

UNESCO-HQ, Paris, 21 June 2011

11th OWHC World Congress, Sintra, Portugal, 22-25 Nov 2011

World Heritage Cities and Climate Change



O V P M
O W H C
O C P M



SINTRA
CÂMARA MUNICIPAL



PATRIMOINE MONDIAL
WORLD HERITAGE
PATRIMONIO MUNDIAL

World Heritage Cities and Climate Change

[Links to](#)

*World Heritage Cities Programme
and UNESCO's HUL Recommendation*

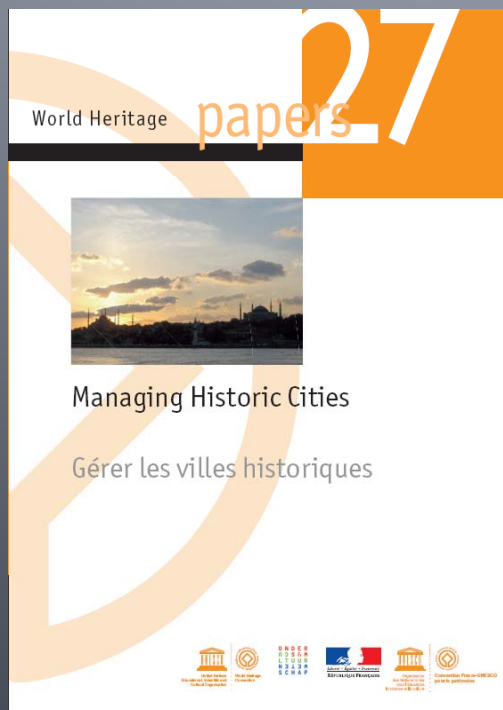


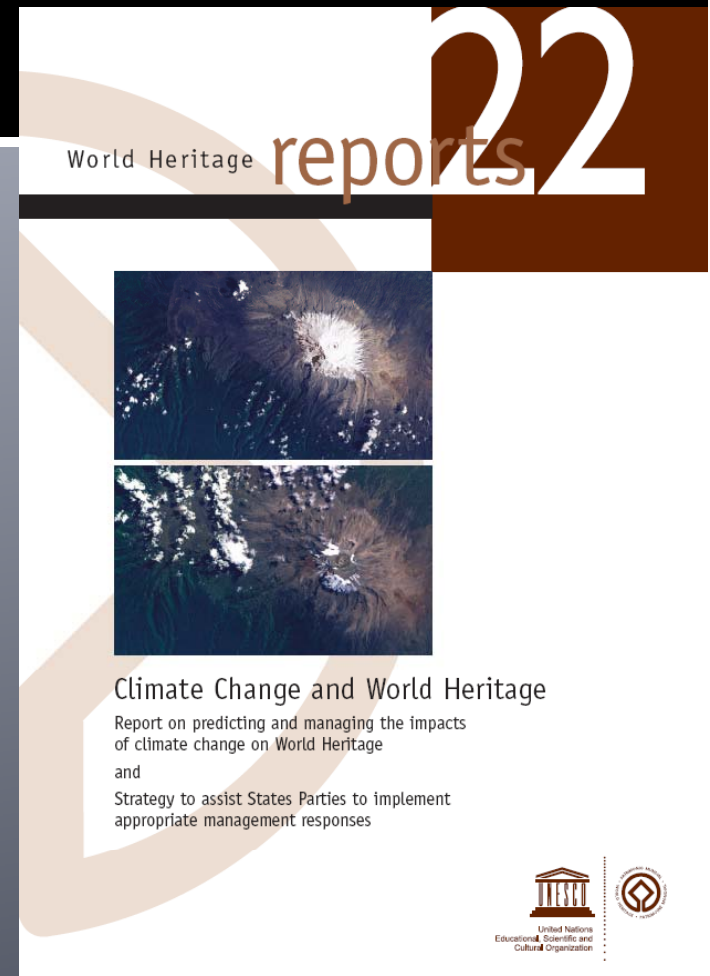
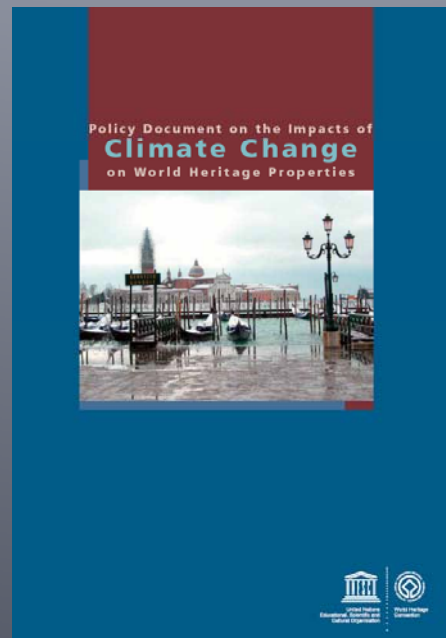
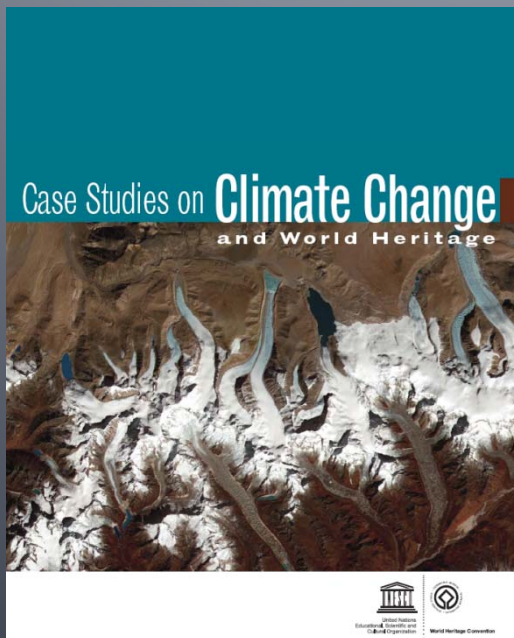
Table 1. Principal climate change risks and impacts on cultural heritage

Climate Indicator	Climate change risk	Physical, social and cultural impacts on cultural heritage
Atmospheric moisture change	<ul style="list-style-type: none"> - Flooding (sea, river) - Intense rainfall - Changes in water-table levels - Changes in soil chemistry - Ground water changes - Changes in humidity cycles - Increase in time of wetness - Sea-salt chlorides 	<ul style="list-style-type: none"> - pH changes to buried archaeological evidence - Loss of stratigraphic integrity due to cracking and heaving from changes in sediment moisture - Data loss preserved in waterlogged / anaerobic / anoxic conditions - Eutrophication accelerating microbial decomposition of organics - Physical changes to porous building materials and finishes due to rising damp - Damage due to faulty or inadequate water disposal systems: historic rainwater goods not capable of handling heavy rain and often difficult to access, maintain, and adjust - Crystallisation and dissolution of salts caused by wetting and drying affecting standing structures, archaeology, wall paintings, frescos and other decorated surfaces - Erosion of inorganic and organic materials due to flood waters - Biological attack of organic materials by insects, moulds, fungi, invasive species such as termites - Subsoil instability, ground heave and subsidence - Relative humidity cycles/shock causing splitting, cracking, flaking and dusting of materials and surfaces - Corrosion of metals - Other combined effects eg. Increase in moisture combined with fertilisers and pesticides
Temperature change	<ul style="list-style-type: none"> - Diurnal, seasonal, extreme events (heat waves, snow loading) - Changes in freeze-thaw and ice storms, and increase in wet frost 	<ul style="list-style-type: none"> - Deterioration of facades due to thermal stress - Freeze-thaw/frost damage - Damage inside brick, stone, ceramics that has got wet and frozen within material before drying - Biochemical deterioration - Changes in 'fitness for purpose' of some structures. For example overheating of the interior of buildings can lead to inappropriate alterations to the historic fabric due to the introduction of engineered solutions - Inappropriate adaptation to allow structures to remain in use
Sea-level rises	<ul style="list-style-type: none"> - Coastal flooding - Sea-water incursion 	<ul style="list-style-type: none"> - Coastal erosion/flood - Intermittent introduction of large masses of 'strange' water to the site, which may disturb the metastable equilibrium between artefacts and soil - Permanent submersion of low-lying areas - Population migration - Disruption of communities - Loss of rituals and breakdown of social interactions
Wind	<ul style="list-style-type: none"> - Wind-driven rain - Wind-transported salt - Wind-driven sand - Winds, gusts and changes in direction 	<ul style="list-style-type: none"> - Penetrative moisture into porous cultural heritage materials - Static and dynamic loading of historic or archaeological structures - Structural damage and collapse - Deterioration of surfaces due to erosion
Desertification	<ul style="list-style-type: none"> - Drought - Heat waves - Fall in water table 	<ul style="list-style-type: none"> - Erosion - Salt weathering - Impact on health of population - Abandonment and collapse - Loss of cultural memory
Climate and pollution acting together	<ul style="list-style-type: none"> - pH precipitation - Changes in deposition of pollutants 	<ul style="list-style-type: none"> - Stone recession by dissolution of carbonates - Blackening of materials - Corrosion of metals - Influence of bio-colonisation
Climate and biological effects	<ul style="list-style-type: none"> - Proliferation of invasive species - Spread of existing and new species of insects (eg. termites) - Increase in mould growth - Changes to lichen colonies on buildings - Decline of original plant materials 	<ul style="list-style-type: none"> - Collapse of structural timber and timber finishes - Reduction in availability of native species for repair and maintenance of buildings - Changes in the natural heritage values of cultural heritage sites - Changes in appearance of landscapes - Transformation of communities - Changes the livelihood of traditional settlements - Changes in family structures as sources of livelihoods become more dispersed and distant

World Heritage Cities and Climate Change

Links to

*World Heritage Centre's Activities on
World Heritage and Climate Change*



World Heritage Cities and Climate Change

Links to

UNESCO's
Climate Change
Initiative

Key Objectives of the 4 core programmes

Climate Science and Knowledge

1. Climate change service and resilience improved through regular interactions between providers and users;
2. Interdisciplinary climate change knowledge base continuously strengthened through integrating UNESCO capacities in natural and social sciences, culture, education and communication and accessing regional and local expertise
3. Member States' resilience improved through national climate risk management policies that integrate science, local and indigenous knowledge, and ecological and socio-cultural systems.

Climate Change, Cultural and Biological Diversity, and Cultural Heritage

1. Promote the recognition and use of biosphere reserves and World Heritage sites as priority sites for implementing the UNESCO Climate Change Initiative and other UN-level climate change initiatives
2. Collect, document and analyze scientific and traditional and local knowledge of both women and men on impacts of climate change on biodiversity and ecosystem services and human/community responses to adapt to these impacts
3. Promote skills and competencies in cultural industries linked to films, computer animation and products, photographic and art festivals and events as well as other public/media events to tell climate change adaptation and mitigation linked stories drawn from science, religion, traditional knowledge etc.

Climate Change Education in the Overall Context of Education for Sustainable Development

1. Strengthen the capacity of Member States to provide quality climate change education for sustainable development at primary and secondary school level
2. Encourage and enhance innovative teaching approaches to integrate quality climate change education for sustainable development in schools
3. Raise awareness about climate change and enhance non-formal education programmes through media, networking and partnerships

Climate Change, Ethics, Social and Human Sciences Dimensions

1. Establishment of a truly comprehensive SHS-wide approach to climate change based on two pillars: the MOST Programme, and the environmental ethics programme
2. Strengthened intersectoral cooperation on fresh water, energy, REDD and biodiversity management building on enhanced SHS leadership capacity
3. Improved understanding of gender equality issues entailed in addressing the social and human dimension of climate change and better capacity to respond to them

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THE UNESCO CLIMATE CHANGE INITIATIVE

World Heritage Cities and Climate Change

Rationale

XI WORLD CONGRESS
OF THE ORGANIZATION
OF WORLD HERITAGE CITIES
(OWHC)



*World Heritage Cities
and Climate Change*

World Heritage Cities are vibrant living environments with cultural heritage of outstanding universal value. In the face of climate change, however, **World Heritage Cities are among the most vulnerable places on Earth to experience rapidly occurring changes.**

World Heritage Committee has continually alerted the international community that **“the impacts of Climate Change are affecting many and are likely to affect many more World Heritage properties, both natural and cultural in the years to come”**. The XI World Congress aims to create a platform for dialogue and exchange of state-of-the-art knowledge on the issue of World Heritage Cities and Climate Change and its **transfer into policy and action.**

City governments are at the heart of the action. The site-specific nature of climate change impacts make World Heritage Cities **ideal laboratories for monitoring changes and testing adaptation and mitigation measures** to enhance their socio-economic well-being while ensuring the conservation of their heritage. As guardians of the world's heritage, World Heritage Cities face an additional challenge - **any action taken at these iconic places can attract considerable attention and influence the adoption of good management practices elsewhere.**

World Heritage Cultural Landscapes with urban components such as the host city, Sintra, can play a crucial role in understanding how climate change impacts our urban environment. Research, communication and educational activities aim to build public awareness and knowledge of climate change, its potential impacts on World Heritage Cities and their values.

Bring together stakeholders from **political, practitioners', academic and media.**

World Heritage Cities and Climate Change

The Partner Institutions, Members of the Scientific Committee

1. UNESCO World Heritage Centre
2. Organization of World Heritage Cities
3. Getty Conservation Institute
4. ICCROM
5. IUCN
6. ICOMOS
7. University of Lisbon (Portugal)
8. University of Laval (Canada)



P R O G R A M M E

Saturday Sunday		Monday, 21 Nov	Tuesday, 22 Nov		Wednesday, 23 Nov	Thursday, 24 Nov	Friday 25 Nov	Saturday Sunday	
Morning	Pre - Congress Tours (The cost is not included in the registration fee)	Arrival of Participants	Registration (all day)		Opening Remarks	World Heritage Cities and Climate Change: Key note 3 and panel discussion	General Assembly	Post- Congress Tours (The cost is not included in the registration fee)	
			Mayors' Workshop	Journalists' Workshop	World Heritage Cities and Climate Change: Key note 1				
			In parallel: • Youth Forum • Participants' Site Visit		World Heritage Cities and Climate Change: Key note 2 and panel discussion	World Heritage Cities and Climate Change: Key note 4 and panel discussion	In parallel: • Journalists' Workshop wrap-up		
Lunchtime									
Afternoon			Mayors' Site Visit	Journalist' Workshop + Site Visit	Candidates to the Board of Directors and next Congress Host City 2013	UNESCO Recommendation on Historic Urban Landscapes	General Assembly (cont'd)		
			In parallel: • Youth Forum+ Site Visit • Participants' Site Visit		Poster Session + J.P. L' Allier Prize candidates	Case Studies Project: Urban Project in World Heritage Cities			
					Regional Meetings	Concluding Remarks+ Youth message			
Evening			Opening Ceremony		Evening Event	Evening Event	Closing Ceremony		

World Heritage Cities and Climate Change

Scientific Theme and Key-notes

‘From knowledge to policy and action’

- What do we know about the **interrelations** of climate change and its impacts on historic cities? Where are the knowledge gaps?
- Which **tools** exist to assess the impacts? Which policies exist and guide the currently implemented measures?
- Which **policies** and tools need to be developed?
- What should be the concrete **next steps** to adapt to and mitigate climate change impacts in historic cities?

2013 World Heritage Cities and Climate Change Congress							
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World Heritage Cities and Climate Change

Key-note speakers



Martin Parry

Visiting Professor, Imperial College London (UK),
and Former Vice-Chair of the IPCC's working group II
on impacts, adaptation and vulnerability

World Heritage Cities and Climate Change:

**Setting the stage: The Concept of Climate Change Adaptation,
its Relevance for Urban Environments and the Challenges for
World Heritage Cities**

World Heritage Cities and Climate Change

Key-note speakers



May Cassar

Professor, University College London (UK)

World Heritage Cities and Climate Change:

Sustainability and Vulnerabilities of Urban Heritage – what do we know, what do we need to know ?

World Heritage Cities and Climate Change

Key-note speakers



Anthony G. Bigio

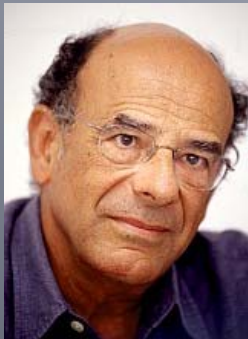
Senior Program Specialist,
The World Bank, Washington (USA)

World Heritage Cities and Climate Change:

The World Bank's Programme on Urban Environment and Climate Change – Supporting Heritage Cities in Facing Adaptation and Mitigation to Climate Change

World Heritage Cities and Climate Change

Key-note speakers



Filipe Duarte Santos

Professor, University of Lisbon (Portugal)

World Heritage Cities and Climate Change:

Good Practice in Green and Climate Proofing Policies and Actions – Sintra's Climate Change Risks Report

World Heritage Cities and Climate Change

Additional Presentations

- Co-presentations by Mayors and City Officials
- “Snapshot” presentations chosen from Posters
- Round-table discussions with speakers of each session

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World Heritage Cities and Climate Change

Posters

- Council for Climate Protection (Klimarat) of the Hanseatic City of **Stralsund (Germany)**
- Aplicación de la Evaluación Ambiental Integral (UNEP) en Ciudades Patrimonio (**Arequipa, Peru**)
- Guidelines for the Energy-Environment Performance in the Rehabilitation of Buildings (**Porto, Portugal**)

World Heritage Cities and Climate Change

Additional Presentations and Cooperation Projects

- The UNESCO Recommendation on the Historic Urban Landscape - Ron van Oers (UNESCO-WHC)
- Historic Cities in Development: Keys for Understanding and Acting: *A Compilation of Case Studies* on the Conservation and Management of Historic Cities - Bruno Delas (City of Lyon)

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World Heritage Cities and Climate Change

Workshops

- **Mayors' Workshop**

jointly prepared by Getty Conservation Institute and WHC


- **Journalists' Workshop**

jointly prepared by University of Laval (Canada), National Commission of Portugal for UNESCO, City of Sintra

World Heritage Cities and Climate Change

www.sintraovpm2011.com


**XI WORLD CONGRESS OF THE
ORGANIZATION OF WORLD
HERITAGE CITIES
(OWHC)**



**World Heritage Cities
and Climate Change**

SINTRA | PORTUGAL
NOVEMBER 22 - 25, 2011

Official Carrier



Dear Friends,

I could repeat the words of joy of the hosts of former Congresses. I could invite you to visit Sintra, because it is truly an architectural jewel, having been inscribed on the UNESCO World Heritage List as the first Cultural Landscape of Europe.

I could also express great pleasure in your presence in this extremity of Europe and encourage you to visit other magnificent works of man and nature classified by UNESCO such as the Douro, the Pico, Evora or the Alhambra, just next door in Spain.


Yes, indeed, I could. But my awareness as a citizen of the world, triggers my senses, to focus on the consecutive summits that have taken place since the 80's - Rio, Kyoto or more recently, Copenhagen and Cancun.

We are bound to the reality which impacts the entire planet and that will affect our lives and our children's lives. Thus, it is legitimate to question which legacy we are passing on to the next generations and what action we will take, or can take, to protect a heritage which is, in fact, ours.

Therefore, I invite you all to share, in Sintra, land of artists and poets, your ideas, your proposals, your projects and your successes within the scope of the theme of the 11th World Congress of the Organization of World Heritage Cities "World Heritage Cities and Climate Change" which will take place from the 22nd to the 25th of November 2011.


Fernando Roboredo Seara

Fernando Roboredo Seara
Mayor of Sintra



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Sponsors:



See you in Sintra
at the 11th OWHC World Congress !



A bientôt à Sintra
au 11^{ème} Congrès mondial de l'OVPM !

