originate locally, regionally, nationally, or internationally […] [National Parks] must have the capacity to respond to threats, whether they come from a dam at the park boundary, air pollution from a facility 100 miles away, or climate change caused by increased greenhouse gas concentrations in the atmosphere" (William Briggle and others *National Parks for the 21st Century – The Vail Agenda: Report and Recommendations to the Director of the National Park Service* (US National Park Service Document no. D-726, 1992/93) at 106, cited in Thorson, above n 47, at 270, note 80).

93 *Glacier National Park – Environmental Management Plan* (2006) <www.nps.gov> at 17 and following.

C. The Possibility of General Mitigation Measures

1. Arguments Favourable to the Adoption of General Mitigation Measures under the World Heritage Convention

Whether the World Heritage Convention might encompass non-site measures, that is, general mitigation remedies, which would target the protection of world heritage sites as a whole in the long term, is questionable.[94]

In this regard, it is argued that mitigation should be conceived of as compulsory under various criteria. First and foremost, the Preamble to the World Heritage Convention clearly emphasises that threats to world heritage exist both at the site level and as a consequence of exogenous forces, which is strengthened by the obligation to "integrate the protection of [...] heritage into *comprehensive planning programmes*" under Article 5(1) of the World Heritage Convention.[95] In light of this, if climate change is causing deterioration of world heritage sites, it is certainly arguable that extensive mitigation would be one of the "appropriate" legal, scientific, and technical undertakings under Article 5(d) of the World Heritage Convention.[96] General mitigation might also be justified under Article 4 of the World Heritage Convention, which sets out the duty for States Parties to do "all [they] can" for "ensuring the identification, protection and transmission to future generations of the cultural and natural heritage".[97] In addition, the understanding of Articles 4, 5 and 6 of the World Heritage Convention as referring to "any activity that detracts from the integrity of authenticity of the values of a world heritage property" calculated "in a hundred, or indeed in a thousand years time" may easily encompass general mitigation of GHG emissions.[98]

Furthermore, mitigation is invoked according to the obligation under Article 6(3) of the World Heritage Convention "not to *deliberately* cause harm" to other States' sites of outstanding universal value.[99] In fact, GHG emissions could be characterised as deliberate state acts resulting in deterioration of other States' world heritage properties, which is relevant under the "duty not

94 Though adaptation and general mitigation might sometimes overlap, for example, in the case of local reforestation acting as a carbon sink, the issue of general mitigation as such remains problematic. Due to a "time-scale mismatch" between mitigation measures and eventual results, even if the world community did implement substantially effective measures to reduce GHG emissions, it will take many decades before there are discernible effects because of the inertia of the climatic system (Roger Pielke Jr and others "Lifting the Taboo on Adaptation" (2007) 445 Nature at 597).

95 Emphasis added. See Burns, above n 47, at 161.

96 Thorson, above n 47, at 260; Thorson, above n 66, at 160.

97 Anna Huggins "Protecting World Heritage Sites from the Adverse Impacts of Climate Change: Obligations for States Parties to the World Heritage Convention" (2007) 14 Australian International Law Journal 121 at 125.

98 Boer and Wiffen, above n 10, at 86.

99 Emphasis added.

to cause transboundary harm".[100] This claim was explicitly put forward in the petition concerning the Belize Barrier Reef, which denounced the "*deliberate emission* of high levels of greenhouse gases".[101]

Based on these premises, since the World Heritage Convention was designed to protect the world's natural and cultural heritage against all threats, both at the time of its adoption in 1972 and in the future, it ought to provide the basis for general pre-emptive measures against climate change.[102] Within such a framework, mitigation should take place according to the principle of common but differentiated responsibility, obliging States that historically accumulated higher emissions to carry a heavier reduction burden.[103] This would take place under Article 4 of the World Heritage Convention, which provides that a State Party must protect world heritage sites "to the utmost of its own resources", and under Article 5 of the World Heritage Convention, which specifies that States must endeavour to undertake appropriate measures "in so far as possible".[104]

It will also be noted that the effects of global warming may be classified as "*specific* dangers" that justify the inscription of sites of outstanding universal value on the List of World Heritage in Danger under Article 11(4) of the World Heritage Convention.[105] In this respect, though climate change itself, which is the target of general mitigation measures, is a rather comprehensive and underpinning phenomenon, it seems nevertheless to fulfil the criteria required for the inscription of properties on the List of World Heritage in Danger under the Operational Guidelines for the Implementation of the World Heritage Convention, insofar as it can be regarded as a "serious and specific danger", requiring "major operations necessary for the conservation of [a] property".[106] Moreover, climate change might be classified as a "cataclysm" or a "calamity" according to Article 11(4) of the World Heritage Convention,[107] which would justify "major operations". However, this observation is not decisive for motivating the adoption of general mitigation measures under the World Heritage Convention, given that such remedies might be justified simply because of

100 Huggins, above n 97, at 129; Thorson, above n 66, at 149.

101 See the *Belize Petition*, above n 23, at 31. Emphasis added.

102 See Huggins, above n 97, at 130 and following.

103 North American and European States take the lead in GHGs emission, but, if a per-capita criterion is chosen, even if those States still rank very high, the lead is taken by India, China and Brazil (see Gerhard Loibl "The Evolving Regime on Climate Change and Sustainable Development" in Nico Schrijver and Friedl Weiss (eds) *International Law and Sustainable Development: Principles and Practice* (Martinus Nijhoff Publishers, Leiden and Boston, 2004) 97 at 112; Jean-François Pulvenis "The Framework Convention on Climate Change" in Luigi Campiglio and others (eds) *The Environment after Rio – International Law and Economics* (Graham & Trotman, Martinus Nijhoff Publishers, London and Boston, 1994) 71 at 73-74).

104 Thorson, above n 66, at 168-169.

105 See above section III.B.

106 See Operational Guidelines, above n 57, at [177(b) and (c)].

107 Pulvenis, above n 103, at 74.

the inscription of sites of outstanding universal value on the World Heritage List, in light of the knowledge that many such sites are being or will in the future be affected by climate change.[108]

2. Interpretative Issues

Arguments favourable to general mitigation measures under the World Heritage Convention are not uncontroversial. In particular, according to the principle of sovereignty, Articles 4 and 5 of the World Heritage Convention provide that each State Party assumes the primary responsibility for the preservation and protection of world heritage sites situated "on its territory", which might exclude the cooperative framework required by mitigation.[109] However, in this regard, the tension between sovereignty and cooperation underpinning the World Heritage Convention must be kept in mind.[110] Cooperation might especially be based on the principle that some natural and cultural resources located within state boundaries are the "common concern of humankind" and should be preserved for future generations,[111] which is also stressed by the word "heritage", entailing the existence of a value that transcends national boundaries.[112] In this vein, Articles 4 and 6 of the World Heritage Convention as well as the Preamble could provide an explicit or implicit basis for a cooperative framework.[113]

As to Article 6(3), the argument that GHG emissions are "deliberate measures", which might damage heritage sites located in third States, cannot be so easily accepted. In fact, emitting GHGs is general conduct linked to economic growth rather than a "measure", which defines a positive legislative act. In order to curb GHG emissions, States may adopt positive legislative measures, but, technically speaking, not curbing GHG emissions is an omission, which does not really match the requirement of positive measures referred to in Article 6(3).[114] As a consequence, the expression "*undertake not to* take [effectively an omission] any deliberate measure which might damage world heritage" can be equated to the "*obligation to forego* actions [omission] that might damage world heritage",[115] but this is different from mitigation, which entails *positive measures* to limit the impact of climate change on world

108 See World Heritage Committee, above n 62.

109 See UNFCCC, above n 20, Preamble.

110 On the tension between state sovereignty and duty to cooperate see Francioni, above n 10, at 5-6.

111 In the words of the former Chairperson of the World Heritage Committee, Ralph Slayter: "There are some parts of the world's natural and cultural heritage which are so unique and scientifically important to the world as a whole that their conservation and protection for present and future generations is not only a matter of concern for individual nations but for the international community as well" (Ralph Slayter "The Origin and Evolution of the World Heritage Convention" (1983) 12 Ambio at 138). See also Burns, above n 47, at 156.

112 Yusuf, above n 4, at 27. See also Marc Askev "The Magic List of Global Status" in Labadi and Long, above n 92, at 29.

113 Thorson, above n 47, at 264.

114 On the nature of positive obligations under Article 6(3) see Carducci, above n 70, at 126.

115 Thorson, above n 47, at 265.

heritage sites. Therefore, one might challenge the assumption that, if a State is aware of the widely available information that climate change affects a wide range of world heritage sites, then deciding not to take effective steps to curb GHGs might be construed as a deliberate measure. In this vein, in a position paper filed with the World Heritage Committee opposing the petitions relating to climate change in advance of the Meeting of Experts in 2006, the United States of America pointed out that "failure to take an action, such as not reducing greenhouse gases, does not constitute a 'deliberative [sic] measure which might damage a site' under Article 6(3) [of the World Heritage Convention]".[116]

However, even by applying the expression "deliberate measures" under Article 6(3) of the World Heritage Convention to the emission of GHGs beyond sustainable limits,[117] it would still be difficult to demonstrate that such measures are "deliberate." This is especially true of States respecting their emission limits under the Kyoto Protocol and the foreseeable post-Kyoto instrument envisaged by the Durban Outcomes and the Doha Climate Gateway. Even further, it would be complicated to prove that GHG emissions "deliberately" aim to damage world heritage sites. In fact, GHG emissions are a side effect of a wide range of human conduct, including the burning of fossil fuels (oil, gas and coal), agricultural activities, the release of decayed organic matters in refuse tips, the use of aerosol sprays and air-conditioning,[118] which arguably do not primarily aim to damage world heritage sites. It seems therefore difficult to dismiss critiques addressing Article 6(3) of the World Heritage Convention simply as a "specious, end-run argument based on semantics".[119]

From the standpoint of imputation, the most relevant stationary sources of GHG emissions generally come from private industries in the energy sector,[120] whose conduct can hardly be attributed to the State under international law. In fact, acts of private actors can be attributed to States only under the criteria of "instruction, direction and control", according to Article 8 of the International Law Commission's Articles on State Responsibility.[121] The International Court of Justice (ICJ) has further provided a variable but quite restrictive interpretation of this parameter in three leading cases, which relate to conflict situations. First, in *Military and Paramilitary Activities in and against Nicaragua*, the ICJ applied the

116 See United States "Position Paper on Climate Change with Respect to the World Heritage Convention and World Heritage Sites Filed with the World Heritage Committee in Advance of the Experts Meeting" (2006) <www.elaw.org> at 2.

117 Thorson, above n 47, at 267.

118 The anthropogenic contribution to GHG increase in the atmosphere is the following: energy, 46%; CFCs, 24%; forestry, 18%; agriculture, 9%; other, 3% (WTO-UNEP, above n 1, at 27; Myles Allen and others "Scientific Challenges in the Attribution of Harm to Human Influence on Climate" (2007) 155 (6) University of Pennsylvania Law Review at 1353; Pulvenis, above n 103, at 73).

119 Thorson, above n 47, at 267; Thorson, above n 66, at 167.

120 See above n 118.

121 See International Law Commission *Articles on Responsibility of States for Internationally Wrongful Acts* (A/56/10, 2001) at 103.

extremely restrictive "effective control" test in order to decide on the attribution to the United States of the conduct of the rebel group Contras in violation of human rights during military and paramilitary operations conducted in Nicaragua. The ICJ deemed insufficient for the purposes of imputation the "financing, organising, training, supplying and equipping of the Contras, the selection of its military or paramilitary targets, and the planning of the whole of its operation".[122] Subsequently, in *Tadić* the International Criminal Tribunal for the Former Yugoslavia (ICTY) applied the broader "overall control" test based on the criterion of "equipping and financing […] coordinating or helping in the general planning".[123] Thus, the Tribunal rejected the necessity of "instructions for the commission of specific acts" and determined that conduct contrary to human rights law perpetrated by the Bosnian Serb Army was attributable to the Former Republic of Yugoslavia.[124] Finally, in the *Bosnian Genocide* case the ICJ applied the very narrow criterion of "complete dependence", based on a factual evaluation of the position of the agent as a "mere instrument" of the State.[125] As a consequence, the Court excluded the attribution to the Former Republic of Yugoslavia of genocide acts perpetrated in Bosnia by the Serbian personnel of the Republika Srpska.[126] In this vein, ultimately, only under the "overall control" test acts of private corporations emitting GHGs could be attributed to States, at least when legislative measures targeting GHG emissions exist. However, first, this parameter is quite controversial under international law.[127] Second, such a criterion was established based on conflict situations. Therefore, if nothing prevents its application outside this context, attributing to States acts primarily imputable to energy corporate entities would lead to a progressive development of international law.

3. Quantifying General Mitigation Measures

The Operational Guidelines to the World Heritage Convention envisage "appropriate co-ordination" between the World Heritage Convention and other conventions relating to the conservation of cultural and natural heritage, which include the UNFCCC.[128] Thus, if it is assumed that the World Heritage Convention obliges States to adopt general mitigation measures, the further question arises as to how they quantitatively relate to the UNFCCC regime, including the Kyoto Protocol and the foreseeable post-Kyoto regulatory instrument. In other words: is it possible to establish GHG emission limits

122 *Military and Paramilitary Activities in and Against Nicaragua (Nicaragua v United States) (Advisory Opinion)* [1986] ICJ Rep 14 at 64-65, [115].
123 *Prosecutor v Tadić (Judgment)* ICTY Appeals Chamber, IT-94-1-A, 15 July 1999 at [121-122], [131].
124 At [131] and [146] and following.
125 *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia and Herzegovina v Serbia and Montenegro) (Merits)* [2007] ICJ Rep 43, at 205, [392].
126 At [394].
127 At [406].
128 Operational Guidelines, above n 57, at [42] and [44].

under the World Heritage Convention which are more restrictive than those already existing under the UNFCCC regime? This issue raises a normative conflict, because the same act is subject to a plurality of norms.[129]

The question must be addressed in light of two principles that govern the relationship between treaties regulating the same matter in different ways within the context of fragmented international law: *lex posterior derogat legi priori*, which provides that a later legal rule prevails over a prior inconsistent one, and *lex specialis derogat legi generali*, which provides that law governing a specific subject matter overrides a law which governs the same matter more generally.[130] The former principle generally prevails when the parties to different treaties are the same,[131] otherwise, *lex prior* should prevail, given that third States must not be affected by *res inter alios acta*, that is an agreement concluded by third parties.[132] *Lex prior specialis* may nevertheless be considered in the interpretation of subsequent conventions addressing the same matter. These criteria apply when it proves impossible to resort to systemic integration, and thus read treaties as compatible,[133] which has clearly been recognised with regard to environmental obligations in the *MOX Plant* case[134] and in the *Southern Bluefin Tuna Case*.[135]

On the one hand, the World Heritage Convention, *lex prior*, regulates *all conduct* (*lex generalis*), possibly including curbing anthropogenic (and non-anthropogenic) GHG emissions that might have an adverse effect on *world heritage* (*lex specialis*). On the other hand, the UNFCCC regime, *lex posterior*, regulates *anthropogenic GHG emissions* (*lex specialis*) that have a negative impact on the *environment* (*lex generalis*), aiming to stabilise them in order to prevent "dangerous anthropogenic interference with the climate system".[136] Thus, with regard to the interest protected, it is arguable that the World Heritage Convention is *lex specialis* with respect to the UNFCCC

129 Seyed-Ali Sadat-Akhavi *Methods of Resolving Conflicts between Treaties* (Brill Academic Publishers, Leiden, 2003) at 7 and following.

130 The principles of *lex prior* and *lex superior* are irrelevant for the purpose of our analysis. For a recent analysis of the principles that govern treaty conflicts see Jan Klabbers "Beyond the Vienna Convention: Conflicting Treaty Provisions" in Ennio Cannizzaro (ed) *The Law of Treaties beyond the Vienna Convention* (Oxford University Press, Oxford, 2011) at 192; Sadat-Akhavi, above n 129, at 60 and following.

131 International Law Commission, above n 87, at [223]. See also Klabbers, above n 130, at 194.

132 International Law Commission, above n 87, at [224].

133 At [88] and [410] and following. See also above section III.B.

134 *MOX Plant Case, Ireland v the United Kingdom*, International Tribunal for the Law of the Sea, Request for Provisional Measures, Order of 3 December 2001 at [50].

135 *Southern Bluefin Tuna (New Zealand v Japan, Australia v Japan) (Jurisdiction and Admissibility)* (2000) XXIII Reports of International Arbitral Awards (RIAA) at 35.

136 See, in particular, Article 2 of the UNFCCC, which provides for the "stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system", and Article 3 of the Kyoto Protocol, which provides that States Parties "ensure that their aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases [...] do not exceed their assigned amounts". See also David Freestone "The UN Framework Convention on Climate Change, the Kyoto

regime. This approach, which is particularly applicable to adaptation and on-site mitigation measures,[137] might also justify generally applicable mitigation which is more restrictive than under the UNFCCC regime.[138]

However, even if it is assumed that the UNFCCC regime should prevail as *lex posterior*, by having regard to the time factor, or as *lex specialis*, by having regard to the content of the regulatory regime (regulated conduct), at present, in light of the insufficient results achieved, it might be largely considered a failing system. In fact, according to recent assessments, stabilising global warming in order to prevent a "dangerous interference with the climate system" entails the containment of temperatures below a 2°C rise, which is calculated to mean an effective reduction of GHG emissions of 30% to 50% by 2050.[139] This daunting task would require substantially more reductions in GHG emissions than the global community might achieve through the implementation of the Kyoto Protocol, so that current GHG emission limits are likely to prove entirely insufficient to protect sites of outstanding universal value.[140] Thus, meeting targets under climate change-specific regulation might be insufficient to satisfy States Parties' duties under Articles 4, 5 and 6 of the World Heritage Convention, especially because States must do all they can to protect world heritage "to the utmost of their own resources" (Article 4).[141] Furthermore, establishing satisfying compulsory commitments for the post-2012 period is not an easy process in light of the outcomes of the Copenhagen Accord, the Bali Action Plan, and the Cancun Outcome,[142] though the situation might change after the Durban Outcomes and the Doha Gateway, with a 25-40% reduction of aggregate GHG emissions envisaged by 2020.[143] In particular, as to the post-Kyoto regime, it is difficult to see what measures will effectively be taken in light of the provisions adopted in Durban, including the launch of a "process to develop a protocol, another legal instrument or a legal outcome under the Convention [UNFCCC] applicable to all Parties".[144] In fact, this wording is vague, especially the reference to "another legal instrument", and the expression "applicable to all Parties" does not make clear whether or not all countries, both developed

Protocol, and the Kyoto Mechanisms" in David Freestone and Charlotte Streck (eds) *Legal Aspects of Implementing the Kyoto Protocol Mechanisms – Making Kyoto Work* (Oxford University Press, Oxford, 2005) 3 at 4 and following; Pulvenis, above n 103, at 93 and following.

137 See above section III.B.

138 See Burns, above n 47, at 160.

139 WTO-UNEP, above n 1, at 32-33. See also Thorson, above n 47, at 266; Verheyen, above n 66, at 55. The situation might be worsened by phenomena such as methane emission from plant debris until now frozen in the permafrost (see Justine Gillis "In Permafrost's Stirring, a Planet in Peril" *International Herald Tribune* (New York, 17-18 December 2011) at 1 and 5).

140 William Burns and Hari Osofsky "Overview: the Exigencies that Drive Potential Causes of Action for Climate Change" in Burns and Osofsky, above n 47, 1 at 20.

141 Thorson, above n 66, at 165.

142 See Clarke, above n 1, at 12 and following.

143 UNFCCC Conference of the Parties, Durban, above n 20, Preamble.

144 UNFCCC Conference of the Parties, Durban, above n 3, at [2].

and developing, will share common, legally binding emission targets. In this respect, the Doha Climate Gateway is more ambitious, and envisages the adoption of a "universal climate agreement by 2015, which will come into effect in 2020".[145] However, these are *de iure condendo* hypothesis and their effectiveness cannot be currently verified. It might thus be argued that, when a regulatory regime fails, States should resort to alternative regulatory means, so that it would be reasonable to enhance climate change general mitigation measures under the World Heritage Convention in order to fill the loopholes of the UNFCCC regime.[146]

In any case, it must be borne in mind that schematic rules such as *lex posterior* and *lex specialis* are just basic references to resolve treaty conflicts, but practice is much more diverse than theory.[147] Therefore, finally, as in the case of adaptation and on-site mitigation measures, the best approach may be to assume that there is no absolute incompatibility between the World Heritage Convention, on the one hand, and the UNFCCC regime, on the other hand, but rather a partial overlap, so that systemic integration should apply, according to a mutually supportive interpretation of obligations arising under the two systems.[148] The validity of such an integrated view seems to be confirmed by the practice in the matter of climate change emerging at the sub-national, national and international level, since a variety of cases have been brought to the attention of judicial and non-judicial bodies based on a wide array of legal instruments, ranging from the American Declaration of the Rights and Duties of Man[149] to the Nigerian Constitution.[150] This approach is also confirmed by the fact that there is no explicit language that raises an issue of inconsistency between the World Heritage Convention and the UNFCCC regime,[151] unlike, for instance, Article XIV(4) of the Convention on International Trade in Endangered Species (CITES),[152] which provides that its parties are relieved of trade obligations for marine species under Appendix II if they are also parties to a marine conservation agreement in force at the time CITES entered into force. Furthermore, in the case of overlap between environmental treaties and other regimes, "mutual support" is regarded as the best solution.[153]

145 Doha Climate Gateway <unfccc.int>.
146 Burns, above n 47, at 160-161; Thorson, above n 47, at 267.
147 Sadat-Akhavi, above n 129, at 62.
148 Burns, above n 47, at 159-160; International Law Commission, above n 87, at [220].
149 "Petition to the Inter American Commission on Human Rights Seeking Relief from Violations Resulting from Global Warming Caused by Acts and Omissions of the United States" (7 December 2005) <www.inuitcircumpolar.com>.
150 *Gbemre v Shell Petroleum Development Company Nigeria Limited and Others*, Federal High Court of Nigeria, FHC//B/CS/53/05, 14 November 2005. See also Michael Faure and Marjan Peeters *Climate Change Liability* (Edward Elgar Publishing, Cheltenham, Northampton, 2011); Burns and Osofsky, above n 47.
151 International Law Commission, above n 87, at [268].
152 Convention on International Trade in Endangered Species 993 UNTS 243 (adopted 3 March 1973, entered into force 1 July 1975).
153 International Law Commission, above n 87, at [277].

Within this framework, it is at least conceivable that a regime of advanced and generally applicable mitigation measures may be put into place under the World Heritage Convention.[154]

According to these premises, under the World Heritage Convention, the endeavour of States to take "*appropriate* legal, scientific, technical, administrative and financial measures" (Article 5(d))[155] would impose an obligation to curb GHG emissions beyond the limits established under the UNFCCC regime, including the Kyoto Protocol and the foreseeable post-Kyoto regulatory instrument, and entailing, if not the reduction, at least the necessity of halting the increase of GHGs.[156] In fact, States have discretion in deciding what measures are "appropriate" for the protection and conservation of their world heritage sites, but they must act in good faith (Article 26 of the VCLT), which would imply the adoption of a comprehensive range of effective remedies as part of intensive national mitigation strategies.[157] Therefore, the World Heritage Committee should develop studies in order to amend the World Heritage Convention and establish GHG emission constraints sufficient to preserve world heritage sites. In this regard, the 2009 petition addressing black carbon, an agent which is not included in the first Kyoto commitment period and is unlikely to be regulated under the foreseeable post-2012 commitment periods, might provide a persuasive argument to assert that the World Heritage Convention should not defer to the UNFCCC regime.[158]

Following this logic, since it is not at all presumable that the UNFCCC regime has a universal scope, and thus establishes a general obligation for States to curb their upward emission trends,[159] strengthening general mitigation measures existing under the UNFCCC regime according to the World Heritage Convention would possibly extend the obligation to curb GHG emissions to States that are currently not parties to the UNFCCC and/or the Kyoto Protocol. The result would be far from being insignificant, if one thinks that ultimately the United States, which is the major GHG emitter and has not yet ratified the Kyoto Protocol, and Canada, which recently resigned from the Kyoto Protocol, would be compelled to abide by GHG emission limits far beyond those established under the Kyoto regime. Furthermore, if it was assumed that obligations under the World Heritage Convention have a universal scope, GHG emission limits established under the Convention would be compelling upon those subjects that are currently parties to the UNFCCC regime, but not to the World Heritage Convention, in particular the European Union (EU).

154 Burns, above n 47, at 160-161.
155 Emphasis added.
156 Thorson, above n 47, at 262; Thorson, above n 66, at 146.
157 Thorson, above n 47, at 262; Huggins, above n 97, at 133 and following.
158 Burns, above n 47, at 162-163.
159 See Cristina Voigt "State Responsibility for Climate Change Damages" (2008) 77 Nordic Journal of International Law 1 at 9 and following.

IV. A Critical Assessment of the Normative Relationship between the World Heritage Convention and the UNFCCC Regime

A. Formal and Systemic Problems

The adoption of on-site mitigation and adaptation measures under the World Heritage Convention is fully consistent with the UNFCCC regime, not only from a substantive viewpoint, but also from a procedural standpoint. In fact, specific measures can be undertaken on a case-by-case basis according to the procedures established by Articles 8 and following of the World Heritage Convention, via the World Heritage Committee, which receives and analyses requests for international assistance formulated by States Parties (Article 13(1)), decides on the action to be taken and determines the nature and the extent of assistance (Article 13(3)), including studies of the artistic, scientific and technical problems, provision of experts, supply of equipment and all acts provided for under Articles 22-24 of the Convention.

In contrast, enhancing general mitigation within the framework of the World Heritage Convention would entail the establishment of more precise GHG emission limits for States Parties, which raises the problem of the means to achieve such an objective. In fact, this change from the standpoint of primary rules could not be taken seriously without being complemented by a significant revision of secondary rules. To put it simply, establishing general mitigation measures under the World Heritage Convention would be tantamount to a structural reform and thus would require a comprehensive reformulation of not only primary substantive GHG emission limits, but also of the corresponding sanctions in the case of a breach and related procedures of control, judgment and enforcement. Furthermore, implementation instruments such as clean development mechanisms and joint implementation measures should be created.[160] This raises formal and structural issues.

Formally, since it is difficult to envisage the achievement of a direct change in the text of the World Heritage Convention, GHG emission limits could theoretically be established through a Protocol, or another legal instrument, which would set out a sort of framework in this regard, in the same way as the Kyoto Protocol and the foreseeable post-Kyoto legal instrument with respect to the UNFCCC.[161] In contrast, modifying the Operational Guidelines to the Convention does not seem sufficient to support such a relevant change.

From the structural viewpoint, the implementation of the World Heritage Convention should be examined with a view to introducing particular sanctions in the case of a transgression of general mitigation measures, such

160 For an overview of implementation measures under the Kyoto Protocol see Freestone, above n 136, at 11 and following.

161 The convention-protocol technique is a sophisticated approach, which is adopted to regulate complex matters. See Bharat Desai *Multilateral Environmental Agreements* (Cambridge, Cambridge University Press, 2010) at 76 and following.

as the deduction of emission quotas. In fact, currently the Convention does not envisage real sanctions, but is based on the logic of assistance in protecting world heritage sites. Thus, it only provides for the World Heritage Committee's support to States Parties under Article 13 in case of need, which may fit well with on-site measures, but would be totally inappropriate as a basis to implement general mitigation measures. Institutionally, the ultimate result would be an internal reshaping of the organs currently existing under the World Heritage Convention, or, at least, of their functions, and the re-thinking of the external relationship between the organs established by the World Heritage Convention on the one hand, and the institutions and procedures existing under the UNFCCC regime on the other.

Finally, it must be noted that the inscription of sites on the World Heritage List is voluntary, and thus States can delete their own sites if they wish.[162] As a consequence, the current World Heritage Convention framework is unsuitable to impose general mitigation measures upon States: albeit the language of the Convention may be considered binding, the ability of States to withdraw sites from the World Heritage List seriously undermines the possibility of envisaging the World Heritage Convention as a response to climate change in terms of general mitigation. Therefore, if the World Heritage Convention was to be considered a serious instrument to impose general mitigation measures, this option should be removed, which would nevertheless entail another major amendment.

B. The Intersection between Specific Treaty Regimes and General Treaty Law: Clausula Rebus Sic Stantibus

The above arguments must also be tested by extending the scope of the analysis to the intersection between specific treaty regimes and the general rules governing the law of treaties, especially as codified under the VCLT.

In particular, climate change action under the World Heritage Convention might constitute a ground for treaty termination, suspension or revision under Part IV, Section III of the VCLT. More specifically, a conflict could arise with the customary law rule *conventio omnis intellegitur clausula rebus sic stantibus*. This notion, which means that any agreement is to be understood as being based on the assumption of things remaining as they were at the time of its conclusion,[163] has not yet been taken into account in the scholarly and institutional debate, but climate *change* might fulfil the exceptional requirements to constitute a "fundamental *change* of circumstances" under Article 62 of the VCLT.

162 Article 11(3) of the World Heritage Convention provides: "The inclusion of a property in the World Heritage List requires the consent of the State concerned."

163 For a comprehensive analysis, see Malgosia Fitzmaurice and Olufemi Elias *Contemporary Issues in the Law of Treaties* (Eleven International Publishing, Utrecht, 2005) at 174 and following; Athanassios Vamvoukos *Termination of Treaties in International Law* (Clarendon Press, Oxford, 1985) at 3 and following.

Article 62 provides:

> 1. A *fundamental change of circumstances* which has occurred with regard to those existing at the time of the conclusion of a treaty, and which was *not foreseen by the parties*, may not be invoked as a ground for terminating or withdrawing from the treaty unless:
> (a) the existence of those circumstances constituted *an essential basis of the consent* of the parties to be bound by the treaty; and
> (b) the effect of *the change is radically to transform the extent of obligations* still to be performed under the treaty.
> …
> 3. If, under the foregoing paragraphs, a party may invoke a fundamental change of circumstances as a *ground for terminating or withdrawing from a treaty* it may also invoke the change as a ground for *suspending the operation of the treaty*.[164]

Based on the time factor, this rule establishes a restrictive condition to the fundamental rule "*pacta sunt servanda*", according to the assumption that duties are to be maintained only to the extent that the underpinning facts remain sufficiently unchanged.[165]

The set of premises outlined in Article 62 of the VCLT for the applicability of the doctrine *rebus sic stantibus* must be read as interrelated, rather than separate. However, they must not exist cumulatively insofar as any test may in itself be sufficient to prove that the object and purpose of a given treaty are withdrawn in a specific case.[166]

1. Climate Change as a Fundamental Change of Circumstances Unforeseen by the Parties

In light of Article 62 of the VCLT, the effect of global warming on world heritage sites is an objective "state of facts" or a "situation" that may constitute a "change of circumstances" relevant to the World Heritage Convention and to the time when it was adopted, which was in 1972.[167] Indeed, this condition is temporally pertinent,[168] which is also confirmed by a literal interpretation, whereby the expression "climate change" perfectly fits with the wording of Article 62 of the VCLT.

Furthermore, climate change is likely to have a substantial and considerable importance, and thus represents a "fundamental", that is "radical", alteration, that takes place in the form of the positive occurrence

164 Emphasis added.

165 See Pierre-Marie Dupuy "Evolutionary Interpretation of Treaties: between Memory and Prophecy" in Cannizzaro, above n 130, 123 at 124; Ian McTaggart Sinclair *The Vienna Convention on the Law of Treaties* (Manchester University Press, Manchester, 1984) at 192. But see Vamvoukos, above n 163, at 216, according to which there would be "no specific relationship" between the rules *pacta sunt servanda* and *rebus sic stantibus*.

166 See Vamvoukos, above n 163, at 195.

167 Mark Villiger *Commentary on the 1969 Vienna Convention on the Law of Treaties* (Martinus Nijhoff Publisher, Leiden and Boston, 2009) at 771; Olivier Corten and Pierre Klein *Les conventions de Vienne sur le droit des traités – Commentaire article par article* (Bruylant, Bruxelles, 2006) at 2248-2251.

168 As it was the political change, that is, the end of the cold war, that led in 2002 the United States to withdraw from the 1972 Anti-Ballistic Missile (ABM) Treaty, arguably under the doctrine *rebus sic stantibus* (see Fitzmaurice and Elias, above n 163, at 187).

of an event.[169] Since Article 62 of the VCLT does not provide a definition of the adjective in issue, the qualification of a change of circumstances as "fundamental" depends on a particular case.[170] Now, objectively, given the devastating impact that it might have on world heritage sites, global warming could be reasonably classified as a "fundamental" change. In fact, it has been remarked that climate change poses a threat of "unprecedented proportions", whose "ultimate consequences could be second only to nuclear war".[171] In this respect, although specific indirect effects of GHG emissions may be formally included among the "specific threats" to world heritage sites under Article 11(4) of the World Heritage Convention,[172] it must be noted that their *quantitative* impact is enormously strengthened by global warming, so that they cause significant alteration in the geographical environment.[173] Such a view may be reinforced by the fact that "massive pollution of the atmosphere" was considered a "Crime of State" in the original ILC Project on State Responsibility, in the same way as aggressive war,[174] which highlights the gravity of the phenomenon in issue and its importance within the international legal context.[175] As a consequence, subjectively, it is reasonable to assume that the motives and expectations that pushed the parties to subscribe to the World Heritage Convention could encompass on-site measures, which are limited *ad hoc* measures, but not general pre-emptive measures against climate change, because of their comprehensive scope.[176]

Finally, while it is accepted that climate change existed in 1972 by reason of its nature as a historically progressive phenomenon and that the GHG effect has been noticed since the second half of the 19th century,[177] it can be reasonably maintained that in 1972 the gravity of the impact of GHG *anthropogenic* emissions on global warming was not perceived as critically as it is today, and was "unforeseen" in terms of its effects at that time within the framework of the

169 Vamvoukos, above n 163, at 188-189.

170 At 187; Villiger, above n 167, at 771; Corten and Klein, above n 167, at 2251-2252.

171 Environment Canada *The Changing Atmosphere, Implication for National Security: Conference Statements* (Toronto, Canada, June 27-30, 1988), cited in Pulvenis, above n 103, at 75.

172 See above sections III.B and III.C.1.

173 Villiger, above n 167, at 771. In order to have an idea of the indirect effects of climate change, it suffices to think that its most significant effect, sea level rise, is estimated to be 65 centimetres by the end of the 21st Century (see Pulvenis, above n 103, at 74). See also National Geographic "Global Warming Effects Map" <environment.nationalgeographic.com>.

174 See International Law Commission *Report to the General Assembly* A/31/10 (1976-II-1) *Yearbook of the International Law Commission* at 54.

175 It is worth mentioning that the outbreak of war in the Former Yugoslavia has been considered a fundamental change of circumstances with regard to the operation of a Cooperation Agreement between the EC (now the EU) and Yugoslavia by the European Court of Justice (ECJ – now the Court of Justice of the European Union) in the case C-162/96, *Racke v Haupzollant Mainz*, Judgment of 16 June 1998 at [53]-[57] <eur-lex.europa.eu>; see also Fitzmaurice and Elias, above n 163, at 183-185).

176 Vamvoukos, above n 163, at 190.

177 IPCC, above n 1, at Chapter 1.2; Pulvenis, above n 103, at 72.

World Heritage Convention.[178] In fact, when the World Heritage Convention was adopted, climate change was not yet regarded as an imminent global threat,[179] and thus the drafters of the Convention could not have been expected to address this peril. In the 1960s and 1970s conclusive proof of the threat posed by climate change began to be gathered systematically, but it is only as a follow up to a set of international conferences in the second half of the 1980s that decisive progress was made towards a full knowledge of the impact of human activity on global warming within the framework of sustainable development.[180] This followed a drastic increase in GHG anthropogenic emissions occurring since 1978, doubling those produced since 1751.[181] Politically, until the 1990s, it was deemed unrealistic to regulate involuntary climate change induced by human conduct, so that global warming remained outside the scope of international law.[182] Furthermore, it must be remarked that the possibility of foreseeing the change is not relevant for the purposes of the application of the doctrine *rebus sic stantibus*.[183]

In this respect, the Operational Guidelines to the World Heritage Convention state that "since the adoption of the *Convention* [World Heritage Convention] in 1972, the international community has embraced the concept of sustainable development", to which "the protection and conservation of the natural and cultural heritage significantly contribute" (paragraph 6).[184] Moreover, the Guidelines provide that "world heritage properties may support a variety of ongoing and proposed uses that are ecologically and culturally sustainable".[185] Nevertheless, the concept of "sustainable development" was clearly elaborated only in 1987 in the Brundtland Report[186] and subsequently embodied in the Operational Guidelines in 1994. Therefore, it is inevitably missing in the World Heritage Convention and was ambiguously mentioned by the World Heritage Committee for the first time in the 2002 Budapest Declaration.[187] Thus, by considering as threats the "social and economic

178 Villiger, above n 167, at 773 and following; Corten and Klein, above n 167, at 2253-2254.

179 See IPCC, above n 1, Chapter 1.3.

180 A particularly important step in this process was the Toronto Conference on the Changing Atmosphere (27-30 June 1988), followed, in November 1988, by the establishment of the IPCC, which produced its first Report in August 1990.

181 Burns and Osofsky, above n 140, at 4.

182 Alexandre Kiss and Dinah Shelton *Guide to International Environmental Law* (Martinus Nijhoff Publishers, Boston, 2007) at 42 and following; Freestone, above n 136, at 3-4; Pulvenis, above n 103, at 71-72.

183 Vamvoukos, above n 163, at 189.

184 Operational Guidelines, above n 57, at 6. See also Boer and Wiffen, above n 10, at 79-80, according to which the terminology "conservation" repetitively employed in the World Heritage Convention (for example, Preamble, Article 2 and Article 4) and "transmission to future generations" (Article 4) "presaged the idea of sustainable development".

185 Operational Guidelines, above n 57, at 119.

186 See UN World Commission on Environment and Development *Report on Environment and Development: Our Common Future* Annex 1 to Doc A/42/427 (1987).

187 World Heritage Committee *The Budapest Declaration on World Heritage* (Doc WHC-02/CONF.202/5, 2002) at 5, which mentions the "sustainable conservation of world heritage properties."

conditions which aggravate the situation [of world heritage] with even more formidable phenomena of danger or destruction", paragraph 1 of the Preamble to the World Heritage Convention can be certainly understood as referring to the rapid process of industrialisation and urbanisation that took place in the 1960s,[188] but it is at least doubtful that it might encompass the phenomenon of global warming.

2. The Essential Basis of Consent and the Extent of the Obligations Originally Contracted

It is reasonable to assume that the lack of (knowledge of) global warming constituted an "essential basis of consent" for the World Heritage Convention under Article 62(1)(a) of the VCLT, whereby "consent" refers to the common intention (*consensus*) of the parties and encompasses a sum of factors such as the political, economic, legal and other circumstances that composed the historical background ("spirit of the time") when the treaty was concluded.[189]

Though any consideration in this respect is necessarily retrospective and conditional, climate change is such a relevant circumstance that, if present in the mind of the parties, it might have influenced the conclusion of the treaty and led to drafting it in different terms.[190] In practice, if States that did not subscribe to the Kyoto Protocol, like the United States,[191] had foreseen the subsequent change, they would probably have not subscribed to the World Heritage Convention or would have insisted on less comprehensive language.[192] As to other States that did not ratify the Kyoto Protocol immediately, for instance Singapore, Switzerland and Canada,[193] it is possible to infer that they might at least have raised issues about an inclusive World Heritage Convention encompassing climate change obligations, in particular as regards general mitigation. Finally, one might wonder what position would have been taken by States such as India, China and Russia, which currently do not have GHG constraints but might face general mitigation measures in the future Kyoto and post-Kyoto commitment periods.[194]

It is also logical to argue, in accordance with Article 62(1)(b) of the VCLT, that the effect of climate change "is radically to transform the extent of the obligations still to be performed" under the World Heritage Convention. Such an assumption is not viable with respect to adaptation and on-site mitigation measures, but could certainly be more applicable to general mitigation measures. In fact, whereas on-site pre-emptive and responsive measures are limited *ad hoc* remedies, general pre-emptive measures would entail a radical

188 Francioni, above n 5, at 12.
189 Vamvoukos, above n 163, at 192-194.
190 Villiger, above n 167, at 774.
191 Scott Hajost "The Role of the United States" in Campiglio and others, above n 103, at 15.
192 See United States, above n 116, at 5-6.
193 Singapore became a party to the Kyoto Protocol in 2006, Switzerland in 2003 and Canada in 2002.
194 Clarke, above n 1, at 49 and following and 63 and following.

economic and social change.[195] This is due to the fact that climate change is the result of a huge variety of aggregate socio-economic activities that contribute to an increased concentration of GHGs in the atmosphere and cannot be identified as independent sources of pollution.[196] Thus, general mitigation measures seem to "increase the burden of the obligations to be executed to the extent of rendering the performance something essentially different from that originally undertaken", as requested by the ICJ in the *Fisheries case*.[197] In other words, general mitigation measures are likely to impose on the parties an "intolerable burden" or an "unreasonable sacrifice" that is not provided for in the treaty, and thus could make the motives that induced a party to enter into the agreement less compelling or irrelevant.[198] This seems all the more correct by thinking that including general mitigation measures within the obligations established by the World Heritage Convention would lead to a radical reshaping of the framework of secondary rules, including sanctions and related procedures.[199]

With respect to Article 62(1)(a) of the VCLT it may also be noted that, in spite of the collaborative framework outlined in Articles 4 and 6 of the World Heritage Convention, the main responsibility for the conservation of world heritage sites still remains with individual States under the principle of sovereignty, in particular according to Article 5 of the Convention. This approach fits well with adaptation and on-site mitigation measures, but general mitigation measures are by nature cooperative on a global scale, and thus they are likely to render the performance of the obligations under the World Heritage Convention essentially different from what was originally undertaken.[200]

3. Interpretative Issues and Consequences

This analysis shows that, whereas adaptation and on-site mitigation measures do not raise any inconsistency as regards the principles of treaty law, general mitigation measures could be problematic in light of the doctrine of the fundamental change of circumstances under Article 62 of the VCLT. The reasoning might be stringent enough to pass the high threshold established by the ICJ in *Gabcikovo-Nagymaros Project*, where the Court stated that conditions under Article 62 of the VCLT must be interpreted restrictively, in order not to violate the principle *pacta sunt servanda*.[201] This is reflected in the language of Article 11(4) of the World Heritage Convention, according to which, whereas adaptation and on-site mitigation measures can

195 Freestone, above n 136, at 3.
196 Pulvenis, above n 103, at 73.
197 See *Fisheries Jurisdiction (United Kingdom v Iceland and Federal Republic of Germany v Iceland) (Merits)* [1973] ICJ Rep 3 at 65, [43].
198 See Fitzmaurice and Elias, above n 163, at 180; Vamvoukos, above n 163, at 194.
199 See above section IV.A.
200 Villiger, above n 167, at 774-775.
201 *Gabcikovo-Nagymaros Project (Hungary/Slovakia) (Merits)* [1997] ICJ Rep 7 at 64-65, [104]. See also Villiger, above n 167, at 770; Fitzmaurice and Elias, above n 163, at 181-183.

be regarded as responses to specific indirect effects of global warming, for instance water level rise, general mitigation measures must be considered comprehensive responses to climate change as such, envisaged as a "calamity" or a "cataclysm".[202]

Furthermore, imposing significant GHG reduction targets under the World Heritage Convention, through an extensive interpretation of its quite comprehensive language, might be contrary to Article 31(1) of the VCLT, according to which a treaty must be interpreted "in light of its object and purpose". By "object and purpose" it is usually meant the reasons why a treaty exists, its *raison d'être* or *ratio*, reflecting the intention of the parties,[203] which entails the necessity of maintaining the balance between the originally contracted rights and obligations, as they are summarised especially in the Preamble.[204] In particular, paragraph 5 of the Preamble to the World Heritage Convention provides that the Convention establishes "a system of collective protection of the cultural and natural heritage of outstanding universal value, organised on a permanent basis and in accordance with modern scientific methods". If, on the one hand, an evolutionary interpretation may easily lead to view the mention of "modern scientific methods" as encompassing on-site mitigation and adaptation measures, the same would be possible but more difficult as regards general mitigation measures, by reason of their quantitative and qualitative impact on States' obligations, probably leading to an excessive broadening of the scope of the Convention.

As a consequence of this possible interpretation, a push to require generally applicable mitigation measures under the World Heritage Convention could lead to terminating the Treaty, or, more likely, some States withdrawing from it or suspending its operation in relation to all or some of their obligations (Article 62(3) of the VCLT). Another faculty available to States Parties is asking for a revision of the World Heritage Convention.[205] A State might generate these effects according to the procedure provided for in Article 65 of the VCLT, establishing the obligation to notify the other parties, which are entitled, in turn, to raise objections, and setting out the duty to look for a possible final solution via Article 33 of the United Nations Charter, including remedies that range from negotiation to judicial settlement. However, in light of customary international law and the language of Article 33 of the VCLT, which provides that "the parties *shall seek* a solution through the means indicated in Article 33 of the Charter of the United Nations",[206] it is reasonable to assume that resort to a third party is not indispensable in order to make a final decision on the existence of a fundamental change of circumstances,

202 See above sections III.B and III.C.1.

203 Ulf Linderflak *On the Interpretation of Treaties* (Dordrechts, Springer, 2007) at 204-205.

204 Mark Villiger "The Rules on Interpretation: Misgivings, Misunderstandings, Miscarriage? The 'Crucible' Intended by the International Law Commission" in Cannizzaro, above n 130, 105 at 110; Sinclair, above n 165, at 130 and following.

205 Vamvoukos, above n 163, at 200.

206 Emphasis added.

and negotiations must not imperatively lead to a compromise. Thus, the only duty specified in Article 65 of the VCLT is to negotiate in good faith, which means that States finally have a unilateral right to terminate or suspend the operation of a treaty.[207] Moreover, a State might opt for denunciation under Article 35 of the World Heritage Convention, which would allow avoiding any risk of dispute.[208]

In other words, if significant GHG reduction targets were to be approved under the World Heritage Convention, some States might avail themselves of the faculties established under Article 62(3) of the VCLT, and thus eventually undermine the framework of the Convention.[209] It is possible to interpret in this sense the position assumed by the United States in the paper submitted to the World Heritage Committee in March 2006, in response to the five petitions addressing the impact of climate change on various sites of outstanding universal value. In fact, the United States argued that strong action against climate change by the World Heritage Committee would change the "spirit" of the World Heritage Convention as ratified in 1972.[210] Thus, ultimately, strengthening general mitigation measures under the World Heritage Convention might produce an effect opposite to the purpose of imposing stringent mitigation measures.

C. Systemic Integration

From a slightly different perspective, by looking at the theory of systemic integration and the current status of international legal relationships, another decisive argument must be taken into account in assessing the relationship between the World Heritage Convention and the UNFCCC regime, which is the fact that the World Heritage Convention is not the only treaty likely to be invoked in order to foster mitigation measures against GHG emissions. This consideration is part of the broader discourse on treaty proliferation, which is a specific aspect of regulatory conflicts,

207 Corten and Klein, above n 167, at 2249; Fitzmaurice and Elias, above n 163, at 197. But see Vamvoukos, above n 163, at 211-214.

208 Vamvoukos, above n 163, at 197-198.

209 Burns, above n 47, at 161. That happened, for instance, in the case of the withdrawal of the United States from the ABM Treaty, although there are some divergences as to the invocation of a fundamental change of circumstances in this case (see Fitzmaurice and Elias, above n 163, at 197).

210 United States, above n 116, at 6. One might nevertheless argue that, by not ratifying the Kyoto Protocol, the United States "contributed" to the fundamental change of circumstances and thus might not invoke it as a ground for terminating, suspending or revising the World Heritage Convention (see Vamvoukos, above n 163, at 195). However, this hypothesis should be carefully assessed, since, as we have seen (above section III.C.2), GHG emissions are attributable to private corporations, whereas their attribution to States is a complex issue. Furthermore, the "contribution" of the United States to GHG emissions is not necessarily a breach of an international obligation, as provided for in Article 62(2)(b) of the VCLT (Sinclair, above n 165, at 193). See also Eric Posner and David Weisenbach *Climate Change Justice* (Princeton, Princeton University Press, 2010) at 99 and following.

and is particularly true of the environmental sector, where regulation is set out mainly via a rapidly growing mosaic of multilateral environmental agreements (MEAs).[211]

In this vein, for instance, the Antarctic Treaty provides for the "preservation and conservation of living resources in Antarctica" (Article IX(1)(f)).[212] Even more significantly, the Convention on Biological Diversity (CBD) asserts that States have "the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction" (Article 3).[213] The CBD also provides for the development or adaptation of "national strategies, plans or programmes for the conservation and sustainable use of biological diversity" (Article 6). Furthermore, it provides that a State must "integrate consideration of the conservation and sustainable use of biological resources into national decision-making" (Article 10(a)) and "encourage cooperation between its governmental authorities and its private sector in developing methods for sustainable use of biological resources" (Article 10(e)). Finally, the CBD implicitly includes the concept of "common but differentiated responsibility" under Article 7, which mentions that States' monitoring and identification efforts take place "in so far as possible and as appropriate".[214]

Potentially, many conventional regimes focusing on sustainable development, such as the 1995 Agreement for the Conservation of Straddling and Highly Migratory Fishes, ignore provisions that might be considered relevant to climate change. In fact, global warming impacts on several aspects of life, ranging from agriculture to freshwater resources and tourism.[215] Providing specific on-site mitigation and adaptation measures under each regime is feasible, because this flexible technique integrates the overall UNFCCC system. In contrast, setting out general GHG emission limits under each convention is hardly imaginable and would lead to the establishment of various "self-contained GHG emission regimes".[216] Practically, it would be impossible to negotiate further general GHG emission constraints within the framework of each regime. Theoretically, this approach would indefinitely multiply the identified relationship between the World Heritage Convention, the UNFCCC, the Kyoto Protocol and the foreseeable post-Kyoto regime, thus leading to an inextricable bundle of inconsistency, temporal and speciality relationships between different systems. This approach

211 Klabbers, above n 130, at 193; Desai, above n 161, at 47 and following; Kiss and Shelton, above n 182, at 73 and following.

212 Antarctic Treaty 402 UNTS 71 (signed 1 December 1959, entered into force 23 June 1963).

213 Convention on Biological Diversity 1760 UNTS 79 (opened for signature 5 June 1992, entered into force 29 December 1993).

214 See Alan Boyle "The Convention on Biological Diversity" in Campiglio and others, above n 103, at 111.

215 Loibl, above n 103, at 98-99.

216 The expression "self-contained regimes" is used in the sense of "subsystems of rules" (see International Law Commission, above n 87, at [172]).

would evidently lead to fragmented, overlapping as well as superfluous and contradictory regulations. Furthermore, it might entail a different treatment of different States depending on the conventions to which they are parties.

V. A Way Forward

The issues canvassed above prove that specific adaptation and on-site mitigation measures are not problematic under the World Heritage Convention. It can thus be assumed that in this respect the World Heritage Convention, on the one hand, and the UNFCCC regime, on the other hand, are perfectly complementary and mutually reinforcing. The main reason for this complementarity is that adaptation and on-site mitigation measures are flexible and adopted on a case-by-case basis. Therefore, in this respect, a constant dialogue between the institutions established under the World Heritage Convention and the UNFCCC may lead to optimal solutions in view of the protection of world heritage sites. This has already been envisaged by the World Heritage Committee.[217]

In contrast, establishing generally applicable GHG emission limits under the World Heritage Convention raises relevant practical and normative problems. Overall, general mitigation measures are beyond the purpose of the World Heritage Convention as it is currently framed. A way forward, both legally and politically, might be pushing decision-makers to set out GHG emission constraints under the UNFCCC regime by taking into account the outstanding universal value of sites listed under the World Heritage Convention. Such an approach would be consistent with the multiple objectives established under different regulatory regimes, in the vein of a systemic solution of treaty conflicts, which assumes that self-contained regimes communicate with one another through cooperation and mutual recognition.[218] For example, balancing natural heritage sites and mixed natural and cultural sites in setting out general GHG emission limits under the UNFCCC regime would permit at the same time the protection of values embodied in the biodiversity conservation system. Thus, the UNFCCC regime, especially with regard to the post-2012 commitment periods, might be the "general box" where all issues under the various relevant conventions are taken into account, respectively compared and finely balanced according to the capacity and willingness of States to mitigate climate change within safe limits.[219] This is perfectly consistent with the general purpose of the UNFCCC, which is stabilising GHG emissions "at a level that would prevent dangerous anthropogenic interference with the climate system" (Article 2), by

217 World Heritage Committee *Report*, above n 44, at 8, [13]. See also above section II.B.1.

218 Andreas Fischer-Lescano and Gunther Teubner *Regime-Kollisionen: Zur Fragmentierung des Globalen Rechts* (Nomos, Baden-Baden, 2006).

219 Posner and Weisenbach, above n 210, at 170, advocating the necessity of developing a "broad, deep and enforceable treaty that achieves appropriate climate goals".

taking into account related factors, namely the economic and social impact of climate change measures, including issues such as energy and urbanisation.[220] This approach is also consistent with the Kyoto Protocol, which has been established to set out "[GHGs] quantified limitations and reductions objectives within specific time-frames […] for anthropogenic emissions and removal by sinks".[221]

This would be a complementary approach, based, insofar as possible, on a systematic analysis of all relevant international conventions in accordance with the global nature of climate change.[222] Such a view, which relies upon an "overall systemic integration", is all the more remarkable by considering that currently the UNFCCC regime, especially negotiations concerning the post-2012 commitment periods as recently foreseen in Durban and Doha, does not provide any reference to world heritage.

With regard to the textual and normative relationship between the World Heritage Convention and the UNFCCC regime, two types of initiatives would be appropriate. From the substantive viewpoint, the UNFCCC regime should explicitly take into account world heritage obligations in defining general mitigation measures against GHG emissions. In this vein, the Australia Climate Justice Programme, Climate Action Network Australia and Friends of the Earth Australia submitted a request to the *Ad Hoc* Working Group on Further Commitments for Annex 1 Parties under the Kyoto Protocol, claiming that protection of world heritage sites must be a significant factor in the decision-making process for establishing GHG emission reductions beyond 2012.[223] At the same time, the World Heritage Convention might provide that general mitigation measures against GHG emissions are part of the action necessary to protect world heritage sites[224] and should be specifically regulated within the framework of the UNFCCC regime.

220 Loibl, above n 103, at 101. For a careful analysis of the various factors implicated by climate change and the difficulties in negotiating the UNFCCC and the Kyoto Protocol see Freestone, above n 136, at 9 and following; Pulvenis, above n 103, at 76 and following. This provides an idea of the difficulty of negotiating climate change-related problems within the context of the World Heritage Convention. See also Samir Allal "Urbanization, Energy and Environment: for a Global Approach" in Campiglio and others, above n 103, at 261 and following.

221 UNFCCC Conference of the Parties, Berlin *Report of Its First Session – Addendum: Action Taken by the Conference of the Parties at Its First Session* (Doc FCCC/CP/1995/7/Add.1, 6 June 1995) Decision 1/CP.1 – The Berlin Mandate: Review of the Adequacy of Article 4(2) (a) and (b) of the Convention, Including Proposals Related to a Protocol and Decisions on Follow up, Part II, at [2(a)]. In this context, the necessity for States of protecting world heritage sites "to the utmost of their resources" under Article 4 of the World Heritage Convention would entail the careful weighing of different values, in line with the recent Report of the experts' meeting held in Parati, which stresses that the possible conflict between conservation and development should be resolved through a compromise that balances all legitimate interests and reconciles global and local values (World Heritage Committee, above n 13, at 3, [8(c)]).

222 World Heritage Committee, above n 13, at 3, [8(d) and 5].

223 Australian Climate Justice Programme, Climate Action Network Australia, and Friends of the Earth Australia *Submission to the Ad Hoc Working Group on Further Commitments for Annex 1 Parties under the Kyoto Protocol* (September 2008).

224 World Heritage Committee, above n 13, at 3, [8(d)].

In order to strike the right balance between world heritage and climate change, from the procedural standpoint, the World Heritage Committee could exert pressure on international and regional institutions dealing with climate change so as to have the needs of world heritage sites included in general mitigation policies. In fact, the recent document released by the World Heritage Committee on World Heritage and Sustainable Development clearly states that "while all opportunities for contributing to sustainable development through conservation should be seized", it must be borne in mind that "agencies responsible for the protection of world heritage properties cannot substitute for other local, national or international bodies whose mandate focuses specifically on sustainable development".[225] Therefore, the World Heritage Committee and other institutions that work on world heritage properties are not primarily responsible for climate change issues, but can play an important role in assisting specialised organisations and contributing to include world heritage sites among their priorities. This approach would be consistent with Article 13(7) of the World Heritage Convention, which provides that "the [World Heritage] Committee shall co-operate with international and national governmental and non-governmental organisations having objectives similar to those of this Convention",[226] and with the proposals of the World Heritage Committee "Policy Document on the Impacts of Climate Change on World Heritage Properties".[227] Such a policy would lead to establish an extra-systemic cooperation, which is already largely exploited within the context of self-contained environmental agreements.[228]

In any case, given that the fundamental negative impact of climate change on sites of outstanding universal value is commonly acknowledged,[229] and by reason of the fact that it might undermine the legitimacy of the whole World Heritage Convention under Article 62 of the VCLT, tackling the problem within the context of the World Heritage Convention certainly cannot be avoided, not only as regards on-site measures, but also with respect to general action.[230] It is also surprising that States and international organisations which claim leadership in the matter of climate change do not consider world heritage sites in their GHG mitigation policies, given that many developed countries have the capacity to improve GHG constraints beyond the limits set out by the Kyoto Protocol.[231] For instance, the EU commissioned scientific studies on the impact of climate change on world heritage sites,[232] but to date has not incorporated their results in its general policy on global warming, so much so

225 At 3, [8(d)].
226 Emphasis added. See World Heritage Committee *Issues*, above n 44, at 23, [6-7].
227 UNESCO World Heritage Centre, above n 16, at 4.
228 Desai, above n 161, at 60.
229 See UNESCO World Heritage Centre, above n 16, at 3 and following.
230 Burns, above n 47, at 161-162.
231 Thorson, above n 66, at 165.
232 See "Climate Change Threatens Europe's Cultural Heritage" <ec.europa.eu/research/research-for-europe/environment-noah-s-ark_en.html>.

that the prospective EU action against climate change to 2020 and beyond does not contain any mention of world heritage.[233] In this vein, based on the idea that "sustainable development is a development that takes also into account the need to conserve the heritage", the World Heritage Committee recently recognised that "the great potential of world heritage, and heritage in general, for contributing to these three dimensions [of sustainable development – the environmental, the economic and the social pillars] is still not sufficiently recognised both in developing and developed countries".[234]

VI. Conclusion

So far, climate change has not determined any change in the List of World Heritage in Danger. However, its impact on cultural and natural heritage is an assessed reality. Its consequences are so far reaching that they might lead to substantial changes to the current World Heritage List and List of World Heritage in Danger.

Albeit the reality, climate change must not precipitate hasty shifts in the interpretation of the World Heritage Convention, but it certainly compels the consideration of the role of the Convention in counteracting global warming. In particular, if the Convention is to remain a legitimate tool for the protection and conservation of sites of outstanding universal value for future generations, including forests, mountain glaciers, coral reefs, archaeological sites and monuments, the World Heritage Committee and States must address the relationship between responsive and pre-emptive strategies under the World Heritage Convention and the UNFCCC regime without ambiguity.

It has been argued in this article that the language of the World Heritage Convention permits climate change to be characterised as a threat to world heritage sites against which States Parties have to fight. Therefore, it is assumed that the Convention can easily be interpreted as compelling States to take adaptation and on-site mitigation strategies strengthening those established under the UNFCCC regime. In contrast, self-contained general mitigation measures are likely to be inconsistent with the formal and systemic framework set out by the World Heritage Convention, and with the principles governing the law of treaties. In particular, problems might arise with respect to the theory of the fundamental change of circumstances and systemic integration.

As a consequence, the most reasonable approach to the relationship between the World Heritage Convention and the UNFCCC is: 1) taking specific adaptation and on-site mitigation measures against climate change under the World Heritage Convention in order to protect world heritage sites; and 2) integrating world heritage within the framework of the UNFCCC regime in the definition of general mitigation measures against climate change.

233 European Commission "EU Action against Climate Change – Leading Global Action to 2020 and Beyond" (2009) <ec.europa.eu>.

234 World Heritage Committee, above n 13, at 3, [8(b) and (c)].