

United Nations
Educational, Scientific and
Cultural Organization

World Heritage Convention

With the support of the
Government of Flanders



STATE OF
CONSERVATION
OF World Heritage PROPERTIES

A statistical analysis

(1979-2013)






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EXECUTIVE SUMMARY

The *World Heritage Convention* foresees the reporting to the World Heritage Committee, by the World Heritage Centre and the Advisory Bodies (ICCROM, ICOMOS and IUCN), on the state of conservation of specific properties, inscribed on the World Heritage List, and which are under threat. Between 1979 and 2013, over 2.600 state of conservation reports ("SOC reports") were prepared, which represents an exceptional documentation on conservation issues, one of the most comprehensive monitoring systems of any international conventions. In 2012, with the support of the Flemish Government, the World Heritage Centre launched an online Information System on the state of conservation of World Heritage properties and the factors affecting their Outstanding Universal Value in order to valorise this priceless documentation and make it publicly accessible to all stakeholders of the *World Heritage Convention* and any interested parties. This online tool allows the visualization of the evolution of the state of conservation of a property over time and the conduct of comprehensive analyses of the threats to identify potential trends over time.

The present study proposes an analysis of the factors having a negative impact on World Heritage properties, as reported to the World Heritage Committee between 1979 and 2013, according to various groups of threats, but also according to the categories of heritage (natural, mixed, cultural) and on a regional basis (Africa, Arab States, Asia-Pacific, Europe and North America and Latin America and the Caribbean).

Globally, a total of 2.642 SOC reports were prepared and provided insights on the state of conservation of 469 properties, located in 130 States Parties (82% of the States Parties to the *Convention* with at least one property inscribed on the World Heritage List). With 14% of all the properties examined and 9% of the properties inscribed on the World Heritage List, the Africa region figures prominently through the SOC process; while other regions have lower reporting figures. Accounting for half of the properties on the World Heritage List, Europe and North America is the only region with a lower rate of reporting. Similarly, with 30% of all the properties examined through the SOC process but accounting for 20% of the properties inscribed on the World Heritage List, natural properties seem to be reported more frequently. Out of the 3 categories, cultural properties seem to be less reported on. Indeed, only 41% of all cultural properties have been reported at least once, while over 70% of mixed and natural properties have been reported at least once.

On a more detailed analysis, over 3 properties out of 4 are negatively impacted by a management or institutional factor. This group of factors is the most encountered in the SOC reports and is widely spread and not limited to any specific region. The specific threats posed by the lack of Management Plan or System, the lack of implementation thereof but also the lack of boundaries or the need to clarify/revise them is clearly increasing and was reported in over 70% of all reports in 2013. Lack of governance and of legal framework (or inadequate one) as well as inappropriate management activities are also on the increase but at a lower rate.

The second major reported threat to World Heritage Committee is related to buildings and development, with almost half of all properties considered in this study being concerned. Over the years, there has been a clear increase in the percentage of properties reported as affected by this group of threats, which includes *inter alia* housing projects, major visitor accommodation and associated infrastructure, interpretative and visitation facility, commercial or industrial developments. Cultural properties are significantly more negatively impacted by these threats than natural properties, which are mostly affected by encroachment, major visitor accommodation and associated infrastructures. All regions are affected by these threats; though the Africa and Asia-Pacific regions are globally slightly less impacted. It appears that the only specific factors which have drastically increased over the past 30 years are related to "housing" and "major visitor accommodation and

associated infrastructures". However, for the past 3 to 5 years, those 2 factors seem to be decreasing but the number of properties affected remains proportionally high.

This study indicates that the third most reported group of threats relates to social/cultural uses of heritage. Indeed, this group of threats has affected on average 30% of the properties examined since 1989. For the past 6-7 years however, this rate has slightly decreased. With a negative impact over 120 properties, tourism/visitor or recreation is by far the most common threat of this group (inappropriate interpretation (or lack thereof), high levels of visitation, increase of vendors inside/outside the site, etc.) but seems to be globally decreasing since 2002. The analysis demonstrates that, in the reports, natural properties tend to be significantly more affected by "Social/cultural uses of heritage" than cultural and mixed properties. In general, the Latin America and the Caribbean region also seems to be more impacted than the other regions, in proportion of their total number of properties examined through the SOC process.

Transportation infrastructures are also identified as major threat to World Heritage properties. They include the development of ground transport infrastructures or the effects arising from their use, issues related to the development of marine, air or, in lesser extent, underground transport infrastructures. They have an impact on all regions and categories of heritage and have affected on average 24% of the properties examined since 1985. While the development of ground transport infrastructures seems to have more negative impact on mixed and natural properties, the effects arising from their use seems to affect cultural properties in a larger extent. The Latin America and the Caribbean region seems to be more vulnerable to this threat than the other regions.

Illegal human activities (such as poaching, illegal logging, illegal trade, illegal constructions, looting), civil unrest, war and deliberate destruction of heritage impact heavily on World Heritage properties. Indeed, such activities affect more than a third of the properties reported in 2013. These threats as a whole seem to affect more natural properties than cultural and mixed ones, in proportion; and especially in the Africa and Arab States regions. The only region less impacted is Europe and North America. A specific factor, which seems to be rapidly increasing, concerns war and civil unrest. The reporting of this factor has indeed increased from 1% of the properties reported in 2003 to 9% in 2013.

With over 20% of all properties of this study, biological resource use/modification threats affect 101 properties and are globally on the increase since 1991. This group of threats includes land conversion, livestock farming/grazing of domesticated animals, fishing/collecting aquatic resources, forestry/wood production, crop production, subsistence or commercial hunting and affect significantly more natural properties than cultural and mixed ones. Moreover, the Africa, Arab States and Latin America and the Caribbean regions seem to be more affected. The two most reported factors of this group (land conversion and livestock grazing/farming of domesticated animals) have been on a significant and constant increase since 2005.

Finally, extractive industries (mining, oil and gas exploration/exploitation and quarrying) represent an important reported threat to World Heritage properties, with up to one third of all the properties reported to the World Heritage Committee. Since 1993, this group of threats has been on the increase globally. Natural properties are significantly more affected by extractive industries than cultural or mixed properties. On a regional level, the Africa and Asia-Pacific regions seem to be the most challenged by mining, oil and gas exploration/exploitation issues.

The above-mentioned reported threats have been identified as the main groups of factors affecting World Heritage properties. There are unfortunately many more factors with negative impacts on the conservation of such sites, but to a lesser extent, detailed in this study, such as service infrastructures, sudden ecological and geological events, pollution, climate changes effects, local conditions as well as invasive species.

I. INTRODUCTION

1. Article 4 of the *World Heritage Convention* refers to the conservation of properties inscribed on the World Heritage List and indicates that "***Each State Party to this Convention recognizes that the duty of ensuring the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage (…) situated on its territory, (… and) will do all it can to this end (…)***". Furthermore, Paragraph 169 of the *Operational Guidelines* provides a detailed definition of the reactive monitoring process ("SOC process") as being the "*reporting by the Secretariat (…) and the Advisory Bodies to the Committee on the state of conservation of specific World Heritage properties that are under threat (…)*". These reports on the state of conservation of selected properties are examined each year by the World Heritage Committee.

2. At its 32nd session (Quebec City, 2008), the World Heritage Committee requested the World Heritage Centre to prepare an analytical summary of the state of conservation of the properties discussed at the 32nd session, identifying perceived trends (Decision 32 COM 7B.129).

3. After having taken note of this document at its 33rd session (Seville, 2009), the World Heritage Committee requested the World Heritage Centre to prepare an analytical summary of the perceived trends, changes and threats to properties, based on an analysis of the state of conservation of World Heritage properties over five years (2005-2009) (Decision 33 COM 7C).

4. This document (WHC-10/34.COM/7C) was examined by the World Heritage Committee at its 34th session (Brasilia, 2010). Subsequently, the Committee welcomed the offer by the Governments of Australia and Senegal to organize an expert meeting on strategies to address global state of conservation challenges (Decision 34 COM 10D) (Dakar, Senegal, 13-15 April 2011, See page http://whc.unesco.org/en/events/740/).

5. Finally, at its 35th session (UNESCO, 2011), after having endorsed the recommendations of the Dakar expert meeting (Decision 35 COM 7C), the World Heritage Committee pursued its on-going reflection on the trends of the state of conservation of properties and, considering "*the need for more systematic monitoring of threats*", called upon the States Parties to the *Convention* to support the proposed establishment of a comprehensive "State of conservation Information System" to support analytical studies and assist all stakeholders in site-management, with the target to make this system operational, on the World Heritage Centre's website, by the 37th session of the World Heritage Committee in 2013.

6. As indicated in Document WHC-12/36.COM/7C presented at the 36th session of the World Heritage Committee (Saint-Petersburg, 2012), in response to Decision 35 COM 7C, the World Heritage Centre designed a project aiming at developing such information system for all stakeholders of the *Convention* and presented it to various potential donors. The Flemish Government responded positively to support this ambitious project.

II. THE STATE OF CONSERVATION INFORMATION SYSTEM

7. The main objective of the project consisted in the development of a comprehensive and integrated computerized information system (database) on the state of conservation of World Heritage properties examined by the World Heritage Committee since 1979, and on the factors identified as negatively affecting their Outstanding Universal Value. In addition, this System allows users to assemble the puzzle formed by the numerous documents related to the state of conservation of a specific property (SOC reports, reports by the State Party, mission reports, previous decisions, etc.), which were archived in various formats and disseminated in various webpages, and are now accessible on the same webpage.

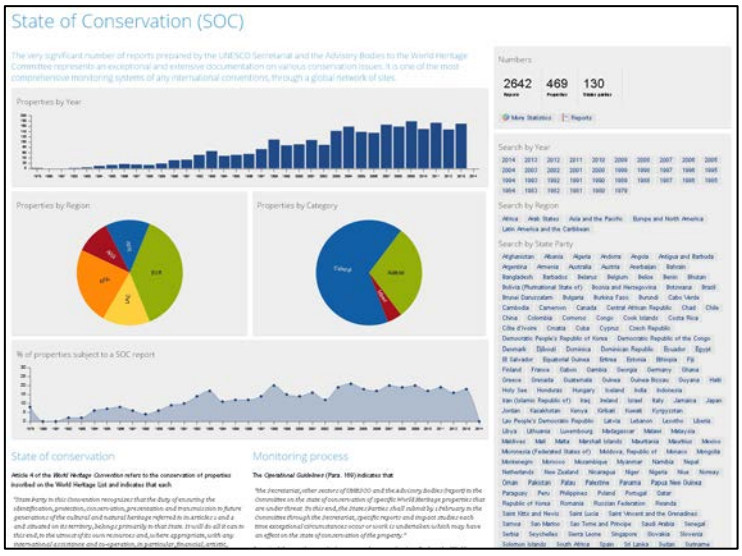
8. After a 2-year development phase, the State of conservation Information System was completed at the end of September 2013, hosted on the World Heritage Centre's website at http://whc.unesco.org/en/soc, and integrated with all other current databases (on Nominations, International Assistance, Tentative Lists, States Parties information, statutory documentation, World Heritage Committee's decisions, etc.) and is publicly available for all stakeholders of the *Convention*.

9. The Information System comes with an advanced multi-search function (per year, per property, per State Party, per Region, per type of threat, etc.) in order to extract the exact set of data required by the users and to provide the relevant statistics and charts.

10. In addition to its obvious purpose in terms of monitoring the state of conservation of properties, this Information System also highly contributes to the institutional memory of the *World Heritage Convention* and facilitates well-informed and consistent decision-making.

11. This tool also allows all users to conduct comprehensive analyses of the threats affecting the properties and their evolution over time. These analyses will help identify generic threats, underlying key issues and potential trends over time. They will assist States Parties to improve the mitigation measures to better protect their properties.

12. The present study forms part of the project supported by the Flemish Government and was conducted based on the newly established State of conservation Information System.



III. WORLD HERITAGE PROPERTIES CONSIDERED IN THE ANALYSIS

13. Since the early years of the *World Heritage Convention*, the World Heritage Centre and the Advisory Bodies to the World Heritage Committee (ICCROM, ICOMOS and IUCN) have been reporting to the Committee on the state of conservation of specific World Heritage properties that are under threat.

14. From *ad hoc* reporting on threats affecting the properties, often at the time of inscription on the World Heritage List, the reporting process evolved over the years into a more structured process called "reactive monitoring", which has been formalized in Paragraph 169 of the *Operational Guidelines* for the implementation of the *World Heritage Convention* (For more details, see article by Rössler Mechtild, Veillon Richard, 2013, "Monitoring and reporting: trends in World Heritage conservation", in Koenraad Van Balen, Aziliz Vandesan, Reflections on Preventive Conservation, Maintenance and Monitoring of Monuments, by the PRECM^{3}OS UNESCO Chair, Acco, Leuven/Den Haag, 2013, pp.129-136).

15. Each year, the World Heritage Committee examines a number of such reports (called "SOC reports") on the state of conservation of selected properties inscribed both on the World Heritage List and on the List of World Heritage in Danger.

16. Throughout the year, the World Heritage Centre (often in collaboration with UNESCO Field offices and other Sectors) and the Advisory Bodies review a considerable amount of information on the state of conservation of properties inscribed on the World Heritage List, either at the request of the World Heritage Committee, or provided by the States Parties themselves, or by third parties (individuals, NOGs, etc.). The major source of information are the state of conservation reports submitted by the States Parties concerned following a request by the World Heritage Committee (Paragraph 169 of the *Operational Guidelines*) or a request for information on specific issues by the World Heritage Centre (if the property was not previously subject to a report to the World Heritage Committee). These reports represent an opportunity for States Parties to bring all relevant information to the attention of the World Heritage Centre and the Advisory Bodies. States Parties are also encouraged to submit detailed information on any development projects which may have an impact on the Outstanding Universal Value of a property in order to inform the World Heritage Centre, in conformity with Paragraph 172 of the *Operational Guidelines*.

17. At their regular meetings, the World Heritage Centre and the Advisory Bodies review the most critical cases and a decision is taken jointly as to whether a report should be provided to the World Heritage Committee. In many cases a report is not required, as the issue can be reviewed with the State Party concerned, or through expert advice provided on a specific project (for example, following the submission of material in accordance with Paragraph 172 of the *Operational Guidelines*). In some cases, States Parties invite experts to visit the properties in order to review a specific issue through an advisory mission.

18. This emphasizes that the reports considered in this study represent only "*the tip of the conservation iceberg*", as many more properties are facing threats but which get addressed directly between the World Heritage Centre, the Advisory Bodies and the States Parties concerned and do not require the intervention of the World Heritage Committee.

19. Between 1979 and 2013, the World Heritage Centre and the Advisory Bodies have prepared a total of 2.642 such reports on the state of conservation of 469 individual World Heritage properties, located in 130 States Parties.

20. The present analysis is based on the information compiled in those 2.642 reports, and doesn't take into account the cases which were resolved without being reported to the World Heritage Committee.

21. As evidenced in Chart 1, the number of SOC reports has rapidly increased between 1979 (1 report) and 2004 (153 reports), but has been rather stable since then, with an average of 154 SOC reports each year.

22. The number of properties inscribed on the World Heritage List having similarly grown over the years (see Chart 2), it is important to compare the percentage of properties which are actually being reported on each year with the total number of properties inscribed at that time. This data would give an indication of the percentage of World Heritage properties threatened each year (see Chart 3). Although rapidly increasing until 1993, the percentage of World Heritage properties subject to a SOC report has also been rather stable since 2003 with an average of 18.5%. The noticeable peaks in 1993 and 1998 are respectively related to a regional monitoring (first steps towards the current Periodic Reporting) of the World Heritage properties in the Latin America and Caribbean region and a joint World Heritage Centre/IUCN mission in China, which brought in the process a higher number of reports.

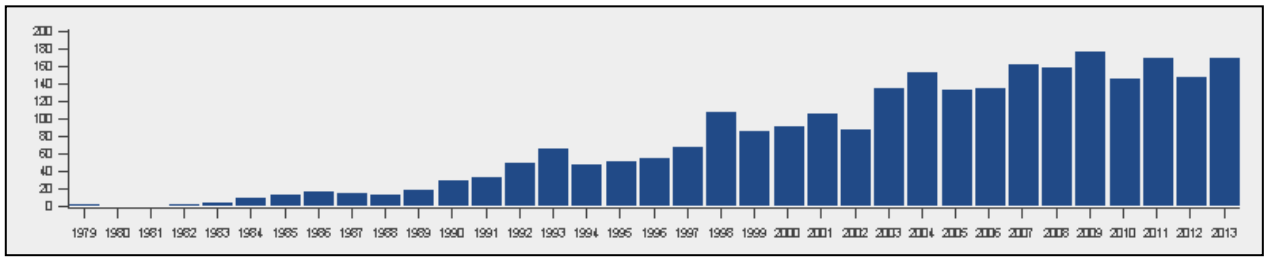


Chart 1: Number of SOC reports examined by the World Heritage Committee between 1979 and 2013

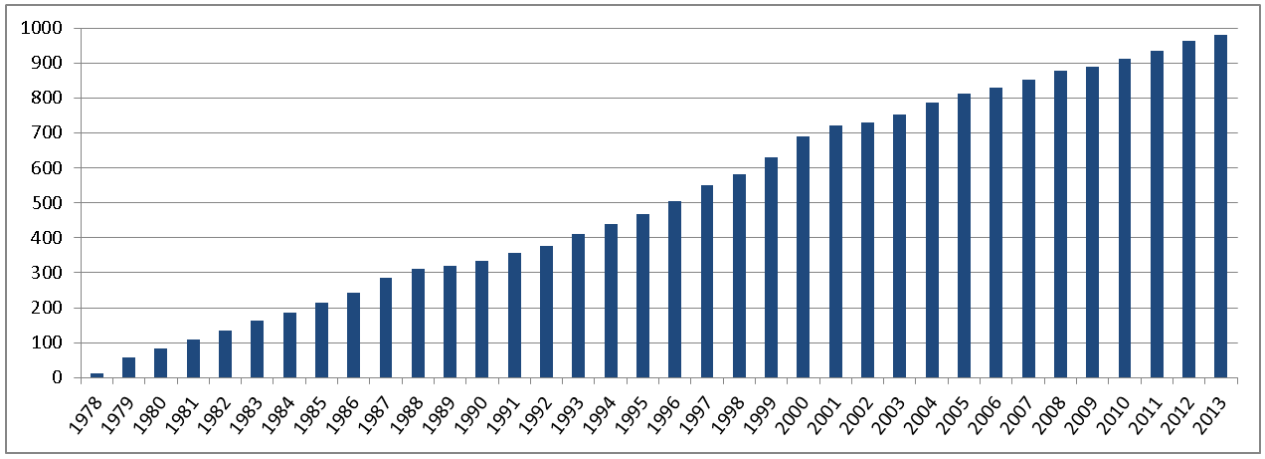


Chart 2: Number of properties inscribed on the World Heritage List since 1978

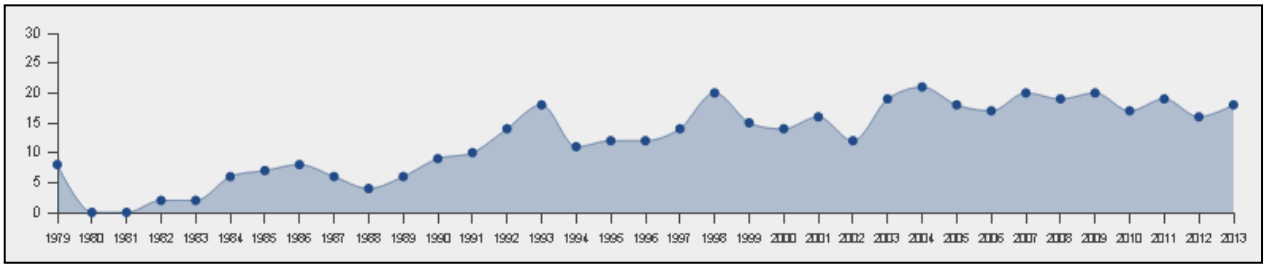


Chart 3: Percentage of the properties inscribed on the World Heritage List which have been subject to a SOC report between 1979 and 2013

IV. FACTORS AFFECTING THE OUTSTANDING UNIVERSAL VALUE OF THE WORLD HERITAGE PROPERTIES CONSIDERED IN THE ANALYSIS

23. In the SOC reports examined by the World Heritage Committee, threats affecting the Outstanding Universal Value of the properties are indicated in a narrative form (e.g. "*to evaluate the seriousness of the threat posed by the proliferation of Typha australis and other invasive aquatic species*" in the 2005 report on Djoudj National Bird Sanctuary – Senegal; or "*report on the evaluation of damages in the Historical Centre of Arequipa, following the 23 June 2001 earthquake"* in the 2001 report on the Historical Centre of the City of Arequipa – Peru).

24. In order to have a consistent approach for all the properties examined throughout the different regions of the World and the categories of heritage (natural, mixed and cultural), the treatment of the factors/threats required homogeneity in the State of conservation Information System.

25. For this reason, the standard list of factors/threats identified in Section II of the Periodic Reporting (both primary and secondary factors) was used, and each narrative description of a threat in a SOC report was converted into the corresponding standardized factor. For example, the above-mentioned threat for Djoudj National Bird Sanctuary in Senegal, was converted into "*Invasive / alien freshwater species*", while the factor affecting the Historical Centre of the City of Arequipa in Peru was converted into "*Earthquake*".

26. This standardization makes the analysis of potential trends over the years more consistent. The 14 primary and 83 secondary threats are grouped as follows:

1.Buildings and Development
- Housing
- Commercial development
- Industrial areas
- Major visitor accommodation and associated infrastructure
- Interpretative and visitation facilities

2.Transportation Infrastructure
- Ground transport infrastructure
- Air transport infrastructure
- Marine transport infrastructure
- Effects arising from use of transportation infrastructure
- Underground transport infrastructure

3.Utilities or Service Infrastructure
- Water infrastructure
- Renewable energy facilities
- Non-renewable energy facilities
- Localised utilities
- Major linear utilities

4.Pollution
- Pollution of marine waters
- Ground water pollution
- Surface water pollution
- Air pollution
- Solid waste
- Input of excess energy

5.Biological resource use/modification
- Fishing/collecting aquatic resources
- Aquaculture
- Land conversion
- Livestock farming/grazing of domesticated animals
- Crop production
- Commercial wild plant collection
- Subsistence wild plant collection
- Commercial hunting
- Subsistence hunting
- Forestry /wood production

6.Physical resource extraction
- Mining
- Quarrying
- Oil and gas
- Water extraction

7.Local conditions affecting physical fabric
- Wind
- Relative humidity
- Temperature
- Radiation/light
- Dust
- Water, Rain
- Pests
- Micro-organisms

8.Social/cultural uses of heritage
- Ritual/spiritual/religious and associative uses
- Society's valuing of heritage
- Indigenous hunting, gathering and collecting
- Changes in traditional ways of life and knowledge system
- Identity, social cohesion, changes in local population and community
- Impacts of tourism/visitor/recreation

9.Other human activities
- Illegal activities
- Deliberate destruction of heritage
- Military training
- War
- Terrorism
- Civil unrest

10.Climate change and severe weather events
- Storms
- Flooding
- Drought
- Desertification
- Changes to oceanic waters
- Temperature change
- Other climate change impacts

11.Sudden ecological or geological events
- Volcanic eruption
- Earthquake
- Tsunami/tidal wave
- Avalanche landslide
- Erosion and siltation/deposition
- Fire (wildfires)

12.Invasive/alien species or hyper-abundant species
- Translocated species
- Invasive/alien terrestrial species
- Invasive / alien freshwater species
- Invasive/alien marine species
- Hyper-abundant species
- Modified genetic material

13.Management and institutional factors
- Legal framework
- Low impact research/monitoring activities
- Governance
- High impact research/monitoring activities
- Management activities
- Management activities
- Financial resources
- Human resources

14.Other factor(s)
- Other factor(s)

27. Each secondary factor above-mentioned encompasses a number of tertiary factors, more specific, which are presented in Annex 1 but will not be used in the present analysis. The study will remain at the primary and secondary factors levels.

28. It is important to note that 77% of the properties inscribed on the World Heritage List are cultural properties, 20% are natural properties and 3% are mixed properties. Therefore, factors impacting mostly cultural heritage will *de facto* be most common in the global analysis; and to the contrary, factors affecting mostly natural properties will be less represented on the global scale, even if they affect a large proportion of the natural properties considered. To take into account these specificities, this document will present statistical analyses at various levels (globally, but also for each category of heritage and each region).

V. IDENTIFYING POSSIBLE TRENDS IN THE CONSERVATION OF PROPERTIES

A. Global analysis

29. As indicated above, between 1979 and 2013, the World Heritage Centre and the Advisory Bodies have prepared a total of 2.642 SOC reports for examination by the World Heritage Committee. These reports have provided insights on the state of conservation of 469 properties.

30. These 469 properties are located in 130 States Parties. Therefore, 82% of the 160 States Parties to the *Convention* with at least one property inscribed on the World Heritage List have had at least one of their properties affected by factors requiring the Committee's attention (note: as of 1 January 2014, 190 States Parties have ratified the *Convention*; out of which 160 have at least one property inscribed on the World Heritage List).

31. Some States Parties have been more solicited than others to provide information on the state of conservation of their properties for the purpose of a SOC report. For example, 104 SOC reports concerned 10 properties out of the 11 located in Peru, and 108 SOC reports concerned 13 properties out of the 25 inscribed in the Russian Federation.

32. Globally, the geographical distribution of the properties reported on is as presented below in Chart 4. As a norm, the following abbreviations will be used for the regions throughout the study:

- AFR: Africa
- ARB: Arab States
- APA: Asia-Pacific
- EUR-NA: Europe and North America
- LAC: Latin America and the Caribbean

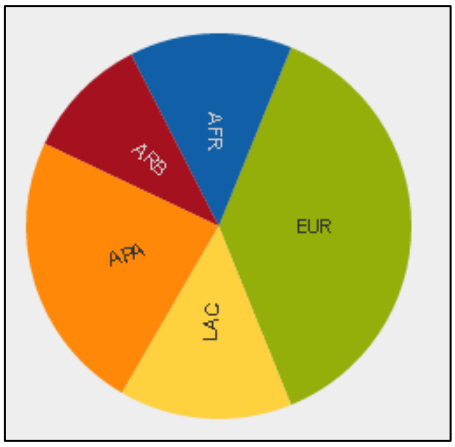


Chart 4: Geographical distribution of the 469 properties reported on between 1979 and 2013
(AFR: 14%; ARB: 10%; APA: 24%; EUR: 38%; LAC: 14%)

33. Chart 5 below compares the relative percentages of the World Heritage properties which have been subject to at least one SOC report to that of the properties inscribed on the World Heritage List, for each region. With 14% of all the properties examined through the SOC process and 9% of the properties inscribed on the World Heritage List, the Africa region figures prominently through the SOC process; while other regions have lower reporting figures. With half of the properties on the List, Europe and North America is the only region with a lower rate of reporting.

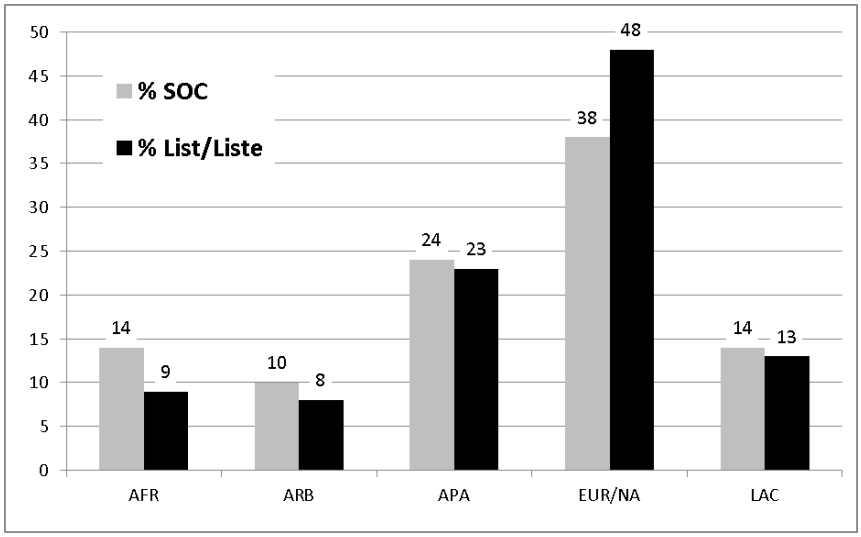


Chart 5: Geographical distribution of the 469 properties reported on between 1979 and 2013 (SOC - grey) and geographical distribution of all 981 the properties inscribed on the World Heritage List (black)

34. Similarly, Chart 6 below compares the relative percentages of World Heritage properties subject to at least one SOC report to that of the properties inscribed on the World Heritage List for each category (natural, mixed, cultural). With 30% of all the properties examined through the SOC process and 20% of the properties inscribed on the World Heritage List, natural properties seem to be reported more frequently. On the contrary, with 77% of the properties on the List, the cultural category is subject to a lower rate of reporting in the SOC process (66%).

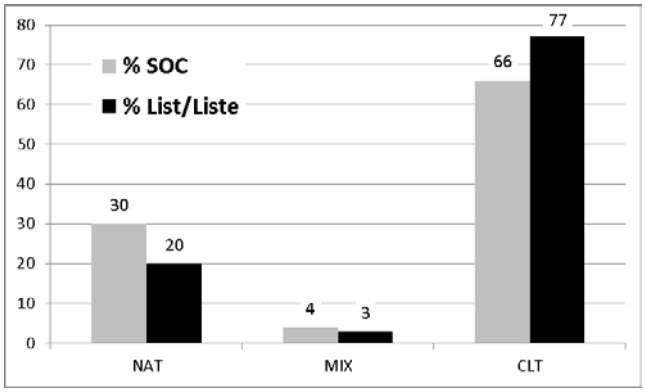


Chart 6: Percentage of natural, mixed and cultural properties subject to a SOC report between 1979 and 2013 (SOC - grey) and Percentage of natural, mixed and cultural properties inscribed on the World Heritage List (black)

35. Out of the 3 categories of properties (natural, mixed and cultural), cultural properties seem to be less reported on through the SOC process. Indeed, only 40.8% of all cultural properties have been reported at least once in the SOC process, while 72.4% of mixed and 71.5% of natural properties have been reported at least once (see Chart 7).

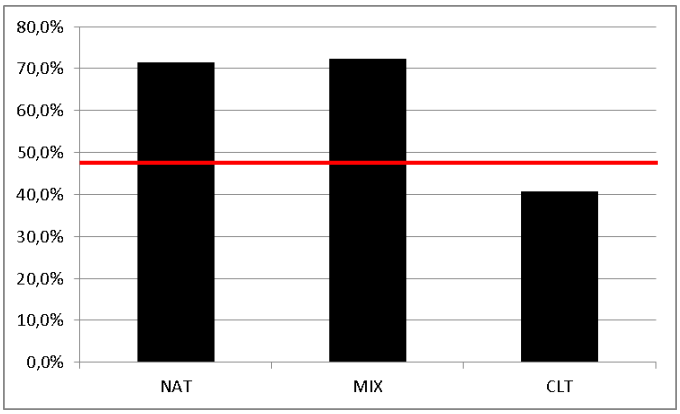


Chart 7: Percentage of natural, mixed and cultural properties having been reported at least once through the SOC process between 1979 and 2013

36. On average, between 1979 and 2013, there has been between 5 and 6 reports per property; some properties have had only one SOC report (such as Lake Malawi National Park, Malawi or Rapa Nui National Park, Chile) while some other properties have been subject of up to 28 SOC reports (Mount Nimba Strict Nature Reserve, Côte d'Ivoire/Guinea) over the same period.

37. There are some important differences according to the category of heritage or region examined (see Chart 8).

38. Indeed, on average, natural properties are subject to 7.2 reports while cultural properties are subject to 4.9 reports. Similarly, properties located in the Africa region are reported 8 times on average, while properties located in the Europe and North America region are reported 4.7 times, before being phased out of the reactive monitoring process.

39. As presented in Charts 9a, 9b and 9c, there are noticeable variations amongst the regions according to the category of heritage considered. Indeed, the average number of reports on natural properties varies from 5 in Asia-Pacific to almost 11 in Africa. The number of reports on mixed properties is also much higher for the Africa and Latin American and Caribbean regions (respectively, 8.7 and 7.7) than it is for Asia-Pacific and for Europe and North America (respectively 4.5 and 4.1). Finally, this average number of reports is more balanced for cultural properties and only varies between 4.3 and 6 reports.

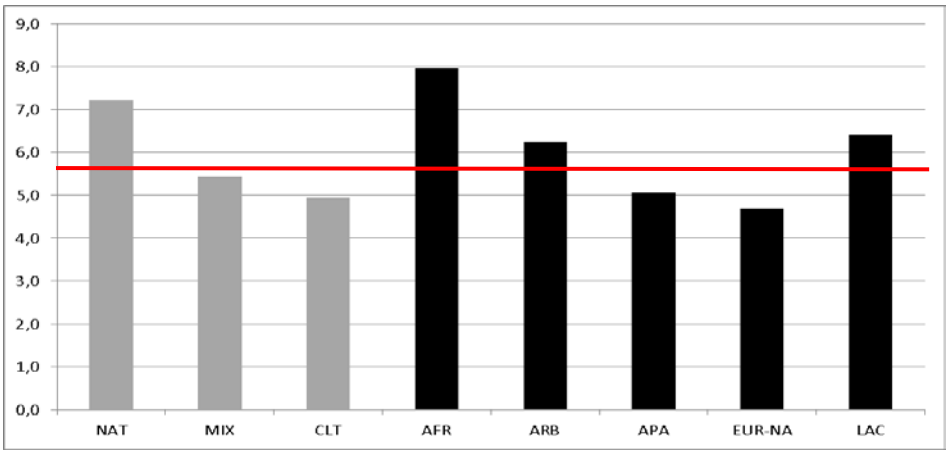


Chart 8: Average number of SOC reports prepared between 1979 and 2013 for each natural, mixed and cultural property (grey) as well as for each region (black)

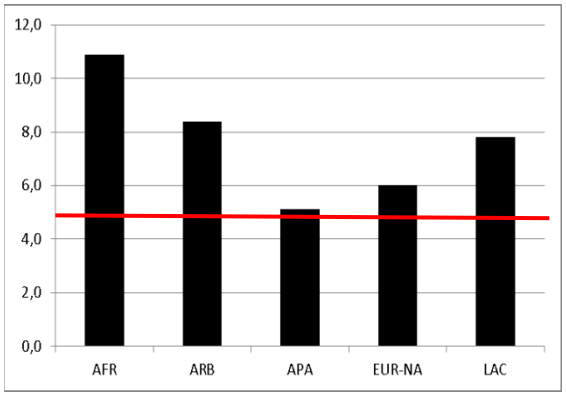


Chart 9a: Average number of SOC reports prepared between 1979 and 2013 for each natural property

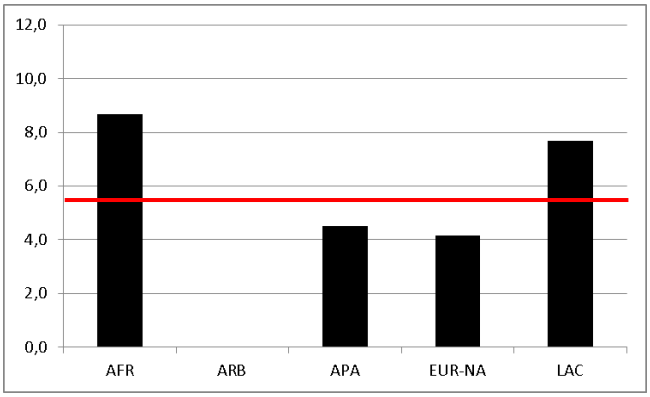


Chart 9b: Average number of SOC reports prepared between 1979 and 2013 for each mixed property

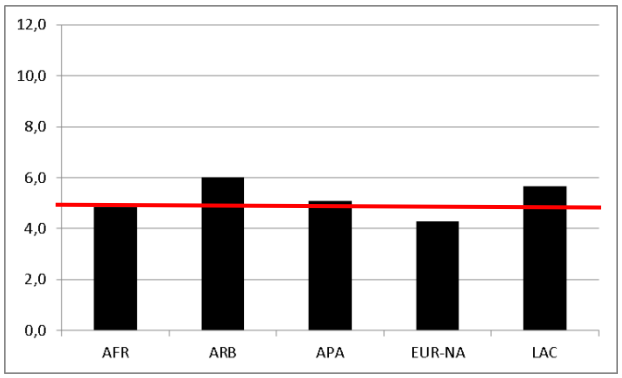


Chart 9c: Average number of SOC reports prepared between 1979 and 2013 for each cultural property

40. In analysing these figures, one has to also take into account that the reporting on the state of conservation of cultural properties started later than the reporting on natural and mixed properties. Between 1979 and 1989, 30% of the properties reported were cultural properties; while on average, between 1979 and 2013, 66% are cultural properties.

B. Analysis according to the primary groups of threats

41. As indicated above, Section II of the Periodic Reporting questionnaire (item 3), submitted every 6 years to all States Parties to the *Convention*, in regional order, includes a list of factors affecting the Outstanding Universal Value of World Heritage properties. 83 standardized factors ("secondary factors") were identified and grouped into a list of 13 "primary factors" + "Other threats" for those factors which do not fit in any primary factor. This harmonized list of factors is used for all regions, making it the most relevant tool available for comparison purpose.

42. For this reason, each narrative description of a threat described in a SOC report was converted into the corresponding standardized primary and secondary factors. The 13 primary factors are as follows, in alphabetical order:

- Biological resource use/modification
- Buildings and Development
- Climate change and severe weather events
- Invasive/alien species or hyper-abundant species
- Local conditions affecting physical fabric
- Management and institutional factors
- Physical resource extraction
- Pollution
- Social/cultural uses of heritage
- Sudden ecological or geological events
- Transportation Infrastructure
- Utilities or Service Infrastructure
- Other human activities

43. Chart 10 shows the percentage of the properties reported through the SOC process affected by each of the 13 primary factors (the "other threats" was not included in this chart due to the relatively small number of properties concerned by this factor alone). It shows that factors related to "*Management and institutional factors*", "*Buildings and Development*", "*Social/cultural uses of heritage*", "*Transportation infrastructures*" and "*Other human activities*" are the 5 most common groups of threats which lead to the preparation of a SOC report for examination by the World Heritage Committee; each of them affecting over 30% of the reported properties between 1979 and 2013.

44. For the 469 properties examined by the World Heritage Committee, a total of 2.426 individual secondary factors are recorded, which makes an average of 5.1 factors mentioned for each property. This gives an indication that besides each individual threat, the cumulative impact of threats on the Outstanding Universal Value of properties also needs to be considered in the global mitigation measures adopted.

45. It is possible to refine this analysis in order to identify which secondary factors have been the most commonly reported through the SOC process between 1979 and 2013. Table 1 displays the percentage of properties impacted by the most common secondary factors in the SOC reports (also see Annex 2 for more details).

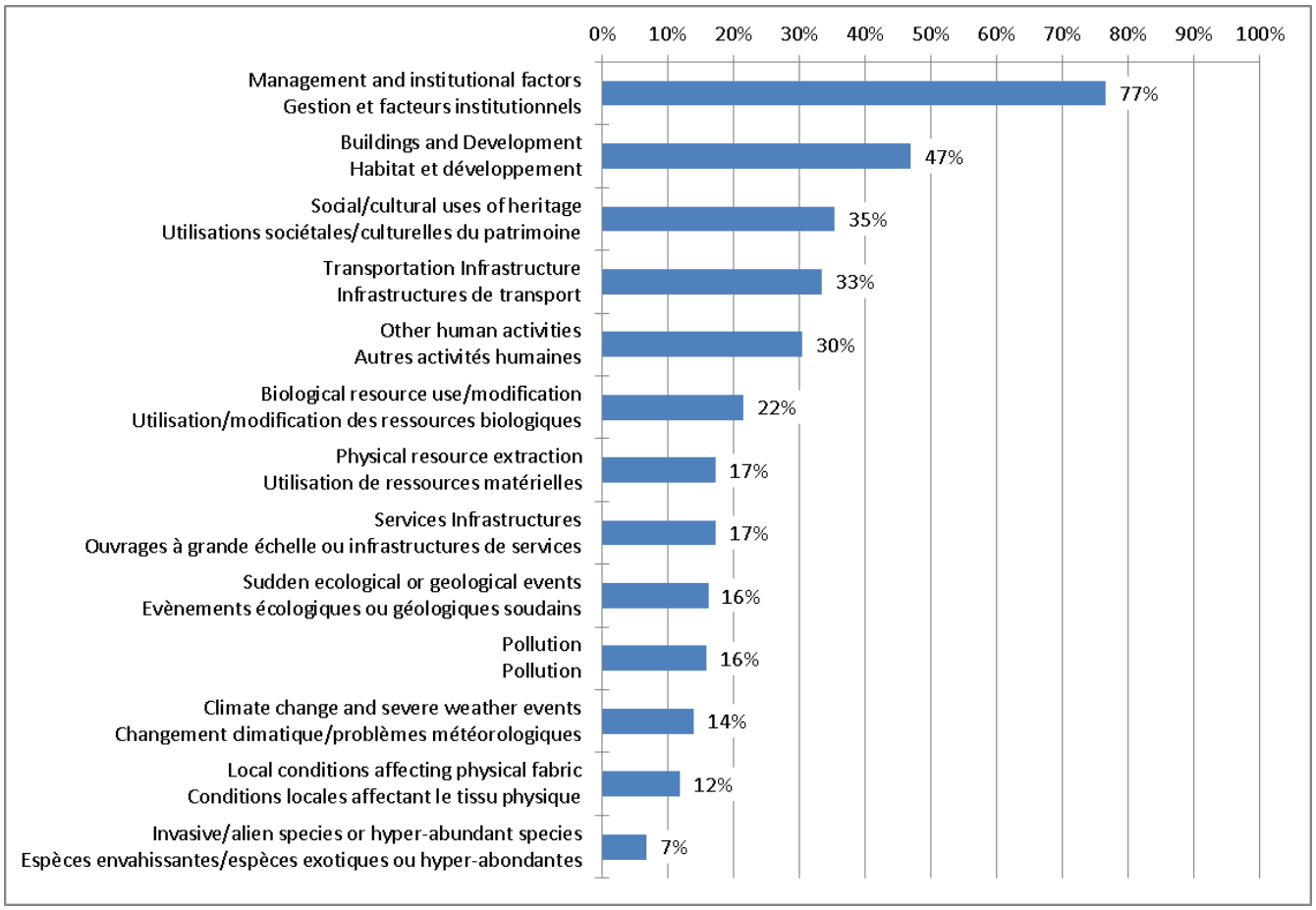


Chart 10: Percentage of properties affected by each of the 13 primary factors between 1979 and 2013

Primary factor	Secondary factor	% of properties affected
Management and institutional factors	Management systems/ management plan	71%
Buildings and Development	Housing	37%
Social/cultural uses of heritage	Impacts of tourism/visitor/recreation	26%
Management and institutional factors	Legal framework	24%
Transportation Infrastructure	Ground transport infrastructure	23%
Other human activities	Illegal activities	22%
Management and institutional factors	Financial resources	19%
Management and institutional factors	Management activities	19%
Management and institutional factors	Human resources	17%
Buildings and Development	Major visitor accommodation and associated infrastructure	14%
Biological resource use/modification	Land conversion	12%
Social/cultural uses of heritage	Identity, social cohesion, changes in local population and community	12%
Physical resource extraction	Mining	10%
Local conditions affecting physical fabric	Water (rain/water table)	10%
Other human activities	Deliberate destruction of heritage	10%
Buildings and Development	Interpretative and visitation facilities	10%

Table 1: Percentage of properties affected by the most encountered secondary factors (i.e. at least 10%)

Primary factor	Secondary factor	Average number of reports produced for each property
Other human activities	Civil unrest	7,7
Other human activities	Illegal activities	5,8
Pollution	Surface water pollution	5,6
Physical resource extraction	Mining	5,2
Climate change and severe weather events	Desertification	5,0
Social/cultural uses of heritage	Identity, social cohesion, changes in local population and community	4,9
Biological resource use/modification	Land conversion	4,8
Biological resource use/modification	Livestock farming/grazing of domesticated animals	4,8
Management and institutional factors	Management systems/ management plan	4,6
Invasive/alien species or hyper-abundant species	Invasive / alien freshwater species	4,6
Invasive/alien species or hyper-abundant species	Translocated species	4,5
Services Infrastructures	Water infrastructure	4,5
Biological resource use/modification	Crop production	4,4
Buildings and Development	Housing	4,1
Transportation Infrastructure	Ground transport infrastructure	4,1

Table 2: Average number of reports produced for each property affected by the most encountered secondary factors (globally)

46. This Section will present each primary factor and its evolution over time, from the factor having the most impact on properties to the one having the less impact, as displayed in Chart 10.

a) Management and Institutional factors

47. With over 3 properties out of 4 negatively impacted by a Management or Institutional factor, this primary factor is largely the most encountered in the SOC reports. It affects 359 properties located in 122 different States Parties (see Chart 11), indicating that this threat is rather widely spread and not limited to any specific region.

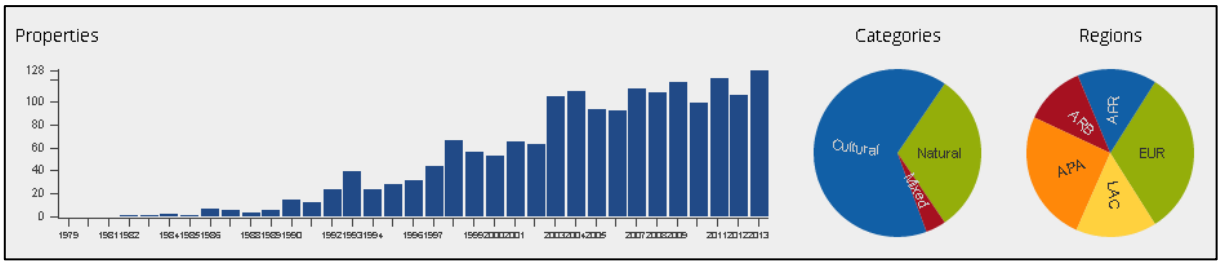


Chart 11: Distribution of the properties affected by "Management and Institutional factors" (per year, category and region)

48. Over the years, an increasing number of properties examined through the SOC process were affected by Management and Institutional factors (from 8% in 1985 to 75% in 2013) (see Chart 12).

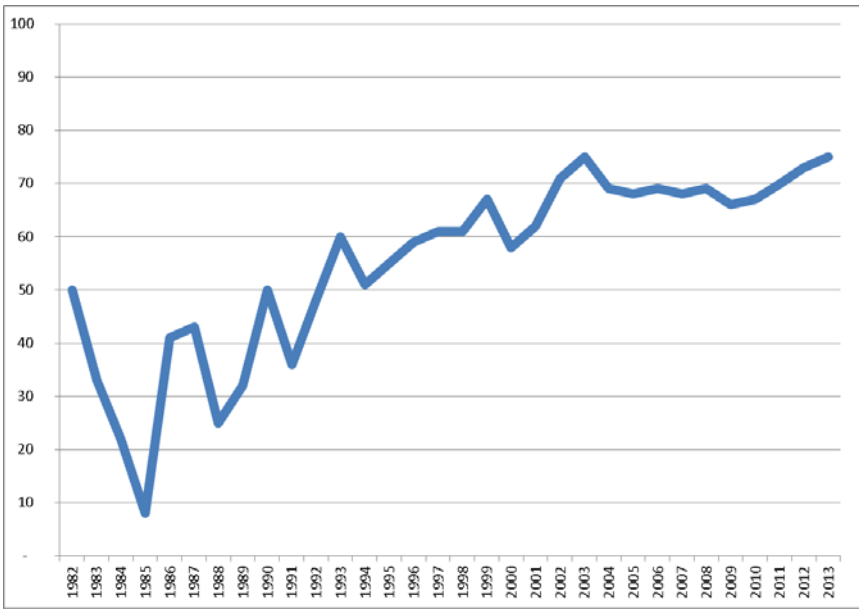


Chart 12: Percentage of properties examined in the SOC process affected by "Management and Institutional" factors over time

49. Out of the 2.642 SOC reports considered, 1.722 mention either an issue with the management plan or system (including boundaries issues) (1.517), management activities (299), financial resources (281), legal framework (280), human resources (215), governance (60), or negative impact of research/monitoring activities (32) (see Table 3).

Threat (secondary factor)	Number of reports	Number of properties affected	Average number of reports / property
Management systems/ management plan	1517	331	4,6
Legal framework	280	112	2,5
Financial resources	281	91	3,1
Management activities	299	88	3,4
Human resources	215	80	2,7
Governance*	60	17*	3,5
High impact research/monitoring activities*	32	16*	2
Low impact research/monitoring activities	0	0	0

Table 3: Average number of reports produced for each property affected by each of the 8 "Management and institutional" secondary factors (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted).

50. Table 3 indicates that some factors affecting the properties take more time than others to be addressed and mitigated. For example, Legal framework issues or lack of resources (both financial and human) take less time to be resolved (between 2.5 and 3.1 reports) than the development of a Management Plan or System and its subsequent adequate implementation (4.6 reports on average).

51. In a number of cases, a report was prepared on the basis of the absence of such plan or system. Subsequently, reports continued to be submitted to the Committee due to their lack of implementation. With the recent publication of resource manuals on "*Managing Historic cities*" (see http://whc.unesco.org/en/series/27/) and "*Managing natural World Heritage*" (see http://whc.unesco.org/en/activities/703/) and the forthcoming publication of such resource manual for cultural properties, it is hoped that this threat will start decreasing in the near future.

52. As evidenced in Chart 13, the threat posed by Management and Institutional factors affects all categories of properties (cultural, mixed and natural) and regions (error bars overlap) with the same rate. We can only notice that, in proportion, properties located in the Europe and North America region tend to be slightly less affected by Management and Institutional factors (errors bars don't overlap) than other regions, or are being reported to the World Heritage Committee less for Management issues than for other threats to their OUV.

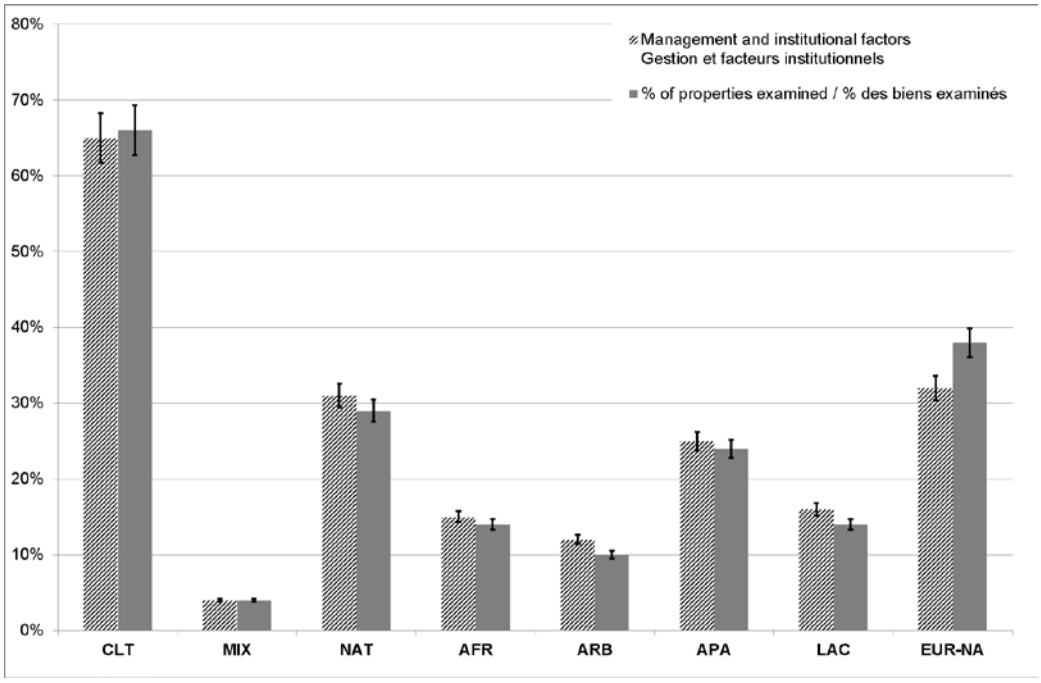


Chart 13: Percentage of properties affected by "Management and Institutional" factors for each category and region (stripes - left), compared to the percentage of properties examined in the SOC process per category and region (dark grey - right) (error bars with 5% value)

Threat (secondary factor)	CLT	MIX	NAT	AFR	ARB	APA	EUR/NA	LAC
Global distribution in SOC reports	66%	4%	30%	14%	10%	24%	38%	14%
Financial resources	48%	3%	**48%**	**33%**	8%	24%	15%	**20%**
Human resources	60%	1%	**39%**	**31%**	**15%**	21%	15%	**18%**
Legal framework	**77%**	2%	21%	13%	**13%**	21%	29%	**25%**
Management activities	**92%**	1%	7%	10%	**16%**	**28%**	30%	16%
Management systems/ management plan	65%	4%	31%	16%	12%	26%	31%	15%
Governance*	59%*	6%*	35%*	6%*	24%*	12%*	12%*	47%*
High impact research/monitoring activities*	94%*	6%*	0%*	0%*	13%*	25%*	31%*	31%*
Low impact research/monitoring activities	0%	0%	0%	0%	0%	0%	0%	0%

Table 4: Distribution of properties within categories and regions for each "Management and institutional" secondary factor. Figures in bold indicate that the percentage is significantly superior to the one expected according to the global distribution of the properties examined through the SOC process (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted).

53. As evidenced by Table 4, management activities and legal framework issues affect mostly cultural properties, while natural properties are more affected by the lack of financial and human resources.

54. In proportion, the lack of resources is more felt in the Africa and the Latin America and the Caribbean regions, while inappropriate management activities seem to affect more the Arab States and Asia-Pacific regions.

55. The lack of Management Plan or System is a widespread factor across the world and across all categories of heritage. Indeed, the percentage of properties of each category and region negatively affected by this factor is similar to that of their global distribution in the SOC process.

56. Finally, the threat related to the lack of legal framework or the inadequacy of the existing one affects proportionally more the properties of the Latin America and the Caribbean region than the properties of other regions (this region stands for 25% of the properties affected by this factor yet it represents 14% of all properties examined through the SOC process).

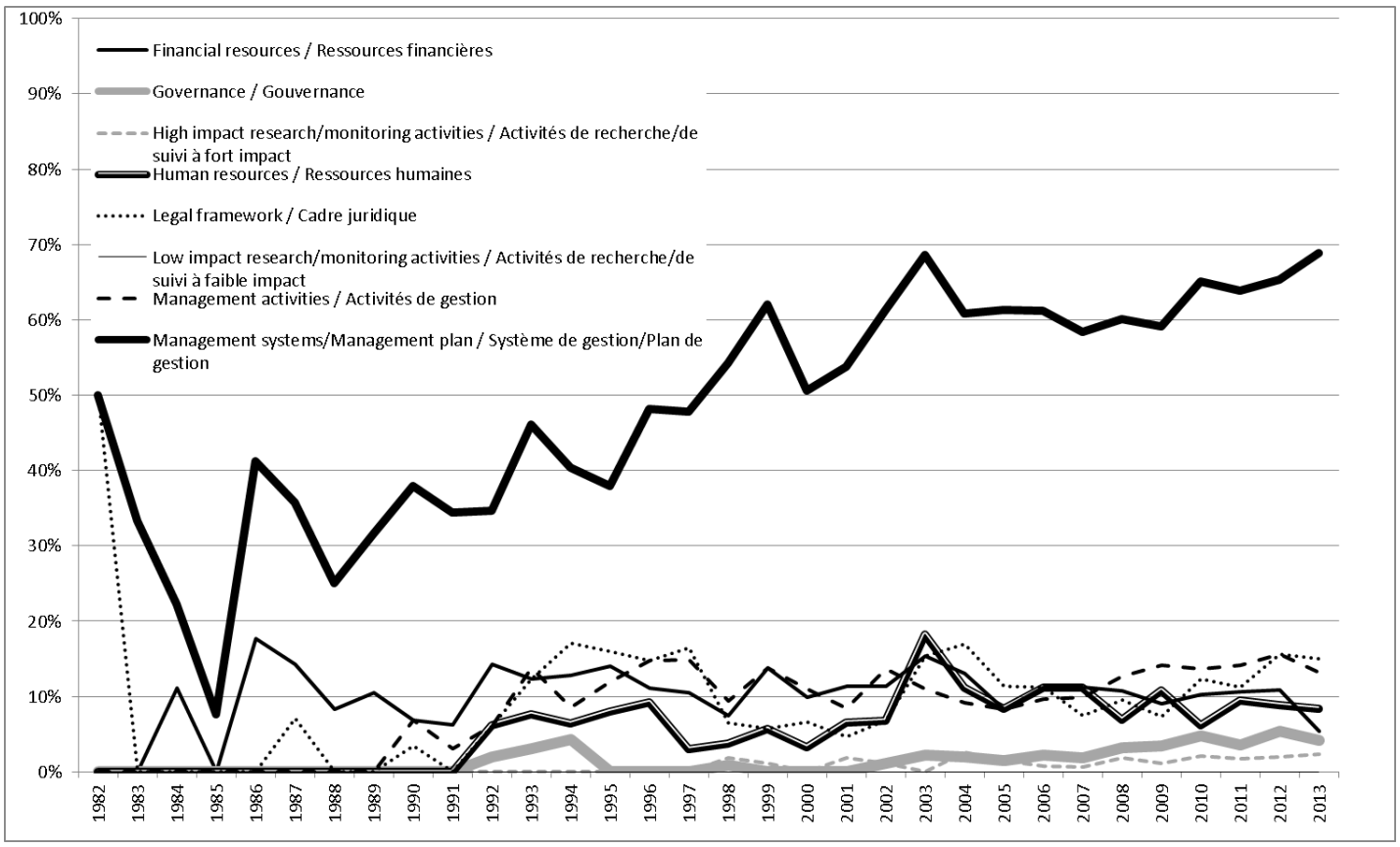


Chart 14: Evolution of the percentage of SOC reports for each of the 8 "Management and Institutional" factors since 1982

57. Looking at the reporting rate of each of the 8 Management and Institutional factors since 1982 (year of the first reporting of such threat) (Chart 14), it appears that the only factor which is clearly on the increase is related to Management plans or systems. This factor was reported in 70% of all the SOC reports in 2013. It should be noted that it includes both the lack of Management Plan or System, the lack of implementation thereof but also the lack of boundaries or the need to clarify/revise them.

58. We can also notice a slight increase in the reporting of lack of proper governance, lack of legal framework (or lack of adequate one) as well as, at a much lower rate, an increase of management activities having a negative impact on the OUV of the properties, either due to lack of expertise and skills or intentional alteration of the authenticity of the property.

b) *Buildings and Development*

59. With almost half of all properties considered in this study concerned (47%), this group of threats is the second most encountered in the state of conservation reports. It affects 220 properties located in 97 different States Parties (see Chart 15).

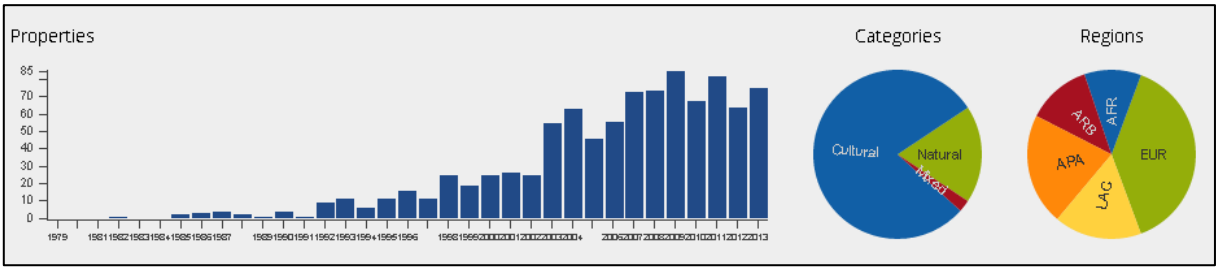


Chart 15: Distribution of the properties affected by "Buildings and Development factors" (per year, category and region)

60. Over the years, we can notice a clear increase in the percentage of properties affected by the Building and Development threats (see Chart 16).

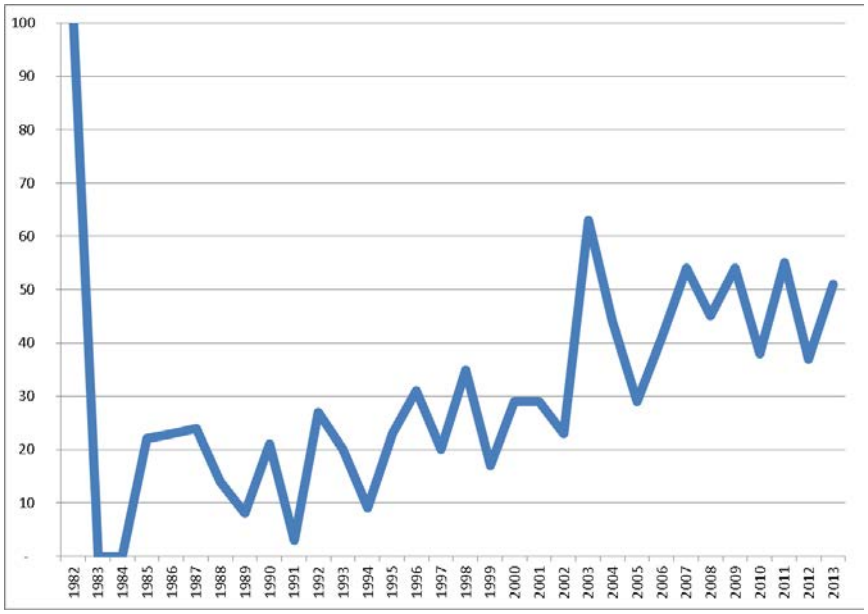


Chart 16: Percentage of properties examined in the SOC process affected by "Buildings and Development" factors over time

61. Out of the 2.642 SOC reports considered between 1979 and 2013, 924 mention a threat due to either housing (726), major visitor accommodation and associated infrastructure (185), interpretative and visitation facility (92), commercial (75) or industrial (30) development.

62. It should be noted that the "Building and development" group of threats only includes housing and major visitor accommodation and associated infrastructure. The other types of infrastructures are taken into account under various other groups of threats, such as "Transportation infrastructures" for airports, metros, tunnels, roads, or under "Services infrastructures" for dams, wind-farms and other localised utilities (see Annex 1 for more details).

63. Table 5 indicates that the mitigation of threats posed by housing projects (such as high-rise buildings, residential areas) tend to require more reporting to the Committee (4.1 reports on average, for each property concerned) than threats posed by the development of interpretative and visitation facilities (average of 2 reports). For housing projects, the States Parties are being more often requested by the World Heritage Committee to provide Environmental Impact Assessments (EIA) or Heritage Impact Assessments (HIA) prior to taking any decision. These

studies are long and costly to conduct, adding on to the delays between the first notification of the threat to the World Heritage Centre and the final reporting to the Committee, once the threat has been mitigated.

Threat (secondary factor)	Number of reports	Number of properties affected	Average number of reports / property
Housing	726	175	4,1
Major visitor accommodation and associated infrastructure	185	65	2,8
Interpretative and visitation facilities	92	47	2
Commercial development	75	31	2,4
Industrial areas*	30	9*	3,3

Table 5: Average number of reports produced for each property affected by each of the 5 "Building and Development" secondary factors (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted).

64. Reporting to the Committee on housing projects is often motivated by the notification of the World Heritage Centre by either the State Party itself in conformity with Paragraph 172 of the *Operational Guidelines* or by a third party, in line with Paragraph 174:

> *172. The World Heritage Committee invites the States Parties to the Convention to inform the Committee, through the Secretariat, of their intention to undertake or to authorize in an area protected under the Convention major restorations or new constructions which may affect the Outstanding Universal Value of the property. Notice should be given as soon as possible (for instance, before drafting basic documents for specific projects) and before making any decisions that would be difficult to reverse, so that the Committee may assist in seeking appropriate solutions to ensure that the Outstanding Universal Value of the property is fully preserved.*
>
> *174. When the Secretariat receives information that a property inscribed has seriously deteriorated, or that the necessary corrective measures have not been taken within the time proposed, from a source other than the State Party concerned, it will, as far as possible, verify the source and the contents of the information in consultation with the State Party concerned and request its comments.*

65. Another cause for delay is also the fact that often, EIAs or HIAs do not take into consideration the specificity of a World Heritage property and its OUV in particular. ICOMOS prepared a "Guidance on Heritage Impact Assessments" and IUCN on "Environmental Assessment and natural World Heritage". Training courses on HIAs are being carried out by ICCROM in order to address the capacity building needs on this new concept (for further reading on this matter, see Document WHC-14/38.COM/7 at http://whc.unesco.org/en/sessions/38COM/documents/).

66. Looking at Chart 17, we can notice that cultural properties are significantly more negatively impacted by "Building and Development" projects than natural properties; one third of them being "Cities" (70 properties out of 220). The natural properties concerned are mostly affected by encroachment problems with neighbouring villages/cities, and major visitor accommodation and associated infrastructures.

67. In 2011, UNESCO adopted a Recommendation concerning the Historic Urban landscapes, to be used as a tool to integrate policies and practices of conservation of the built environment into the wider goals of urban development in respect of the inherited values and traditions of different cultural contexts (see http://whc.unesco.org/en/activities/638/). With time, the relevant authorities will adapt it to their contexts and territories, reducing the threats on heritage due to "Building and Development".

68. All regions are affected by threats related to "Building and Development". However, the Africa and Asia-Pacific regions are globally slightly less impacted than the other regions but remain affected to a certain degree. The Latin America and the Caribbean and the Arab States regions are the only two regions significantly globally more affected than what could be anticipated (5% value error bars do not overlap) with respectively 27 and 37 properties concerned over time (see Chart 17).

69. Table 6 confirms that threats related to "Building and Development" projects affect mostly cultural properties (and significantly less natural properties), especially "commercial developments", "housing" and "interpretative and visitation facilities".

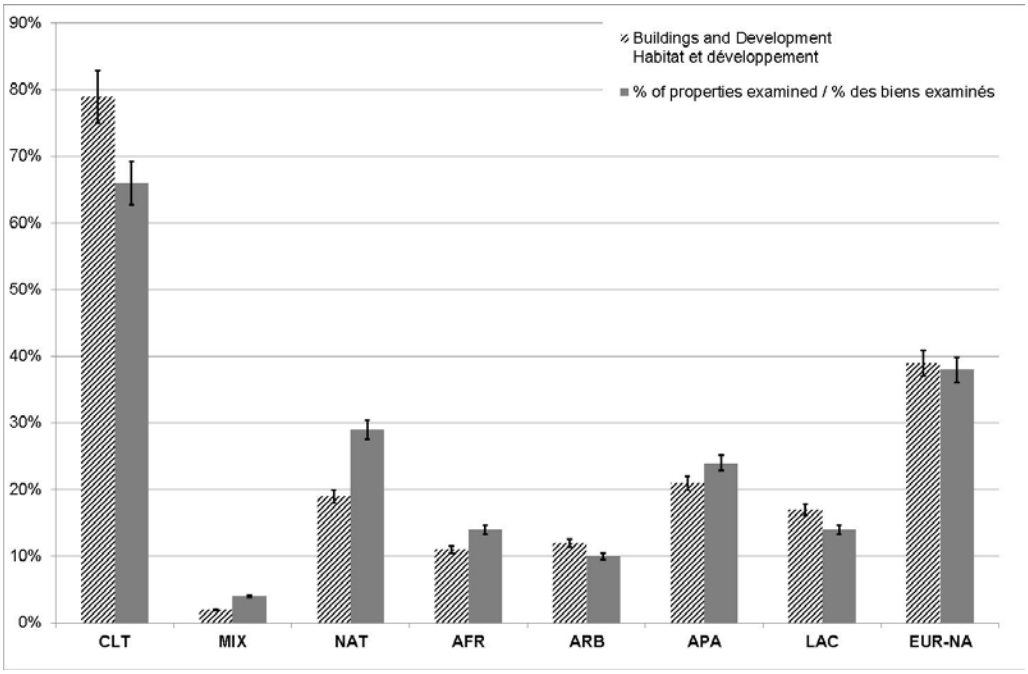


Chart 17: Percentage of properties affected by "Buildings and Development" factors for each category and region (stripes - left), compared to the percentage of properties examined in the SOC process per category and region (dark grey - right) (error bars with 5% value)

Threat (secondary factor)	CLT	MIX	NAT	AFR	ARB	APA	EUR/NA	LAC
Average distribution in SOC reports	66%	4%	30%	14%	10%	24%	38%	14%
Commercial development	**94%**	0%	6%	0%	**13%**	**35%**	26%	**26%**
Housing	**87%**	1%	11%	10%	**14%**	21%	38%	17%
Industrial areas	67%	0%	**33%**	**33%**	0%	22%	22%	22%
Interpretative and visitation facilities	**85%**	4%	11%	13%	11%	**32%**	36%	9%
Major visitor accommodation and associated infrastructure	58%	3%	**38%**	11%	**12%**	20%	35%	22%

Table 6: Distribution of properties within categories and regions for each of the "Buildings and development" secondary factor. Figures in bold indicates that the percentage is significantly superior to the one expected according to the global distribution of the properties examined through the SOC process.

70. On the other hand, natural properties are significantly more affected by the development of "industrial areas" and "major visitor accommodation and associated infrastructure" with respectively 33% and 38% of the properties concerned, when we could expect 30%.

71. The “Building and Development” threats affect some regions significantly more than others. Indeed, the Africa region is mostly impacted by the development of “industrial areas” while the Arab States region is subject mostly to “commercial developments” and “major visitor accommodation and associated infrastructure”. The Asia-Pacific region is mostly affected by “commercial developments” and “interpretative and visitation facilities”; and the Latin America and the Caribbean region mostly by “commercial developments”. Finally, in the Europe and North America region, all threats are present but none at a rate significantly higher than expected.

72. As far as tourism is concerned, the development of “interpretative and visitation facilities” seems to significantly have a stronger negative impact on cultural properties than on natural properties; while the development of “major visitor accommodation and associated infrastructure” has a stronger negative impact on natural properties.

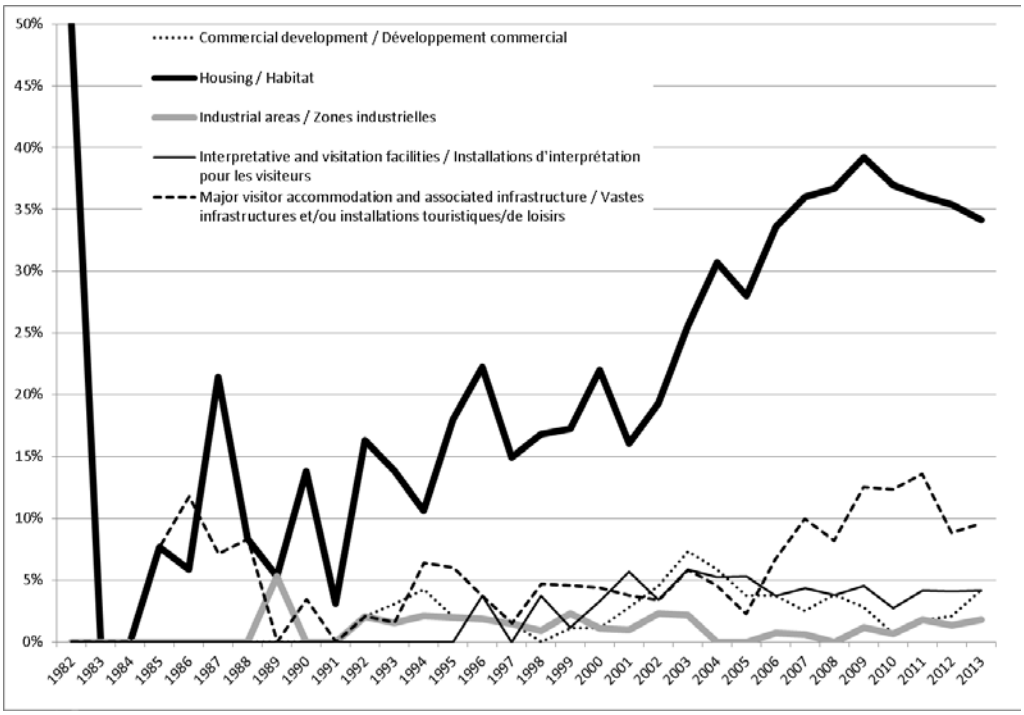


Chart 18: Evolution of the percentage of SOC reports for each of the 5 “Buildings and Development” factors since 1982

73. As evidenced by Chart 18, it appears that the only factor which has drastically increased since 1979 is the “housing” one, followed by “major visitor accommodation and associated infrastructures” issues, but in a much lesser extent.

74. With an increase from 16% in 2001 to 39% in 2009 (240% increase in 8 years) and from 2% in 2005 to 14% in 2011 (600% in 6 years) respectively, the “housing” and “major visitor accommodation and associated infrastructures” factors present the highest rate of increase. We can notice that for the past 3-5 years, those 2 factors seem to be decreasing but the number of properties affected remains at a high level.

75. Lastly, threats related to commercial and industrial developments seem to be on a slight increase since 2010, but affecting a very limited number of properties (a total of 10 properties examined in 2013); no statistically significant analysis can therefore be supported.

c) *Social/cultural uses of heritage*

76. This group of threats affects 166 properties located in 79 different States Parties (see Chart 19). It is the 3rd most common group of threats encountered in the SOC reports examined by the World Heritage Committee between 1979 and 2013.

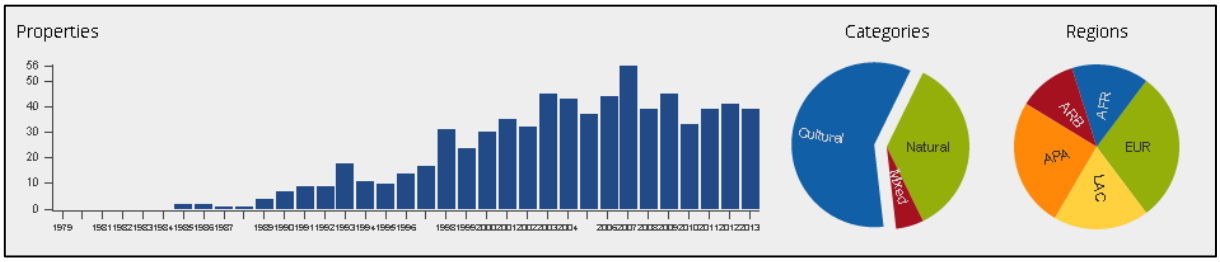


Chart 19: Distribution of the properties affected by "Social/cultural uses of heritage" (per year, category and region)

77. Chart 20 shows that this group of threat has always been affecting on average 30% of the properties examined since 1989, with a peak at 51% in 2003. However, since 2007, this rate has slightly dropped and has been oscillating between 19 and 27%.

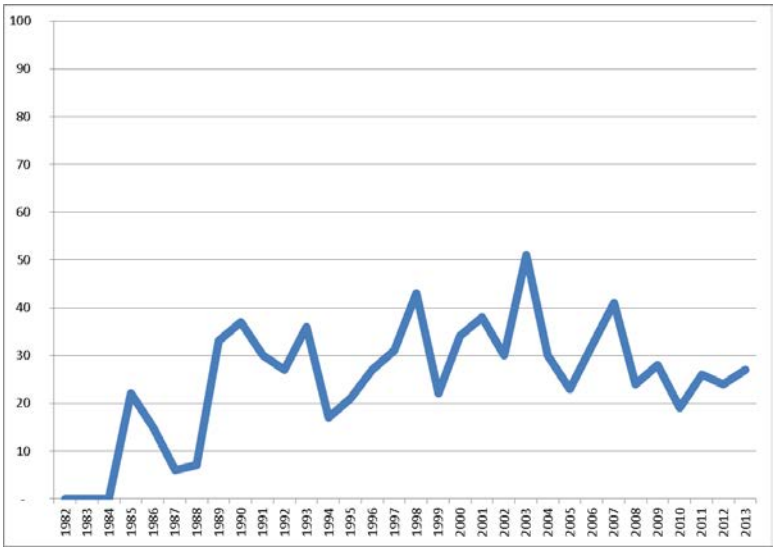


Chart 20: Percentage of properties examined in the SOC process affected by "Social/cultural uses of heritage" over time

78. Out of the 2.642 SOC reports considered between 1979 and 2013, 700 mention a threat due to either impacts due to tourism/visitor or recreation (408), identity, social cohesion or changes in the local population or community (280), changes in the traditional ways of life and knowledge system (28), society's valuing of heritage (26), ritual/spiritual/religious and associative uses (19) or indigenous hunting, gathering and collecting (11).

79. With over 400 reports on 121 different properties located in 64 States Parties, the negative impacts of tourism/visitor or recreation are by far the most common threat of this group. It encompasses among others, inappropriate interpretation (or lack thereof), high levels of visitation, increase of vendors inside/outside the site, etc. The second most common factor relates to identity, social cohesion or changes in the local population or community, including migration to or from site, flow of refugees, etc. (see Table 7).

80. Table 7 also shows that, with respectively an average of 3.4 and 4.9 reports per property, the impacts due to tourism/visitor/recreation and due to Identity, social cohesion, changes in local population and community tend to need more time to be addressed and mitigated than other

threats such as indigenous hunting, gathering and collecting or society's valuing of heritage, with respectively 2.8 and 2.4 reports per property concerned. However, for the latter, the small number of properties concerned does not allow further statistically significant analysis.

Threat (secondary factor)	Number of reports	Number of properties affected	Average number of reports / property
Impacts of tourism/visitor/recreation	408	121	3,4
Identity, social cohesion, changes in local population and community	280	57	4,9
Society's valuing of heritage*	26	11*	2,4
Changes in traditional ways of life and knowledge system*	28	9*	3,1
Ritual/spiritual/religious and associative uses*	19	6*	3,2
Indigenous hunting, gathering and collecting*	11	4*	2,8

Table 7: Average number of reports produced for each property affected by each of the 6 "Social/cultural uses of heritage" secondary factors (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted).

81. Awareness raising activities towards the local communities and their involvement in the management of the properties is key to mitigate these factors. In 2007, the addition by the World Heritage Committee of a 5th "C" (for "Communities") to the Strategic Objectives of the *World Heritage Convention* (together with "Conservation", "Credibility", "Communication" and "Capacity-building") was a move to valorise the crucial role local communities have to play in the implementation of the *Convention*.

82. In addition, as tourism and recreation activities have a negative impact on 25% of all properties examined through the SOC process between 1979 and 2013, actions to sensitize the public to heritage preservation and respect of the sites are essential. Awareness raising campaigns towards decision-makers and planners are also crucial (e.g. to prevent the development of a sport ground in the immediate vicinity of a World Heritage property).

83. Chart 21 demonstrates that natural properties tend to be significantly more affected by "Social/cultural uses of heritage" than cultural and mixed properties.

84. In general, the Latin America and the Caribbean region also seems to be more impacted by "Social/cultural uses of heritage" than the other regions, in proportion of their total number of properties examined through the SOC process, while the Europe and North America region is significantly less affected.

85. Table 8 shows that natural properties tend to be more affected by threats related to "Identity, social cohesion, changes in local population and community" than mixed and cultural properties. The Africa, Arab States as well as Latin America and the Caribbean regions also seem to be significantly more affected by such factors.

86. The negative impacts of "tourism/visitor/recreation" on World Heritage properties are felt more strongly in the Asia-Pacific region in comparison to the other regions.

87. Although the number of properties affected is too low to conduct any significant statistical analysis, Table 8 shows that 100% of the properties impacted negatively by "Changes in traditional ways of life and knowledge system" are cultural properties while 100% of those affected by "Indigenous hunting, gathering and collecting" are natural properties.

88. Finally, the changes in values of heritage or conflicting values seem to affect mostly cultural and mixed properties, in the Arab States and Latin America and the Caribbean regions; but due to the low number of properties concerned, no statistically significant analysis can be proposed.

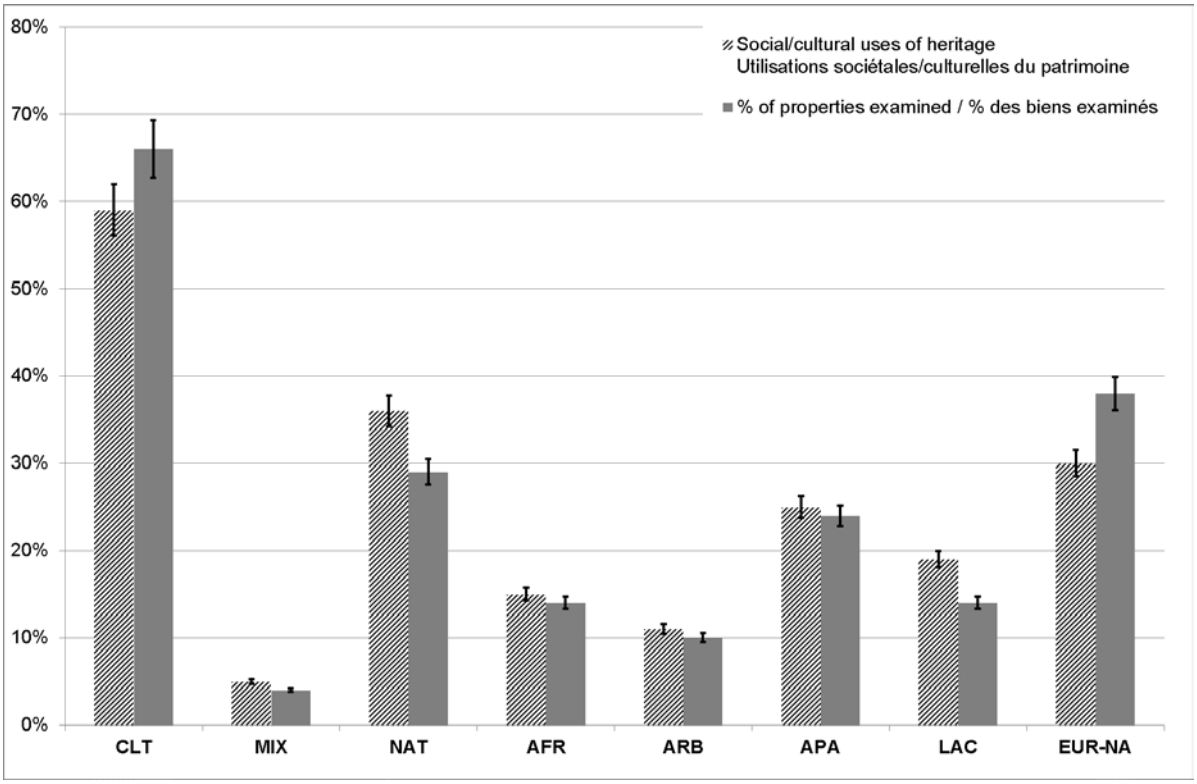


Chart 21: Percentage of properties affected by "Social/cultural uses" of heritage for each category and region (stripes - left), compared to the percentage of properties examined in the SOC process per category and region (dark grey - right) (error bars with 5% value)

Threat (secondary factor)	CLT	MIX	NAT	AFR	ARB	APA	EUR/NA	LAC
Average distribution in SOC reports	66%	4%	30%	14%	10%	24%	38%	14%
Identity, social cohesion, changes in local population and community	54%	4%	**42%**	**30%**	**18%**	21%	7%	**25%**
Impacts of tourism/visitor / recreation	62%	6%	32%	8%	10%	**29%**	36%	17%
Changes in traditional ways of life and knowledge system*	100%*	0%*	0%*	0%*	56%*	22%*	11%*	11%*
Indigenous hunting, gathering and collecting*	0%*	0%*	100%*	50%*	0%*	0%*	25%*	25%*
Ritual/spiritual/religious and associative uses*	83%*	0%*	17%*	0%*	17%*	67%*	17%*	0%*
Society's valuing of heritage*	91%*	9%*	0%*	9%*	18%*	27%*	18%*	27%*

Table 8: Distribution of properties within categories and regions for each of the "Social/cultural uses of heritage" secondary factor. Figures in bold indicates that the percentage is significantly superior to the one expected according to the global distribution of the properties examined through the SOC process (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted).

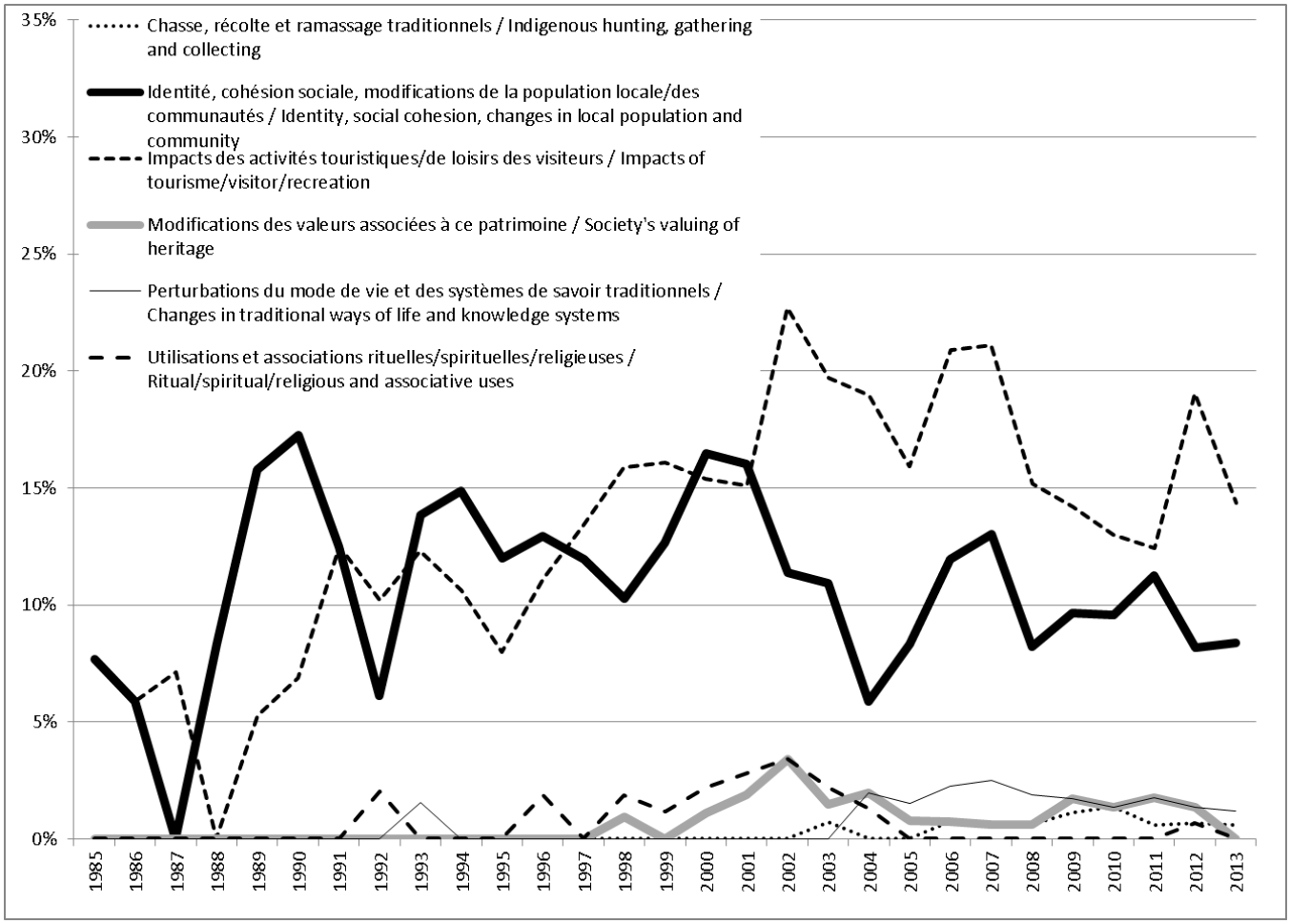


Chart 22: Evolution of the percentage of SOC reports for each of the 6 "Social/cultural uses of heritage" factors since 1985

89. Over time, the most common threat ("Impacts of tourism/visitor/recreation") has continuously increased from 1988 until 2002, and seems to be globally decreasing since that time.

90. The threats related to "Identity, social cohesion, changes in local population and community" were mentioned in between 6% and 17% of the all the SOC reports for the 1989-2007 period in a very irregular pattern, but seem to be slightly more regular since 2008, affecting between 8% and 11%.

91. All other threats related to "Social/cultural uses of heritage" barely affected more than 3% of the properties examined, hence it is difficult to make any analysis concerning their trend.

d) Transportation Infrastructure

92. This group of threats affects 157 properties located in 78 different States Parties (see Chart 23). It has an impact on all regions and categories of heritage.

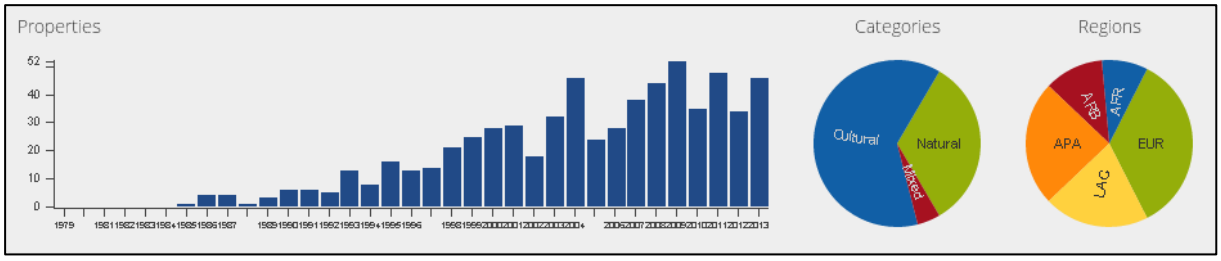


Chart 23: Distribution of the properties affected by "Transportation infrastructure" (per year, category and region)

93. Chart 24 shows that this group of threat has always been affecting on average 24.6% of the properties examined since 1985, ranging from 7% in 1988 to 36% in 2003. However, since 2006, it seems to stabilize and affect between 20% and 30% of the properties examined (representing between 28 and 52 different properties).

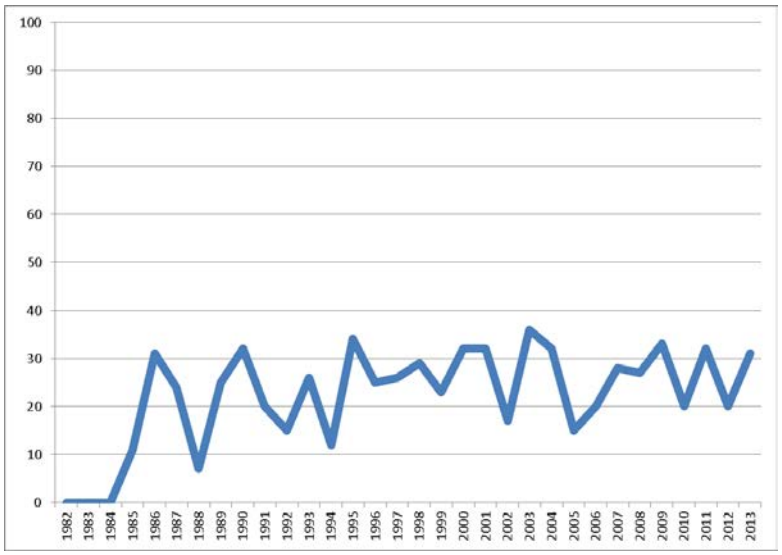


Chart 24: Percentage of properties examined in the SOC process affected by "Transportation infrastructure" over time

94. Out of the 2.642 SOC reports considered, 636 mention either an issue related to the development of ground transport infrastructures (438), or the effects arising from the use of transportation infrastructure (129), issue related to the development of marine transport infrastructure (77), air transport infrastructure (27) or in lesser extent, underground transport infrastructure (24).

95. With an impact on over 2 thirds of the properties (108 out of 157 – see Table 9), the development of ground transport infrastructures (e.g. roads, car parks, railways, bridges) is the most common and widely spread of the "Transportation infrastructure" threats.

96. The second most common factor relates to the effects arising from the use of such infrastructures (e.g. pollution and vibrations due to traffic).

Threat (secondary factor)	Number of reports	Number of properties affected	Average number of reports / property
Ground transport infrastructure	438	108	4,1
Effects arising from use of transportation infrastructure	129	46	2,8
Marine transport infrastructure*	77	23*	3,3
Underground transport infrastructure*	24	11*	2,2
Air transport infrastructure*	27	10*	2,7

Table 9: Average number of reports produced for each property affected by each of the 5 "Transportation infrastructure" secondary factors (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted).

97. Table 9 also shows that, with an average of 4.1 reports per property (ranging from 2.9 for cultural properties to 5.6 for natural properties), the impacts due to the development of ground transport infrastructures tend to need more time to be addressed and mitigated than other threats such as the effects arising from the use of such structures, with 2.8 reports per property concerned.

98. It is also interesting to note the difference in the number of reports required to mitigate a threats according to the regions concerned. For example, threats related to ground transport infrastructure require 7.3 reports in the Africa region while they require 2.3 or 3.9 reports in the Arab States and Asia-Pacific regions, respectively. However, the number of properties concerned by the latters is too small to make any statistically significant conclusion.

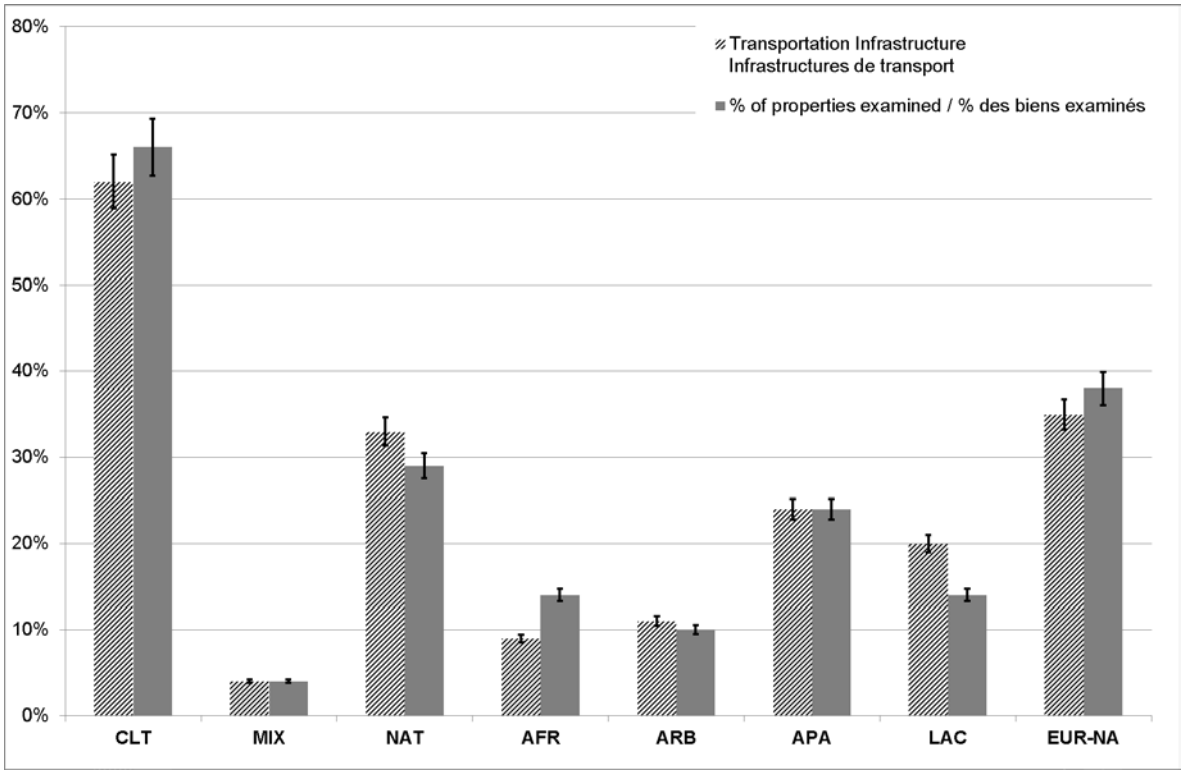


Chart 25: Percentage of properties affected by "Transportation infrastructure" for each category and region (stripes - left), compared to the percentage of properties examined in the SOC process per category and region (dark grey - right) (error bars with 5% value)

99. Chart 25 indicates that threats due to "Transport infrastructure" tend to affect proportionally more natural properties than cultural or mixed properties; and mostly in the Latin America and the Caribbean region.

Threat (secondary factor)	CLT	MIX	NAT	AFR	ARB	APA	EUR/NA	LAC
Average distribution in SOC reports	66%	4%	30%	14%	10%	24%	38%	14%
Ground transport infrastructure	57%	**6%**	**37%**	9%	12%	**28%**	33%	**18%**
Effects arising from use of transportation infrastructure	**74%**	4%	22%	4%	**15%**	24%	30%	**26%**
Air transport infrastructure*	60%	0%	40%	10%	0%	40%	30%	20%
Marine transport infrastructure*	65%	4%	30%	9%	13%	17%	35%	26%
Underground transport infrastructure*	100%*	0%*	0%*	0%*	18%*	9%*	36%*	36%*

Table 10: Distribution of properties within categories and regions for each of the "Transportation infrastructure" secondary factor. Figures in bold indicates that the percentage is significantly superior to the one expected according to the global distribution of the properties examined through the SOC process (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted).

100. Table 10 shows that, while the development of ground transport infrastructures seems to have more important negative impact on mixed and natural properties, the effects arising from the use thereof seems to affect cultural properties in a larger extent.

101. We can also notice that the development of underground transport infrastructures affects exclusively cultural properties. However, the number of properties impacted is too small (11, see Table 9) to reach any significant conclusion.

102. Looking at the way the different regions are impacted by threats related to "Transportation infrastructure", Table 10 shows that the Latin America and the Caribbean region seems to be more generally vulnerable to this threat than the other 4 regions. Both Latin America and the Caribbean and the Arab States regions suffer more specifically from the effects arising from the use of such transportation infrastructures, and in a significant manner.

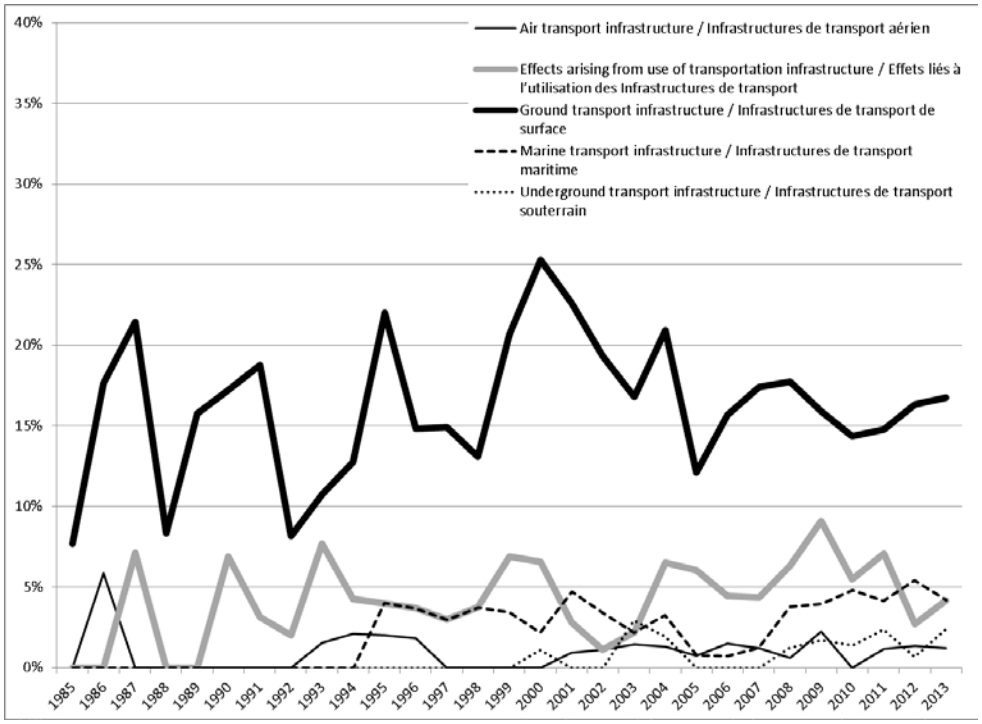


Chart 26: Evolution of the percentage of SOC reports for each of the 5 "Transportation infrastructure" factors since 1985

103. Over time, the most common threat (ground transport infrastructure) has always been reported in between 8% and 25% of the SOC reports. Although this factor decreased between 2000 (25%) and 2005 (12%), it seems to be on the increase again since 2005 but at a lower overall rate (from 12% in 2005 to 17% in 2013).

104. The second most common factor impacting properties is related to the effects arising from the use of transportation infrastructures. This threat reached its peak in 2009, with 9% of the properties examined being affected, but seems to be now on the decrease with 4% of the reports mentioning it in 2013.

105. All other threats related to "Transportation infrastructure" never affected more than 5% of the properties examined, hence it is difficult to make any analysis concerning their trend. However, it seems that the development of marine transport infrastructures is threatening more properties since 2005 (from 1% in 2005 to 5% in 2012). Less than 30 properties being concerned by this threat, no statistically significant analysis can therefore be conducted beside this general observation.

e) *Other human activities*

106. This group of threats affects 143 properties located in 79 different States Parties (see Chart 27) and is encountered across all regions of the world and all categories of heritage.

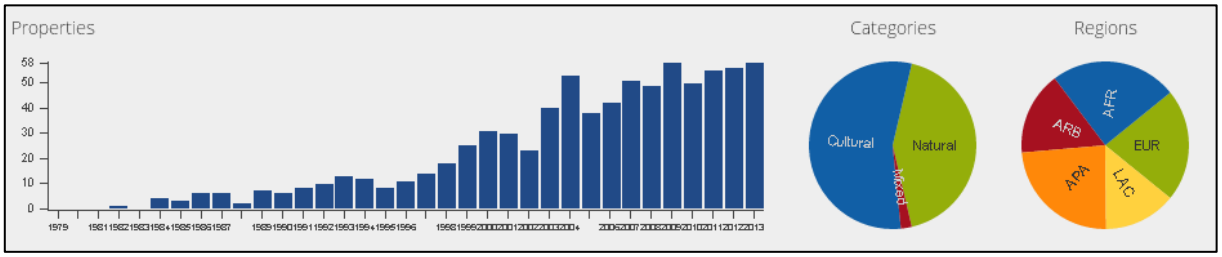


Chart 27: Distribution of the properties affected by "Other human activities" (per year, category and region)

107. As evidenced in Chart 28, this group of threats has been affecting an increasing proportion of properties over the years. Indeed, in 1994, 18% of the properties subject to a SOC reports were affected by human activities such as illegal activities, war, civil unrest and deliberate destruction of heritage, yet 39% of them are affected in 2013.

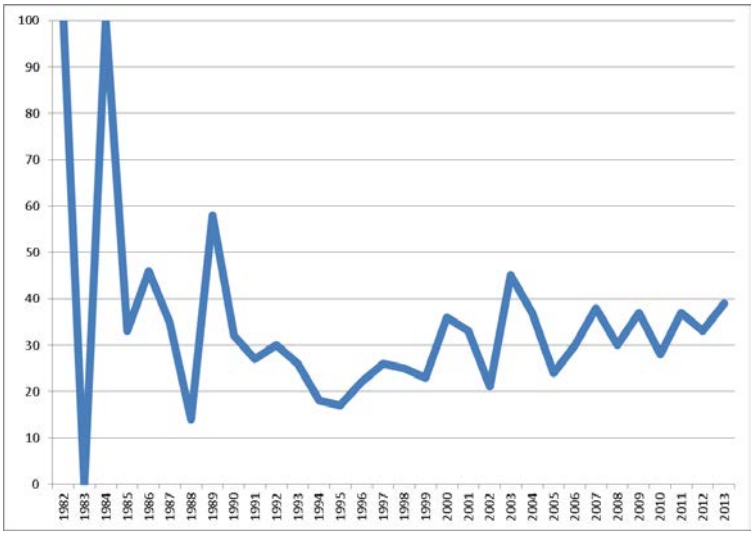


Chart 28: Percentage of properties examined in the SOC process affected by "Other human activities" over time

108. Out of the 2.642 SOC reports considered between 1979 and 2013, 781 mention a threat due to either illegal activities such as poaching, illegal logging, illegal trade, illegal constructions, looting, etc. (600), civil unrest (176) or war (92), deliberate destruction of heritage (e.g. graffiti, vandalism)(153), or terrorism (2) and military training (1).

Threat (secondary factor)	Number of reports	Number of properties affected	Average number of reports / property
Illegal activities	600	103	5,8
Deliberate destruction of heritage	153	47	3,3
Civil unrest*	176*	23*	7,7*
War*	92*	23*	4*
Terrorism*	2*	2*	1*
Military training*	1*	1*	1*

Table 11: Average number of reports produced for each property affected by each of the 6 "Other human activities" secondary factors (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted).

109. As evidenced by Table 11, of all the "Other human activities" factors, the threats related to illegal activities are the most common and require the longest period of time to be mitigated. Indeed, 5.8 reports per property are requested on average, yet 3.3 reports are required for example to mitigate threats related to the deliberate destruction of heritage.

110. The average number of reports to address illegal activities varies a lot according to the regions. It fluctuates from 3.7 reports per property in the Asia-Pacific region to 9.1 in the Africa region (up to 11.4 reports per property to specifically address natural properties in Africa).

111. Civil unrest-related factors also require numerous years to be mitigated (average: 7.7 reports per property). However, the small number of properties concerned (23) doesn't allow the conduct of statistically significant analysis on this specific matter.

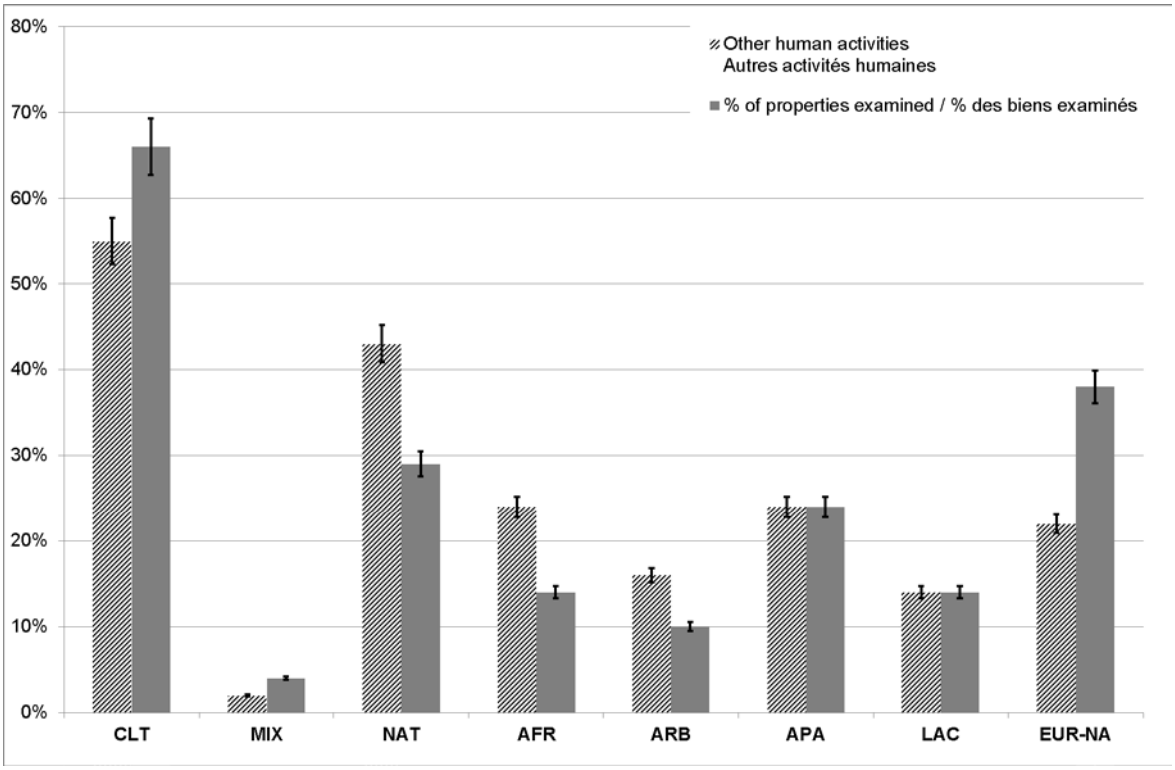


Chart 29: Percentage of properties affected by "Other human activities" for each category and region (stripes - left), compared to the percentage of properties examined in the SOC process per category and region (dark grey - right) (error bars with 5% value)

112. Chart 29 shows that threats related to "Other human activities" as a whole seem to affect more natural properties than cultural and mixed ones, in proportion; and especially in the Africa and Arab States regions. The only region less impacted is Europe and North America where the

percentage of properties affected is significantly lower (22%) than the percentage expected (38%).

113. However, looking more closely at the specific factors (see Table 12), we can notice that the deliberate destruction of heritage affects mostly cultural properties (94%). This is understandable considering the nature of the threat itself; deliberate destruction of heritage consisting of acts of vandalism, graffiti on buildings or arson. The only two natural properties affected are geological and fossils sites.

114. Civil unrest-related factors also seem to affect mostly natural properties (78%) and in the Africa region (65%). However, this is only a perceived trend. As indicated above, it is not statistically significant as the number of properties concerned is too small.

115. Table 12 also shows that the Arab States region also appears to be more threatened by deliberate destruction of heritage than the other regions in proportion to the number of properties subject to a SOC reports between 1979 and 2013; while the Asia-Pacific and Africa regions seem more sensitive to illegal activities, mostly poaching, illegal logging, looting and illegal constructions.

Threat (secondary factor)	CLT	MIX	NAT	AFR	ARB	APA	EUR/NA	LAC
Average distribution in SOC reports	66%	4%	30%	14%	10%	24%	38%	14%
Deliberate destruction of heritage	**94%**	2%	4%	13%	**21%**	23%	30%	13%
Illegal activities	40%	3%	**57%**	**29%**	13%	**28%**	16%	15%
Civil unrest*	22%*	0%*	78%*	65%*	0%*	22%*	4%*	9%*
Military training*	100%*	0%*	0%*	0%*	0%*	0%*	0%*	100%*
Terrorism*	100%*	0%*	0%*	0%*	0%*	0%*	100%*	0%*
War*	48%*	4%*	48%*	61%*	30%*	0%*	9%*	0%*

Table 12: Distribution of properties within categories and regions for each of the "Other human activities" secondary factor. Figures in bold indicates that the percentage is significantly superior to the one expected according to the global distribution of the properties examined through the SOC process (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted).

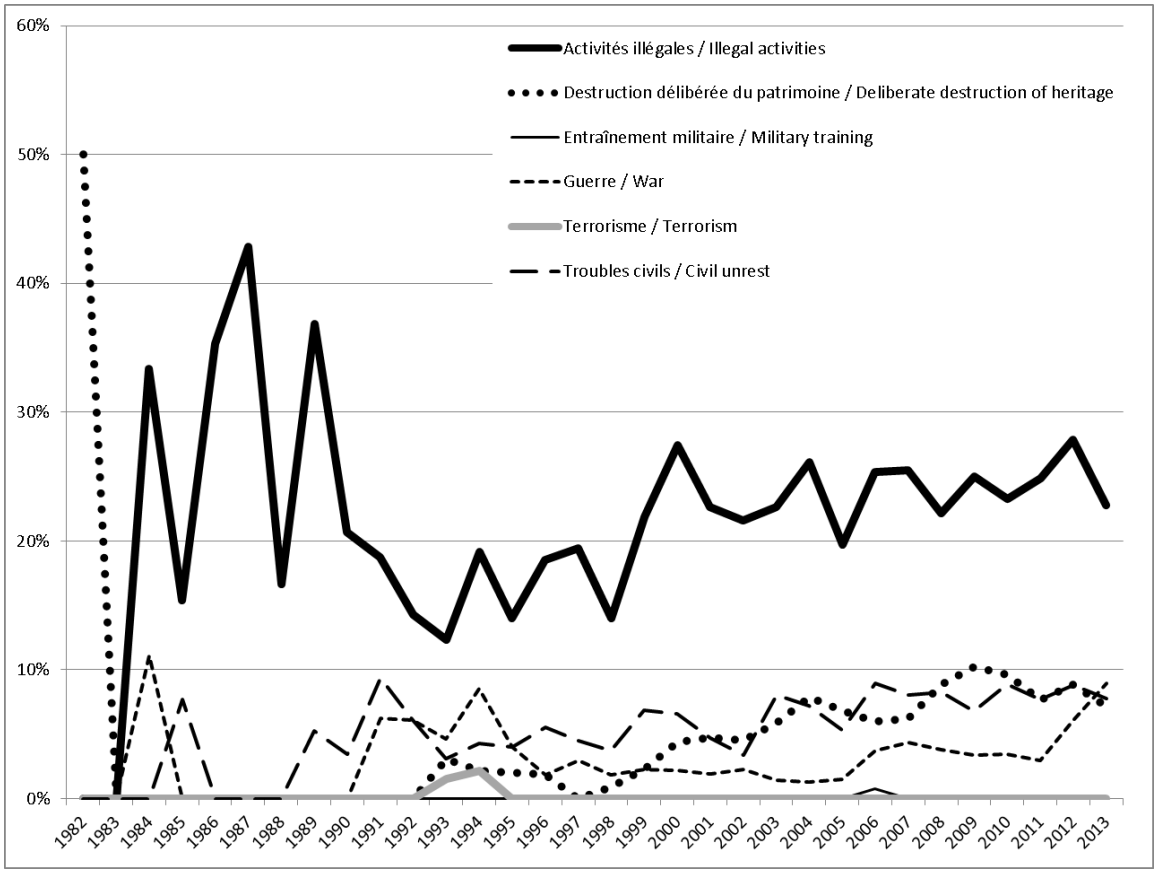


Chart 30: Evolution of the percentage of SOC reports for each of the 6 "Other human activities" factors since 1982

116. As evidenced by Chart 30, since 1993, the illegal activities threat increased from 12% of the SOC reports to 28% in 2012. It reached much higher percentages in the early years (e.g. 1984, 1987 or 1989) but the number of properties concerned was very small at that time, hence the data are not statistically significant.

117. Similarly, the threat of deliberate destruction of heritage has continuously increased since 1997, from 0% to 10% in 2009. However, it seems that this threat is slightly decreasing since 2009 (10% in 2009 to 8% in 2013).

118. A factor which seems to be rapidly increasing concerns wars. The reporting of this factor has indeed increased from 1% of the SOC reports in 2003 to 9% in 2013 (800% increase over 10 years), with a drastic change of pace in 2011 when it increased from 3% to 9% in a 3-year period.

119. Likewise, civil unrest seems to have been on the increase since 1993 (3% to 9% in 2012). However, the total number of properties affected by these two factors (war and civil unrest) is small and no statistically significant analysis can be made, but it would be interesting to closely monitor these factors in the future.

f) Biological resource use/modification

120. With over 20% of all properties of this study, this group of threats affects 101 properties located in 63 different States Parties (see Chart 31). It impacts all regions of the world and all categories of heritage (natural, mixed, cultural).

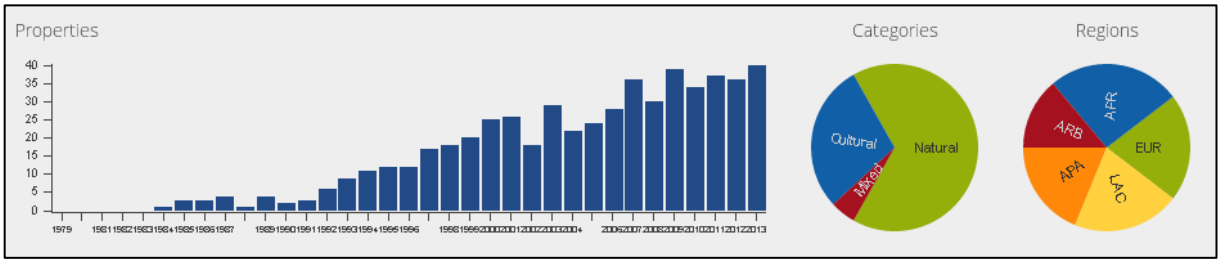


Chart 31: Distribution of the properties affected by "Biological resource use/modification" (per year, category and region)

121. This group of threats is globally on the increase since 1991, with variations from 10% in 1991 to 33% in 2003 of the properties subject to a SOC report (see Chart 32).

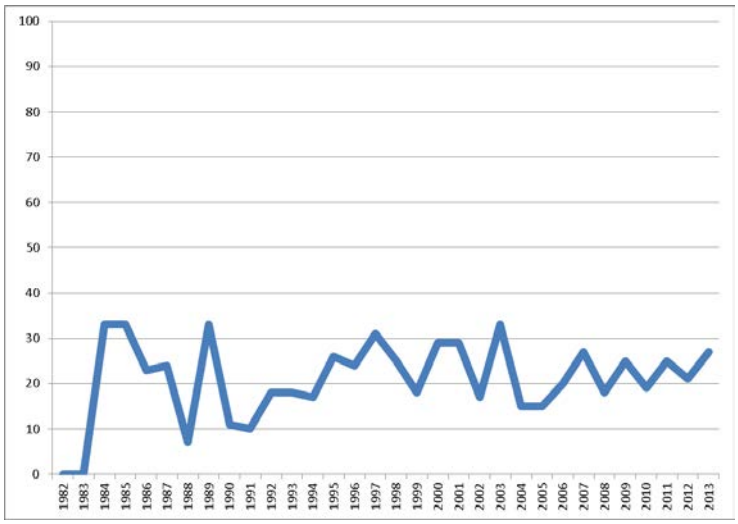


Chart 32: Percentage of properties examined in the SOC process affected by "Biological resource use/modification" over time

122. Out of the 2.642 SOC reports considered between 1979 and 2013, 542 mention a threat due to either Land conversion (e.g. agriculture developments, etc.) (280), Livestock farming/grazing of domesticated animals (173), Fishing/collecting aquatic resources (71), Forestry/wood production (logging, pulp production, etc.)(78), Crop production (74), Subsistence hunting (i.e. not for economic benefit) (27) or Commercial hunting (24).

123. As evidenced by Table 13, the number of reports required to mitigate a threat related to "Biological resource use/modification" is comprised between 3 (for Fishing/collecting aquatic resources or for Commercial/Subsistence hunting) and 4.8 (for Land conversion or Livestock farming/grazing of domesticated animals).

124. There are however noticeable variations according to the category of heritage concerned. For example, mitigating threats such as land conservation for a natural property requires an average of 5.9 reports when it requires an average of 3.5 reports for a cultural property. It is interesting to note here that out of all the cultural properties affected by "Biological resource use/modification", 86% are impacted by land conversion issues.

Threat (secondary factor)	Number of reports	Number of properties affected	Average number of reports / property
Land conversion	280	58	4,8
Livestock farming/grazing of domesticated animals	173	36	4,8
Fishing/collecting aquatic resources*	71	24*	3
Forestry / wood production*	78	21*	3,7
Crop production*	74	17*	4,4
Subsistence hunting*	27	9*	3
Commercial hunting*	24	8*	3
Aquaculture	0	0	0
Commercial wild plant collection	0	0	0
Subsistence wild plant collection	0	0	0

Table 13: Average number of reports produced for each property affected by each of the 6 "Biological resource use/modification" secondary factors (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted).

125. Chart 33 shows that threats related to "Biological resource use/modification", as whole, affect significantly more natural properties than cultural and mixed ones. Indeed, natural properties represent 66% of all properties affected by at least one "Biological resource use/modification"-related factor while they represent 30% of all properties subject to a SOC report. This is diametrically the opposite for cultural properties.

126. Furthermore, the Africa, Arab States and Latin America and the Caribbean regions seem to be the most sensitive to those factors. These 3 regions account for respectively 26%, 14% and 21% of the properties affected by this group of threats, yet they represent 14%, 10% and 14% of all properties considered in the study.

127. The only region significantly less impacted is Europe and North America, where the percentage of properties affected is lower (21%) than the percentage expected (38%). Similarly, but to a lesser extent, the Asia-Pacific region is also less impacted by this group of threats.

128. Table 14 confirms that natural properties are, in proportion, significantly more affected by threats related to "Biological resource use/modification" than mixed and cultural properties.

129. However, the analysis can only be conducted over two factors (Land conversion; Livestock farming/grazing of domesticated animals), all other having an impact on too few properties for the analysis to bring any significant results.

130. Land conversion issues, the most common threats in this group, have an impact on both natural and cultural properties, but affect significantly more natural properties (53% instead of the expected 30%). The Africa, Arab States and Latin America and the Caribbean regions appear to be the most sensitive to this specific factor.

131. The other threat having a strong impact on properties relates to Livestock farming/grazing of domesticated animals and impacts mostly natural properties (83%). Half of the properties affected by this factor are located in the Africa region, which is significantly the most impacted; followed by the Arab States and Latin America and the Caribbean regions.

132. Although the results are not statistically significant, it is interesting to note that the Africa region seems to be the most sensitive to hunting (both commercial and subsistence) and crop production while the Europe and North America seems to be the most sensitive to forestry/wood production matters.

133. Between 1979 and 2013, aquaculture, subsistence and commercial wild pant collection have never been reported to the World heritage Committee in a SOC report as threats affecting the Outstanding Universal Value of properties.

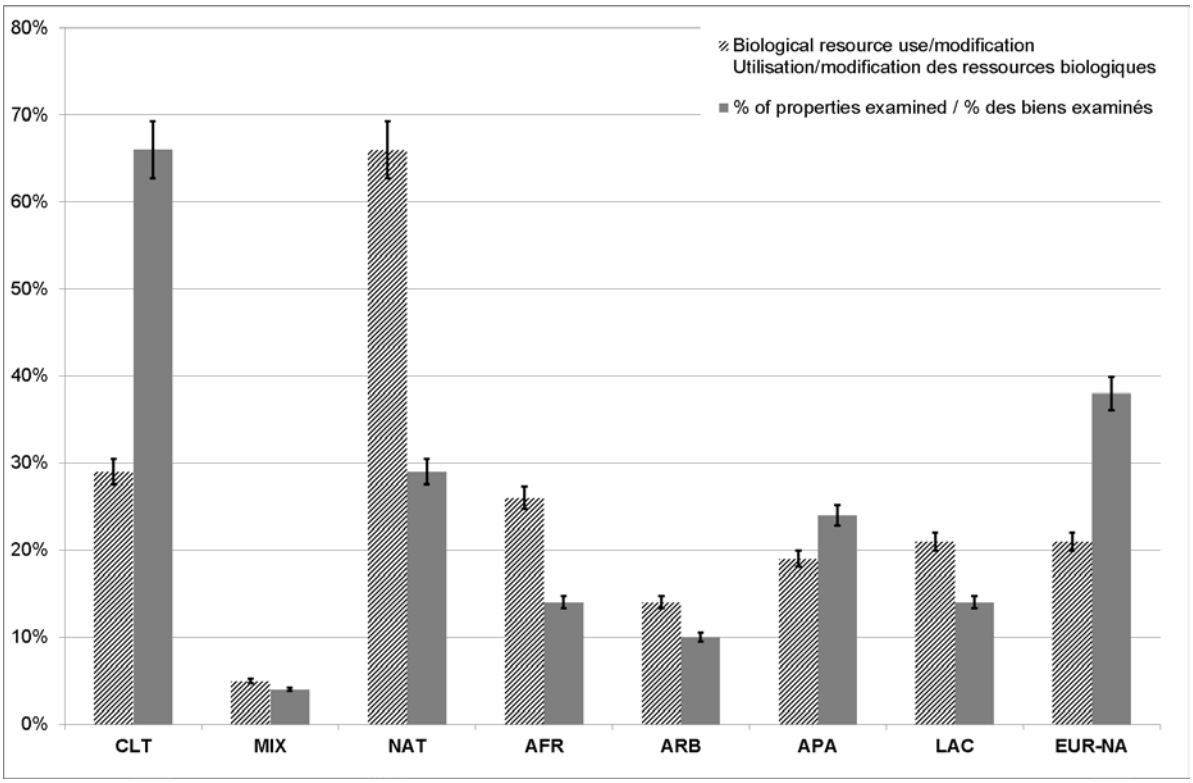


Chart 33: Percentage of properties affected by "Biological resource use/modification" for each category and region (stripes - left), compared to the percentage of properties examined in the SOC process per category and region (dark grey - right) (error bars with 5% value)

Threat (secondary factor)	CLT	MIX	NAT	AFR	ARB	APA	EUR/NA	LAC
Average distribution in SOC reports	66%	4%	30%	14%	10%	24%	38%	14%
Land conversion	43%	3%	**53%**	**31%**	**17%**	19%	9%	**24%**
Livestock farming/grazing of domesticated animals	14%	3%	**83%**	**50%**	**14%**	3%	6%	**28%**
Commercial hunting*	0%*	0%*	100%*	63%*	0%*	13%*	13%*	13%*
Crop production*	24%*	6%*	71%*	35%*	12%*	18%*	12%*	24%*
Fishing/collecting aquatic resources*	8%*	0%*	92%*	29%*	8%*	29%*	21%*	13%*
Forestry /wood production*	0%*	14%*	86%*	19%*	0%*	14%*	48%*	19%*
Subsistence hunting*	0%*	0%*	100%*	67%*	11%*	0%*	22%*	0%*
Aquaculture	0%	0%	0%	0%	0%	0%	0%	0%
Subsistence wild plant collection	0%	0%	0%	0%	0%	0%	0%	0%
Commercial wild plant collection	0%	0%	0%	0%	0%	0%	0%	0%

Table 14: Distribution of properties within categories and regions for each of the "Biological resource use/modification" secondary factor. Figures in bold indicates that the percentage is significantly superior to the one expected according to the global distribution of the properties examined through the SOC process (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted).

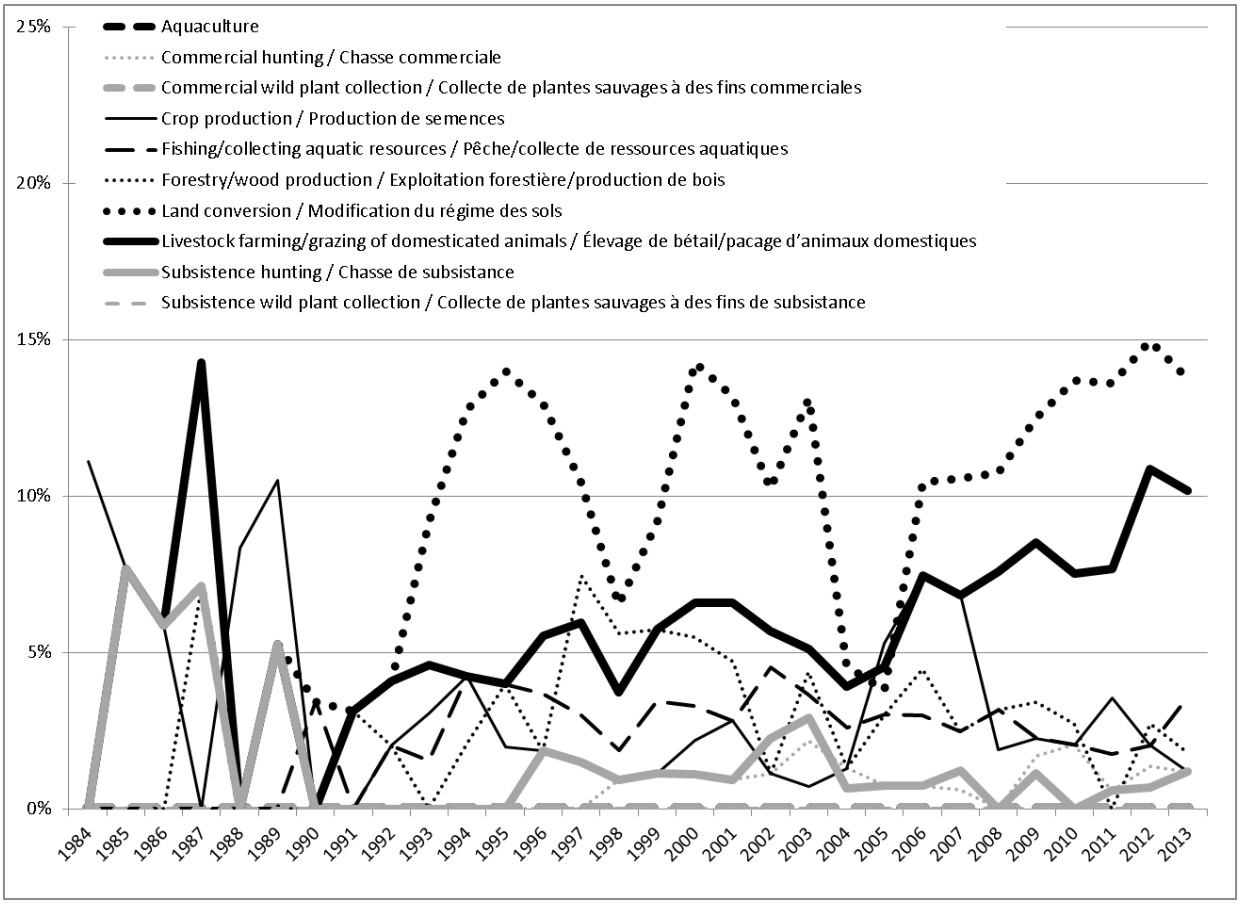


Chart 34: Evolution of the percentage of SOC reports for each of the 10 "Biological resource use/modification" factors since 1984

134. Chart 34 shows the evolution of each of these factors over the years.

135. Although the "land conversion" factor had a few peaks in history (e.g. in 1995, 2000 and 2003), these were one-off events. Since 2005, we can notice a significant and constant increase of this factor in the SOC reports (from 4% in 2005 to 15% in 2012) (275% increase in 8 years).

136. A similar trend can be noticed for the second most encountered threat ("livestock farming/grazing of domesticated animals"), which has been constantly increasing between 2004 (4%) and 2012 (11%).

137. It is more difficult to identify trends for the other factors due to the reduced number of properties they have impacted over time.

g) *Physical resource extraction*

138. With over 20% of all properties considered in this study concerned, this group of threats affects 81 properties located in 50 different States Parties (see Chart 35). It impacts all regions of the world and all categories of heritage (natural, mixed, cultural).

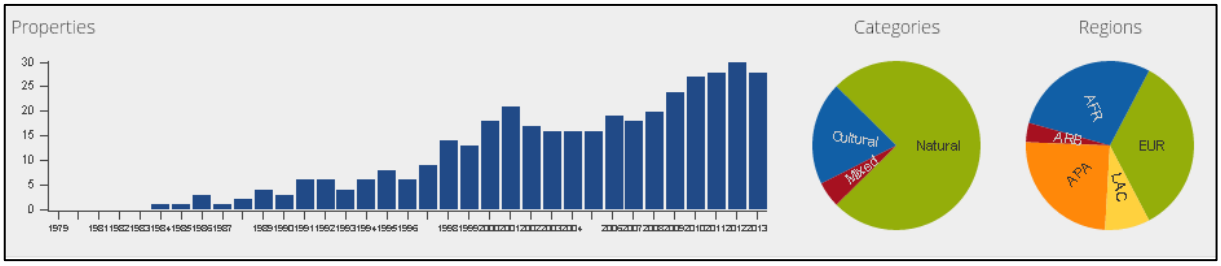


Chart 35: Distribution of the properties affected by "Physical resource extraction" (per year, category and region)

139. In the early years of the *Convention*, extractive industries represented an important threat to World Heritage properties, affecting up to 33% of all those reported to the Committee. Since 1993 (when the number of properties subject to a SOC report was high enough to make significant statistical analyses), this group of threats has globally been on the increase, with variations from 8% in 1993 to 19% in 2013 (see Chart 36).

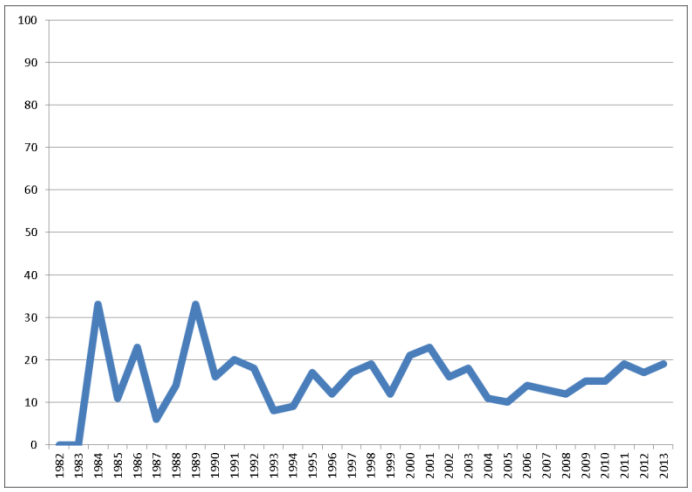


Chart 36: Percentage of properties examined in the SOC process affected by "Physical resource extraction" over time

140. We can however differentiate 3 phases since 1993 in the evolution of these threats: 1993-2001 a phase of global increase; 2001-2005: a phase of rapid decrease and 2005-2013: a new phase of increase but at a slower pace.

141. It is interesting to note that, due to growing concern, the World Heritage Centre started discussing the issue of extractive industries and their impact on World Heritage properties with the International Council of Metals and the Environment (ICME; which became ICMM in 2001) in 1998. This issue was subsequently presented to the World Heritage Committee at its 23rd session in 1999. A major milestone was achieved in 2003 with the adoption by the International Council on Mining and Metals (ICMM) of a commitment (also known as the "*No-go commitment*") by which all ICMM member companies committed to:

    1. *respect legally designated protected areas*
    2. *not explore or mine in World Heritage properties. All possible steps will be taken to ensure that existing operations in World Heritage properties as well as existing and future operations adjacent to World Heritage properties are not incompatible with the*

outstanding universal value for which these properties are listed and do not put the integrity of these properties at risk

3. *through ICMM, work with IUCN – The World Conservation Union – to address application issues and to strengthen the IUCN system of protected area categorisation. ICMM recognizes that sufficient reform of this system will lead to recognition of categories of protected areas as 'No-go' areas and others with a multiple-use designation*

4. *through ICMM, work with IUCN, governments, intergovernmental organizations, development and conservation NGOs and others to develop transparent, inclusive, informed and equitable decision-making processes and assessment tools that better integrate biodiversity conservation, protected areas and mining into land-use planning and management strategies, including 'No-go' areas*

5. *through ICMM, work with IUCN and others in developing best practice guidance to enhance industry's contribution to biodiversity conservation, including in and around protected areas.*

142. Besides the adoption of this "*No-go commitment*" in 2003 and the numerous debates held at the World Heritage Committee level, the percentage of properties subject to a SOC report and affected by extractive industries has gradually increased since 2005 to date. Chart 37 shows the evolution of the percentage of natural properties subject to a SOC report affected by extractive industries over the 1997-2013 period. We can clearly notice the global increase from 26.5% of the properties impacted in 1997 to 46% in 2013.

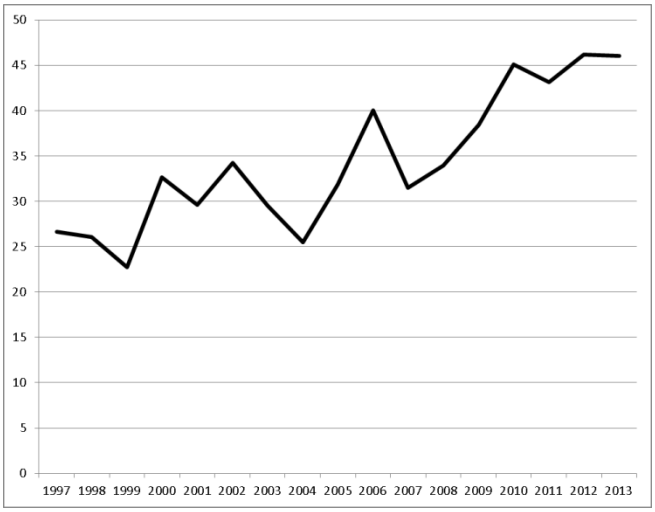


Chart 37: Evolution of the percentage of natural properties subject to a SOC report impacted by extractive industries between 1997 and 2013.

143. Out of the 2.642 SOC reports considered between 1979 and 2013, 385 mention a threat due to either mining (253), oil and gas exploration/exploitation (98), water extraction (43) or quarrying (17) (see Table 15).

Threat (secondary factor)	Number of reports	Number of properties affected	Average number of reports / property
Mining	253	49	5,2
Oil and gas	98	32	3,1
Water (extraction)*	43	14*	3,1
Quarrying*	17	6*	2,8

Table 15: Average number of reports produced for each property affected by each of the 4 "Physical resource extraction" secondary factors (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted).

144. Those various factors require different numbers of reports to be mitigated. Indeed, Table 15 shows that quarrying-relate issues require on average 2.8 reports per property, yet mining issues require over 5 reports per property. An interesting case is that of Mount Nimba Strict Nature Reserve (Côte d'Ivoire/Guinea), which has been reported to the World Heritage Committee 26 times since 1987 for *inter alia* mining issues, and ended up being inscribed on the List of World Heritage in Danger in 1992 partly because of this threat.

145. Oil and gas exploration/exploitation threats seem to require less reporting, with an average 3.1 reports, ranging from 2 reports per property in the Africa region to 8 reports in the Arab States region, including the case of the Arabian Oryx Sanctuary in Oman, which was deleted from the World Heritage List in 2007 partly due to hydrocarbon exploration activities within the original boundaries of the property. It should be noted that no global commitment exists regarding oil and gas exploration/exploitation, similar to the ICMM "*No-go commitment*" on mining altogether. To date, only 2 of the leading companies of this sector (Shell in 2003 and Total in 2013) have made such a pledge not to operate in natural World Heritage properties.

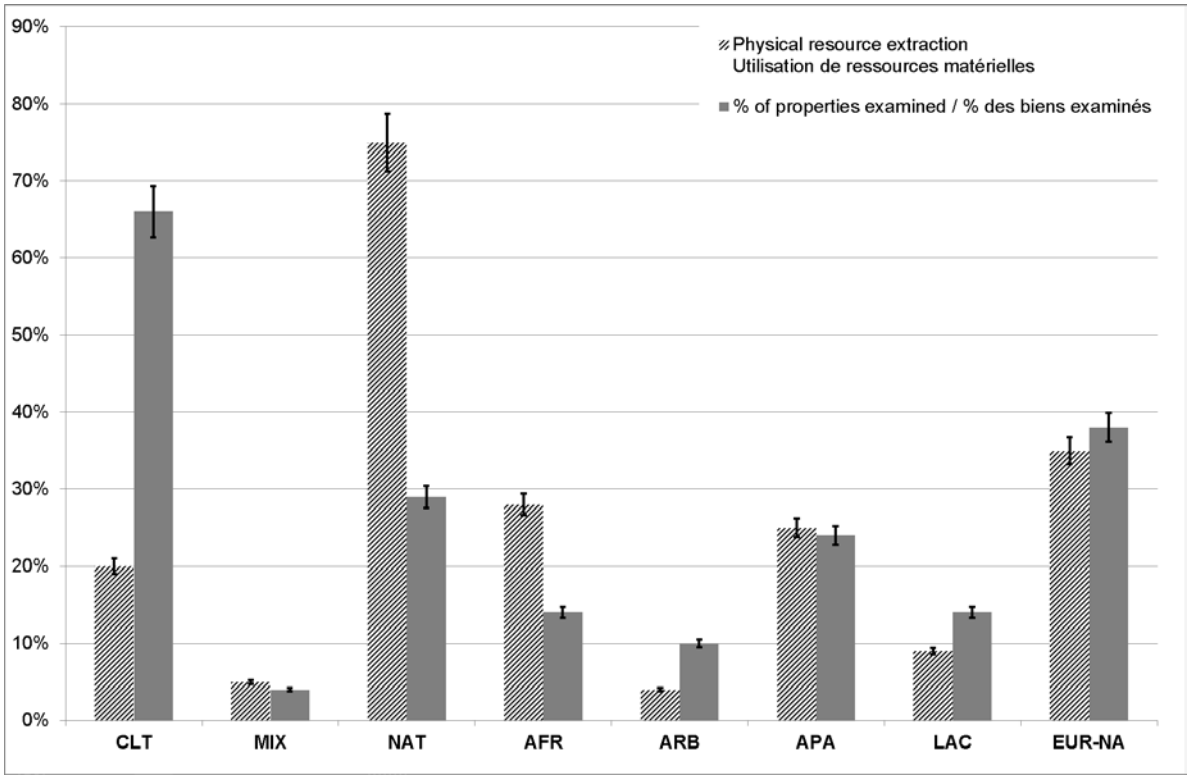


Chart 38: Percentage of properties affected by "Physical resource extraction" for each category and region (stripes - left), compared to the percentage of properties examined in the SOC process per category and region (dark grey - right) (error bars with 5% value)

Threat (secondary factor)	CLT	MIX	NAT	AFR	ARB	APA	EUR/NA	LAC
Average distribution in SOC reports	66%	4%	30%	14%	10%	24%	38%	14%
Mining	18%	4%	**78%**	**35%**	2%	**27%**	29%	8%
Oil and gas	6%	3%	**91%**	**28%**	6%	16%	41%	9%
Quarrying*	83%*	0%*	17%*	0%*	0%*	33%*	67%*	0%*
Water (extraction)*	14%*	7%*	79%*	21%*	7%*	29%*	43%*	0%*

Table 16: Distribution of properties within categories and regions for each of the "Physical resource extraction" secondary factor. Figures in bold indicates that the percentage is significantly superior to the one expected according to the global distribution of the properties examined through the SOC process (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted).

146. As evidenced by Chart 38 and Table 16, natural properties are significantly more sensitive to extractive industries than cultural or mixed properties. Indeed, they represent 78% of the properties affected by mining and 91% of the properties affected by oil and gas exploration/exploitation.

147. Although the number of properties impacted is too small to conduct significant analyses, we can still highlight the fact that water extractions affect mostly natural properties (79%) while quarrying activities seem to affect in majority cultural properties (83%), and mostly in the Europe and North America region.

148. In a regional level, the Africa and Asia-Pacific regions seem to be the most challenged by mining issues.

149. In proportion, the Africa region also seems to be the most affected by oil and gas exploration/exploitation issues.

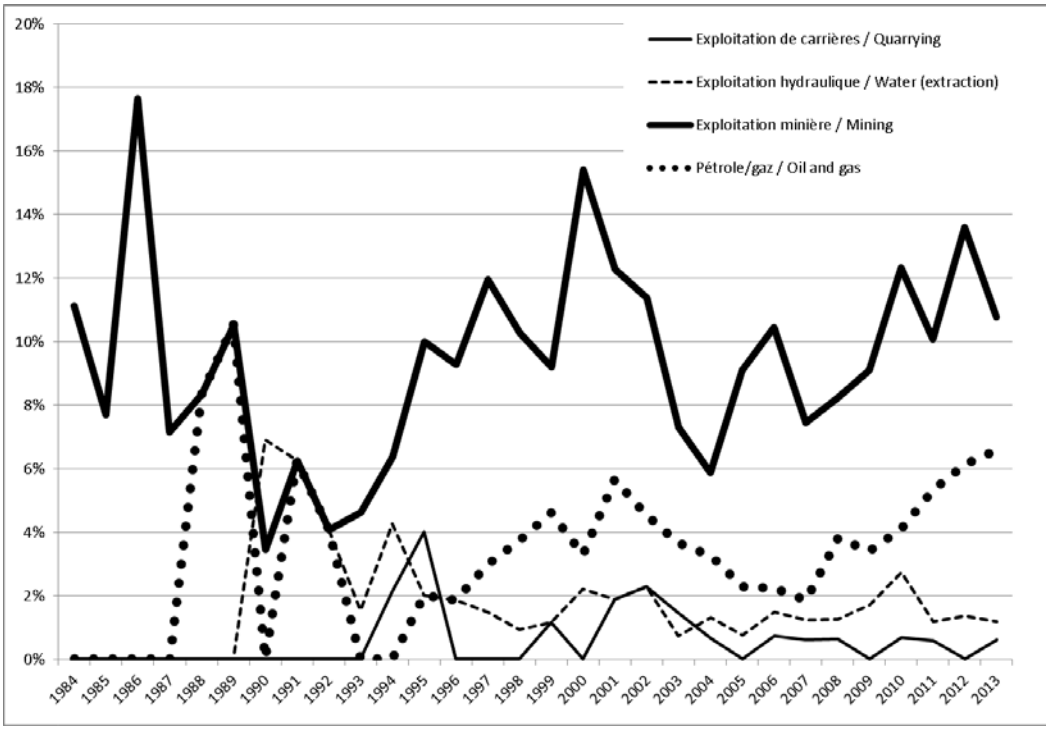


Chart 39: Evolution of the percentage of SOC reports for each of the 4 "Physical resource extraction" factors since 1982

150. Although it has followed a very irregular pattern, the mining threat to World Heritage has increased between 1992 and 2000 (from 4% to 15%). This threat has then decreased until the year 2004 (down to 6%). As indicated above, besides the adoption in 2003 of the "No-go commitment" by the ICMM member companies, this threat has started to increase again in 2004, up to now, to reach 14% of the SOC reports in 2012 (see Chart 39).

151. The second most reported factor of this group relates to oil and gas exploration/exploitation and followed the same pattern than the mining factor, with an increase until 2001 and a subsequent decrease until 2007. Similarly, it has also clearly been on the increase since 2007, from 2% of the reports to 7% in 2013 (250% increase in 7 years).

152. The threats due to water extraction and quarrying have been affecting too few properties between 1979 and 2013 (respectively, 6 and 14) to conduct any significant analysis of their evolution.

h) Services Infrastructures

153. With 17% of all properties considered in this study concerned, this group of threats affects 81 properties located in 60 different States Parties (see Chart 40). It impacts all regions of the world and all categories of heritage (natural, mixed, cultural).

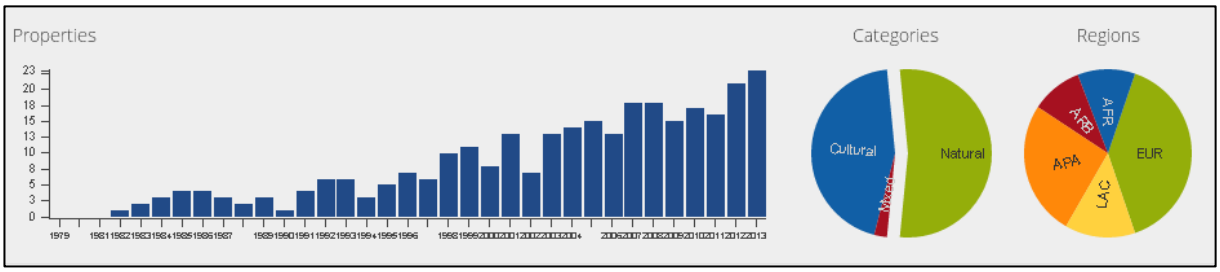


Chart 40: Distribution of the properties affected by "Services infrastructures" (per year, category and region)

154. In the early years of the *Convention*, this group of factors was a major threat to World Heritage properties, affecting up to 100% of all those reported to the Committee. This group of threats was one of the very first one to be reported to the World Heritage Committee as having a negative impact on the properties.

155. Since 1990 (when the number of properties subject to a SOC report was high enough to make significant statistical analyses), this group has globally been stable, with small variations, ranging from 5% of the properties concerned by this study to 15% (see Chart 41), but seems to be slightly on the rise since 2009.

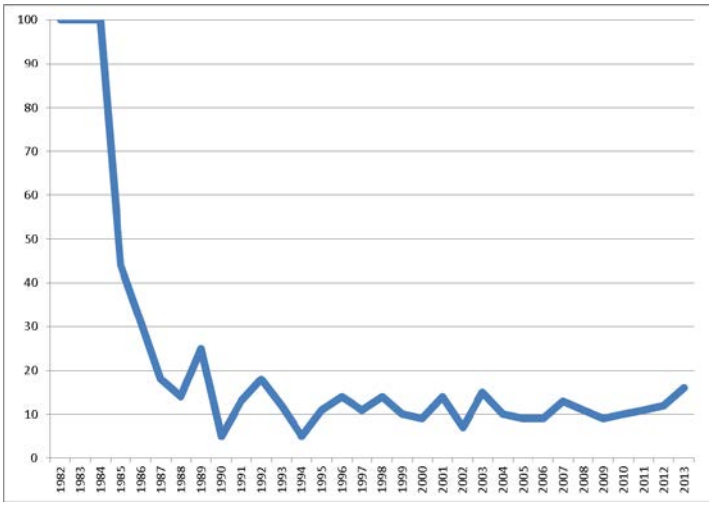


Chart 41: Percentage of properties examined in the SOC process affected by "Services infrastructures" over time

156. Out of the 2.642 SOC reports considered between 1979 and 2013, 290 mention a threat due to either the development of water infrastructures (e.g. dams, locks, weirs or water tanks)(193), major linear utilities (such as pipelines, power lines)(57), localised utilities (incinerators, cell phone towers)(31), renewable energy facilities (thermal, solar, wind, etc.)(28) or non-renewable energy facilities (such as nuclear power plants or oil/gas facilities)(7) (see Table 17).

Threat (secondary factor)	Number of reports	Number of properties affected	Average number of reports / property
Water infrastructure	193	43	4,5
Major linear utilities*	57	21*	2,7
Localised utilities*	31	18*	1,7
Renewable energy facilities*	28	8*	3,5
Non-renewable energy facilities*	7	4*	1,8

Table 17: Average number of reports produced for each property affected by each of the 5 "Services infrastructures" secondary factors (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted).

157. The large majority (66%) of the SOC reports mentioning a threat related to "Utilities or Service Infrastructure" points to water infrastructure developments. This specific threat is also the one requiring the highest number of reports per property (4.5) (see Table 17).

158. The two other most common factors altering the Outstanding Universal Value of World Heritage properties are the development of "major linear utilities" and "localised utilities". They respectively require 2.7 and 1.7 reports per property to be mitigated. However, the number of properties they impact is too low to make any significant analysis.

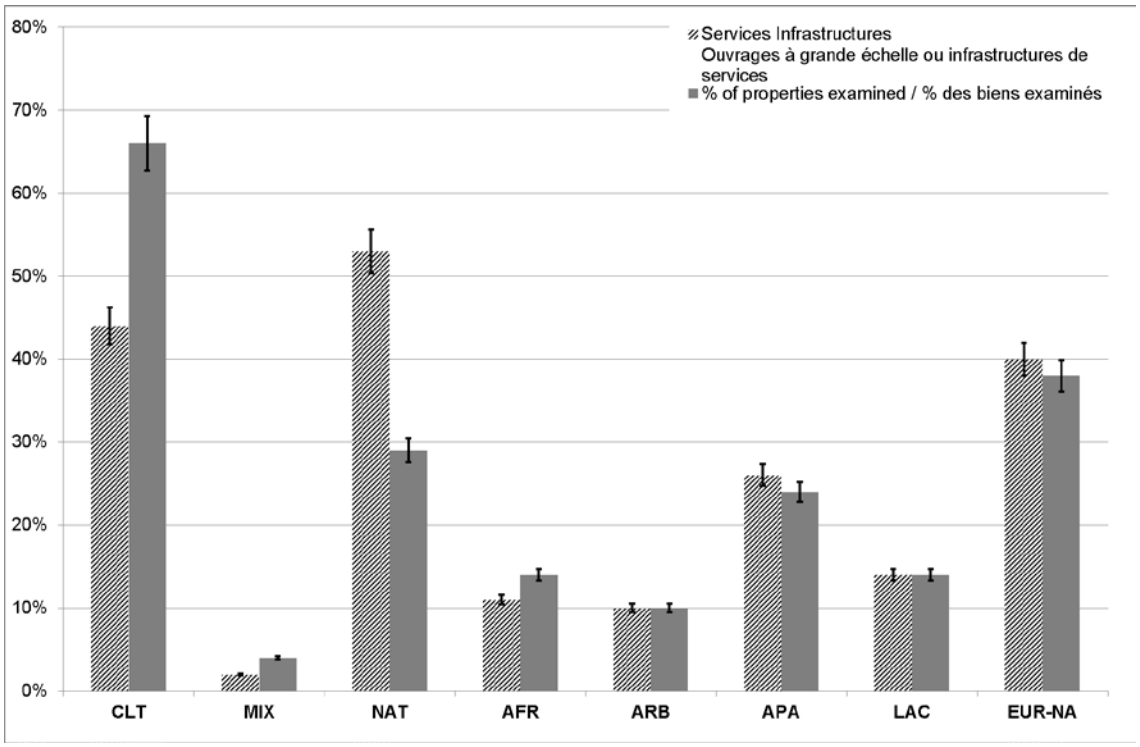


Chart 42: Percentage of properties affected by "Services infrastructures" for each category and region (stripes - left), compared to the percentage of properties examined in the SOC process per category and region (dark grey - right) (error bars with 5% value)

159. Globally, threats related to "Utilities or Service Infrastructure" have a significantly higher impact on natural properties than on cultural or mixed ones (see Chart 42).

160. On a regional aspect, the Africa region seems to be globally the only one which is significantly less exposed to this threat. Even though no region seems to be more affected than others by the development of service infrastructures (in proportion to their respective number of properties subject to a SOC report), globally we can still notice some differences amongst the regions when looking at more specific threats.

Threat (secondary factor)	CLT	MIX	NAT	AFR	ARB	APA	EUR/NA	LAC
Average distribution in SOC reports	66%	4%	30%	14%	10%	24%	38%	14%
Water infrastructure	28%	5%	**67%**	**21%**	9%	26%	26%	**19%**
Major linear utilities*	52%*	5%*	43%*	5%*	10%*	29%*	38%*	19%*
Localised utilities*	56%*	0%*	44%*	0%*	17%*	22%*	56%*	6%*
Renewable energy facilities*	50%*	0%*	50%*	0%*	13%*	0%*	88%*	0%*
Non-renewable energy facilities*	25%*	0%*	75%*	0%*	0%*	25%*	75%*	0%*

Table 18: Distribution of properties within categories and regions for each of the "Service infrastructures" secondary factor. Figures in bold indicates that the percentage is significantly superior to the one expected according to the global distribution of the properties examined through the SOC process (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted).

161. Indeed, Table 18 exposes the variations by region and category of heritage. Natural properties appear to be the most sensitive to the development of service infrastructures, in particularly to water infrastructures (67%) as well as renewable (50%) and non-renewable energy facilities (75%).

162. All cultural properties affected by renewable energy facilities were more specifically threatened by wind turbines projects. The World Heritage Committee has discussed the matter of wind farms and their visual impact on the Outstanding Universal Value of properties a number of times during its ordinary sessions.

163. The Africa and Latin America and the Caribbean regions also seem to be the most affected by the development of dams and other water infrastructures, while the Europe and North America region seems the most impacted by non-renewable and renewable energy facilities with, respectively, 75% and 88% of the properties concerned being located in this region.

164. However, except for water infrastructures, these should only be considered as observations as the number of properties affected by the other factors is too low to allow the conduct of statistically significant analyses.

165. Looking at the evolution over time of each factor of this group of threats (Chart 43), it can be observed that the most commonly reported factor relates to the development of water infrastructures. Since 1990 (year when the number of properties affected by service infrastructures was high enough to conduct analyse), this factor has been cited in an increasing number of reports (from 3% in 1990 to 10% in 2013). The reporting rate was rather stable between 1995 and 2004, and started to globally rise again in 2006.

166. All four other factors (localised utilities, major linear utilities, renewable and non-renewable energy facilities) have always posed a threat to a limited number of properties (rarely in more than 3% of the SOC reports examined by the World Heritage Committee), with a few occasional peaks (e.g. 6% for localised utilities in 1996 and 5% for major linear utilities in 2001).

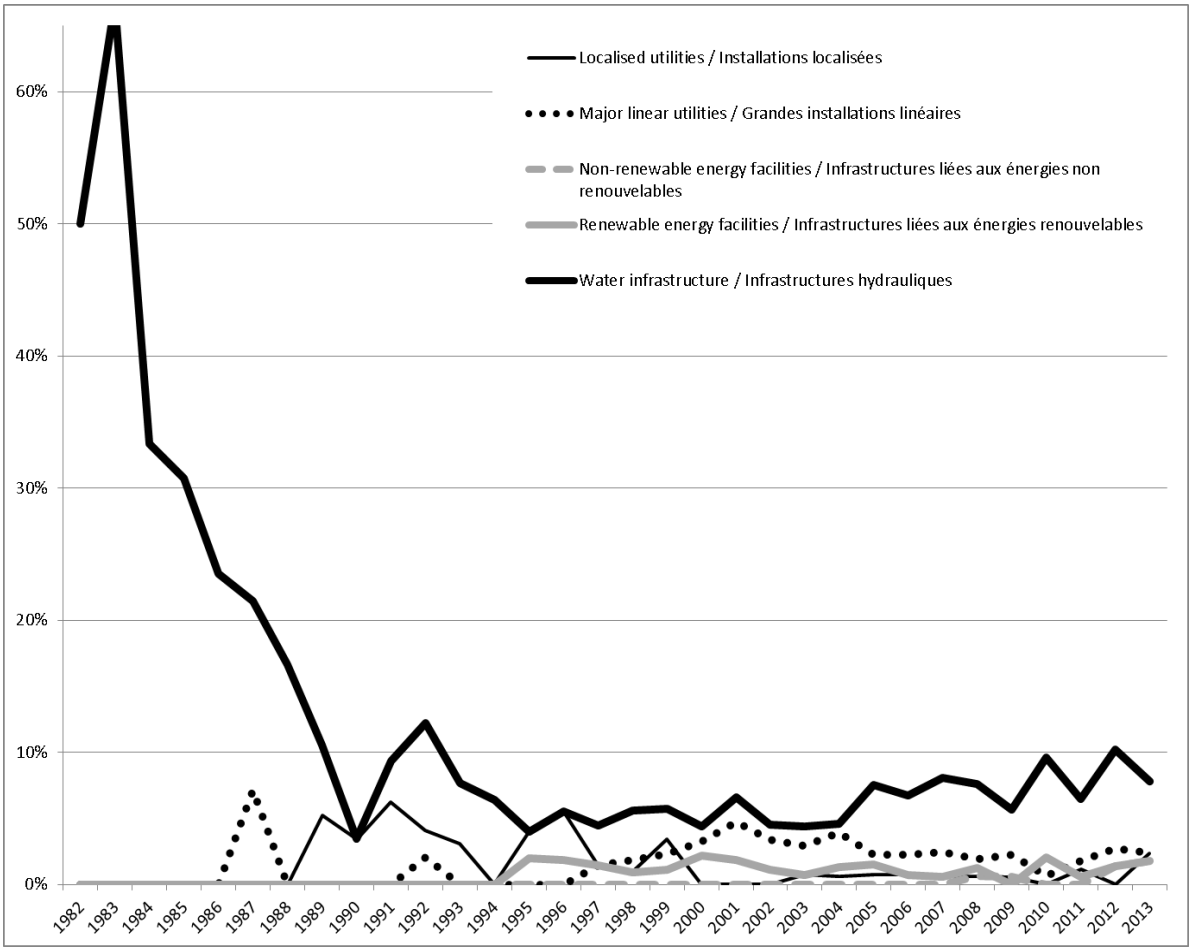


Chart 43: Evolution of the percentage of SOC reports for each of the 5 “Service infrastructures” factors since 1982

i) Sudden ecological or geological events

167. With 16% of all properties considered in this study concerned, this group of threats affects 76 properties located in 49 different States Parties (see Chart 44). It impacts all regions of the world and all categories of heritage but mostly cultural properties.

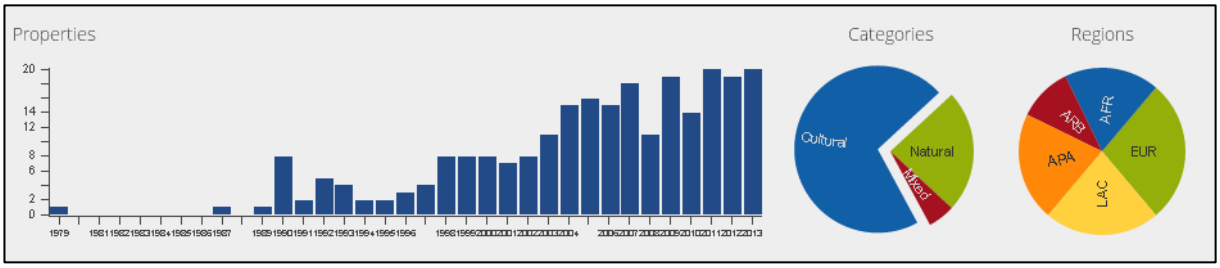
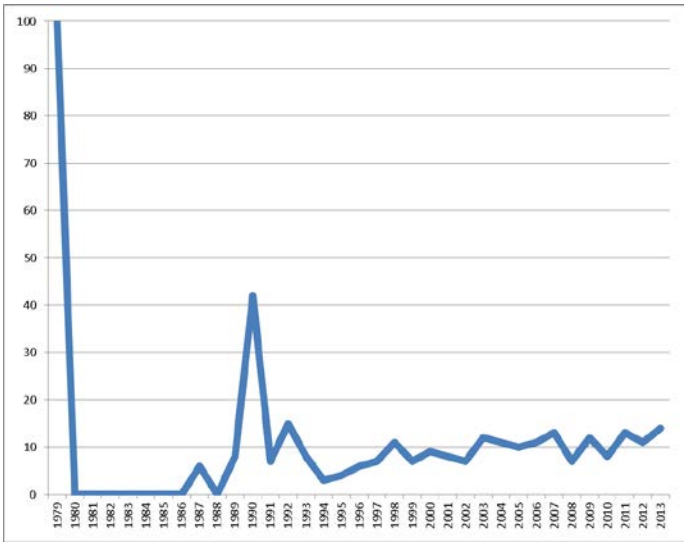


Chart 44: Distribution of the properties affected by "Sudden ecological or geological events" (per year, category and region)

168. This group of threats was the very first one to be reported to the World Heritage Committee following the disastrous effects of an earthquake which struck in April 1979 in the vicinity of the Natural and Culturo-Historical Region of Kotor (Montenegro), a World Heritage property (see http://whc.unesco.org/en/soc/1517).

169. The percentage of properties examined by the World Heritage Committee due to "Sudden ecological or geological events" has continuously increased since 1986, with a peak in 1990. This punctual peak left aside, the reporting of this group of threats has increased from 3% of the properties subject to a SOC reports in 1994 to 14% in 2013. This represents a 360% increase



over the 20-year period considered.

Chart 45: Percentage of properties examined in the SOC process affected by "Sudden ecological or geological events" over time

170. It is interesting to note that, according to the USGS (United States Geological Survey)'s website (http://www.earthquake.usgs.gov), the number of earthquakes since about 1900 has not increased, and an average of 17 major earthquakes (7.0 to 7.9 of the Richter's scale) and 1 great earthquake (over 8.0) can be expected each year. The increase of the reporting rate of this specific threat since 1994 is therefore not due to more frequent geological events themselves, but probably more to the increase of the number of properties on the World Heritage List located in earthquake-prone areas, as well as to an increase of the other factors such as erosion, landslides, wildfires, etc..

171. Indeed, out of the 2.642 SOC reports considered between 1979 and 2013, 248 mention a threat due to either erosion and siltation/deposition (101), earthquake (70), wild fires (note that human-induced fires are not considered in this group)(47), avalanche/landslide (28), volcanic eruption (9) or tsunami/tidal wave (3) (see Table 18).

Threat (secondary factor)	Number of reports	Number of properties affected	Average number of reports / property
Erosion and siltation/ deposition*	101	29*	3,5
Earthquake*	70	27*	2,6
Fire (widlfires)*	47	14*	3,4
Avalanche/ landslide*	28	9*	3,1
Volcanic eruption*	9	4*	2,3
Tsunami/tidal wave*	3	2*	1,5

Table 18: Average number of reports produced for each property affected by each of the 6 "Sudden ecological or geological events" secondary factors (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted).

172. The most commonly reported threats affecting properties and related to "Sudden ecological or geological events" are erosion/siltation, earthquakes and wildfires to a lesser extent (see Table 18). All threats of this group seem to take more or less a similar number of reports to be mitigated (between 2.6 and 3.5).

173. However, the number of properties affected by all these "Sudden ecological or geological events" factors is too low to allow the conduct of statistically significant analyses.

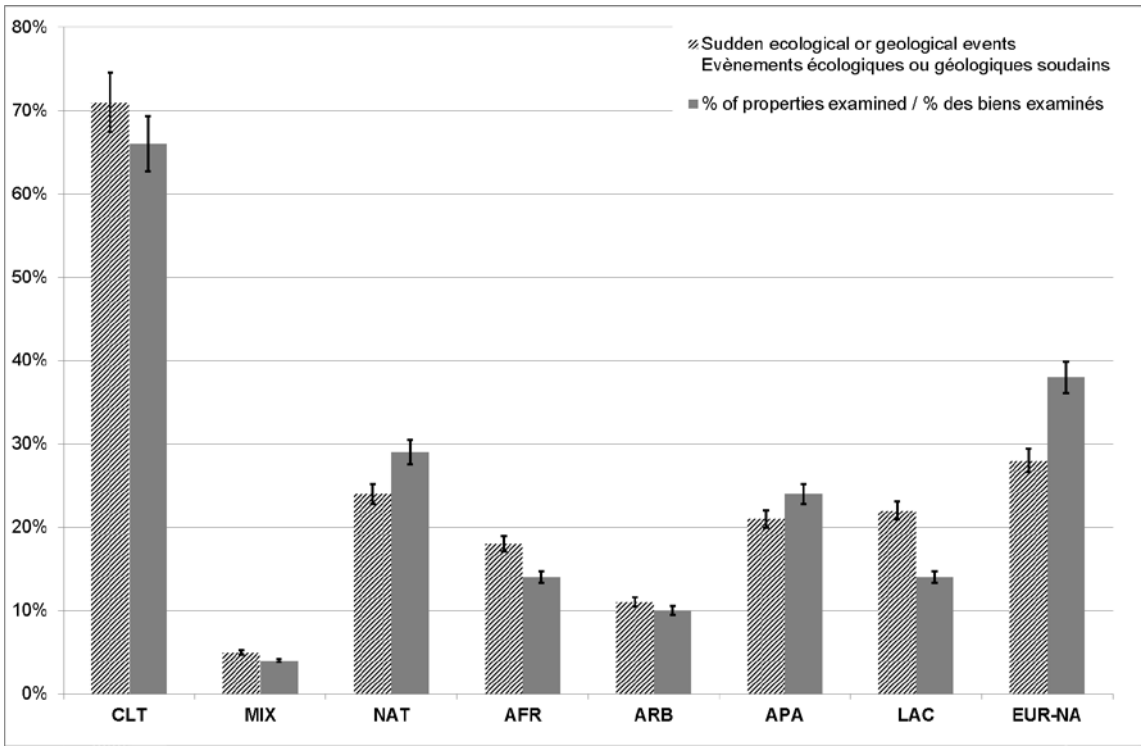


Chart 46: Percentage of properties affected by "Sudden ecological or geological events" for each category and region (stripes - left), compared to the percentage of properties examined in the SOC process per category and region (dark grey - right) (error bars with 5% value)

174. Chart 46 shows that the threats related to "Sudden ecological or geological events" tend to affect natural properties slightly less than mixed and cultural properties. This could most likely be due to the resilience of natural sites which can, for example, recover faster from an earthquake than a cultural site such as a temple or any other building.

175. Globally, properties in the Latin America and the Caribbean and in the Africa regions seem to be more impacted by all these factors than in other regions. But once again, the low number of properties affected by these factors is too low to come to any significant conclusion in this regard.

Threat (secondary factor)	CLT	MIX	NAT	AFR	ARB	APA	EUR/NA	LAC
Average distribution in SOC reports	66%	4%	30%	14%	10%	24%	38%	14%
Avalanche/ landslide*	78%*	11%*	11%*	11%*	11%*	22%*	11%*	44%*
Earthquake*	93%*	4%*	4%*	4%*	7%*	19%*	41%*	30%*
Erosion and siltation/ deposition*	79%*	3%*	17%*	28%*	24%*	10%*	24%*	14%*
Fire (widlfires)*	14%*	14%*	71%*	29%*	0%*	21%*	29%*	21%*
Tsunami/tidal wave*	50%*	0%*	50%*	0%*	0%*	100%*	0%*	0%*
Volcanic eruption*	50%*	25%*	25%*	25%*	0%*	50%*	0%*	25%*

Table 19: Distribution of properties within categories and regions for each of the "Sudden ecological or geological events" secondary factors (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted)

176. Globally, 71% of the properties affected by a "sudden ecological or geological event" are cultural properties. However, Table 19 shows the variations according to each specific threat. Indeed, even though earthquakes, avalanches, landslides, erosion and siltation tend to have negative impact largely on cultural properties, on the contrary, wild fires tend to have more negative effect on natural properties.

177. Mixed properties seem to be more sensitive to volcanic eruptions than other categories of heritage. Indeed, 25% of the properties concerned by volcanic eruptions are mixed properties, yet they represent 4% of all the properties subject to a SOC report.

178. Looking at regional specificities, the Latin America and the Caribbean region seems to be more prone to landslides, earthquakes and volcanic eruptions than to other threats of this group, while the Africa region seems to be more sensitive to erosion, siltation and wild fires. The Asia-Pacific region also appears to be more threatened by tsunamis and volcanic eruptions than by the other threats of this group.

179. However, as indicated above, due to the low number of properties affected by each of these threats, it is not possible to conduct any statistically significant analysis. The comments on Table 19 should only be regarded as general facts and not as ascertained trends.

180. In order to reduce risks from disasters at World Heritage properties, a specific strategy was presented to the World Heritage Committee at its 30th session (Vilnius, 2006), and its revised text was adopted at its 31st session (Christchurch, 2007) as "*Strategy for Risk Reduction at World Heritage Properties*" (see page http://whc.unesco.org/en/disaster-risk-reduction/).

181. Subsequently, in 2010, at the request of the World Heritage Committee, a Resource Manual on "*Managing Disaster Risks for World Heritage*" was prepared under the coordination of ICCROM and with inputs from the World Heritage Centre, ICOMOS and IUCN. This manual provides site-managers and administrators with a methodological framework to identify, assess and reduce the risks from disasters. This Manual can be downloaded at the following web address: http://whc.unesco.org/en/activities/630/

182. In addition, the World Heritage Centre, Fauna & Flora International (FFI) and the United Nations Foundation have been operating the "*Rapid Response Facility*" (RRF) since 2006. This mechanism was established to rapidly (i.e. within eight working days) provide grants (up to USD30,000) to respond to threats to biodiversity in natural World Heritage properties (see page http://www.rapid-response.org/).

j) Pollution

183. With 16% of all properties considered in this study concerned, this group of threats affects 75 properties located in 52 different States Parties (see Chart 47). It impacts all regions of the world and all categories of heritage.

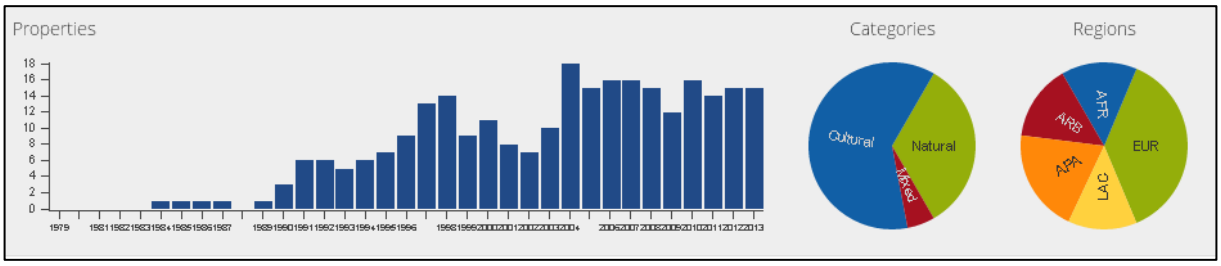


Chart 47: Distribution of the properties affected by "Pollution" (per year, category and region)

184. The percentage of properties examined by the World Heritage Committee due to "Pollution" has decreased since 1997 (24% of all examined properties concerned) and has been rather stable since 2008 (between 8 and 10% of the properties examined) (see Chart 48).

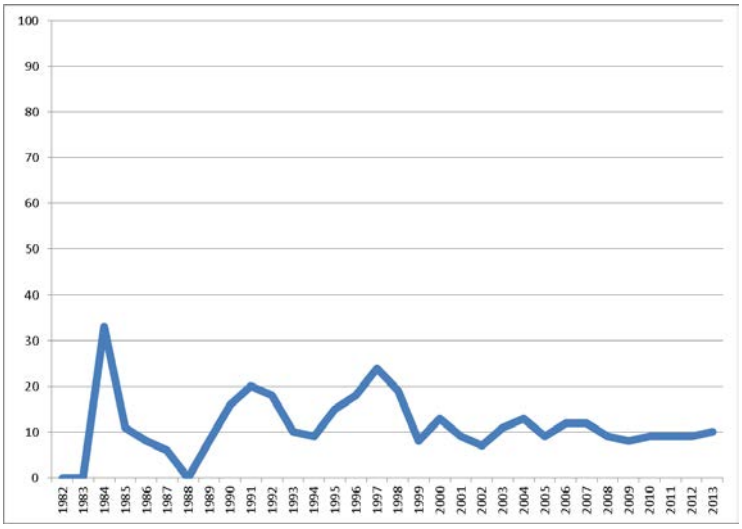


Chart 48: Percentage of properties examined in the SOC process affected by "Pollution" over time

185. Out of the 2.642 SOC reports considered between 1979 and 2013, 267 mention a threat due to either surface water pollution (e.g. acid rains, mine/tailings runoff) (107), solid waste (95), air pollution (39), input of excess energy (e.g. any inputs of heat and light disturbing ecosystems, such as inappropriate urban lighting, heat pollution, etc) (29), ground water pollution (19) or pollution of marine waters (17) (see Table 20).

Threat (secondary factor)	Number of reports	Number of properties affected	Average number of reports / property
Solid waste	95	33	2,9
Surface water pollution*	107	19*	5,6
Air pollution*	39	16*	2,4
Input of excess energy*	29	11*	2,6
Ground water pollution*	19	9*	2,1
Pollution of marine waters*	17	7*	2,4

Table 20: Average number of reports produced for each property affected by each of the 6 "Pollution" secondary factors (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted).

186. As evidenced by Table 20, the most commonly reported threats due to "Pollution" is related to solid wastes, such as littering, industrial wastes, or even household rubbish; with a total of 33 properties affected.

187. Table 20 also indicates that, besides surface water pollution, all other pollution factors seem to require a similar amount of time to be mitigated (e.g. between 2.1 and 2.9 reports per property). Surface water pollution however appear to require an average of 5.6 reports per property to be considered as mitigated.

188. However, due to the low number of properties affected by each factor of this group of threats, except for "solid waste", the results of the statistical analyses may not be significant and are just proposed as observations.

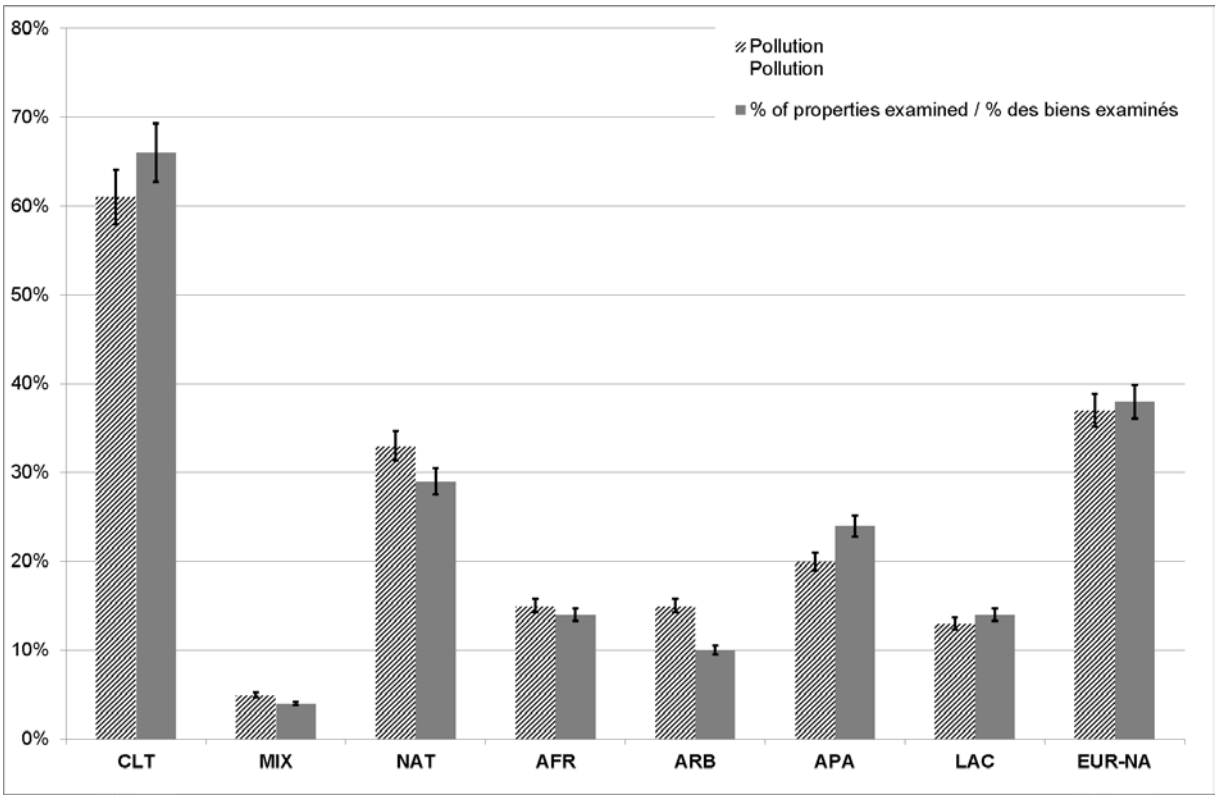


Chart 49: Percentage of properties affected by "Pollution" for each category and region (stripes - left), compared to the percentage of properties examined in the SOC process per category and region (dark grey - right) (error bars with 5% value)

189. All regions of the world are affected by pollution. We can however notice that natural properties seem to be slightly more affected than others, as well as properties located in the Arab States region which seem to be more affected by pollution than expected (see Chart 49).

190. Table 21 shows that pollution due to solid waste seems to have a stronger impact on cultural properties than on mixed and natural properties. Indeed, 85% of the properties affected by solid waste are cultural properties, yet cultural properties represent 66% of all properties examined through the SOC reports.

191. Pollution by solid waste appears to be significantly more commonly reported in the Africa and Arab States regions.

Threat (secondary factor)	CLT	MIX	NAT	AFR	ARB	APA	EUR/NA	LAC
Average distribution in SOC reports	66%	4%	30%	14%	10%	24%	38%	14%
Solid waste	**85%**	3%	12%	**21%**	**24%**	12%	33%	9%
Air pollution*	63%*	0%*	38%*	6%*	13%*	44%*	31%*	6%*
Ground water pollution*	22%*	22%*	56%*	11%*	11%*	33%*	33%*	11%*
Input of excess energy*	55%*	9%*	36%*	9%*	9%*	9%*	36%*	36%*
Pollution of marine waters*	29%*	0%*	71%*	0%*	0%*	14%*	71%*	14%*
Surface water pollution*	32%*	5%*	63%*	21%*	5%*	11%*	53%*	11%*

Table 21: Distribution of properties within categories and regions for each of the "Pollution" secondary factor. Figures in bold indicates that the percentage is significantly superior to the one expected according to the global distribution of the properties examined through the SOC process (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted).

192. It can only be noted that water pollution seems to affect mostly natural properties (ground water: 56%; marine water: 71%; surface water : 63%) while air pollution, solid waste and input of excess energy appear to affect mostly cultural properties (solid waste: 85%; air pollution: 63%; input of excess energy: 55%).

193. However, as mentioned, except for "solid waste", the number of properties affected by each of the other factors being less than 30, no conclusive and statistically significant analysis can be proposed.

k) Climate change and severe weather events

194. With 14% of all properties considered in this study concerned, this group of threats affects 66 properties located in 51 different States Parties (see Chart 50). It impacts all regions of the world and all categories of heritage.

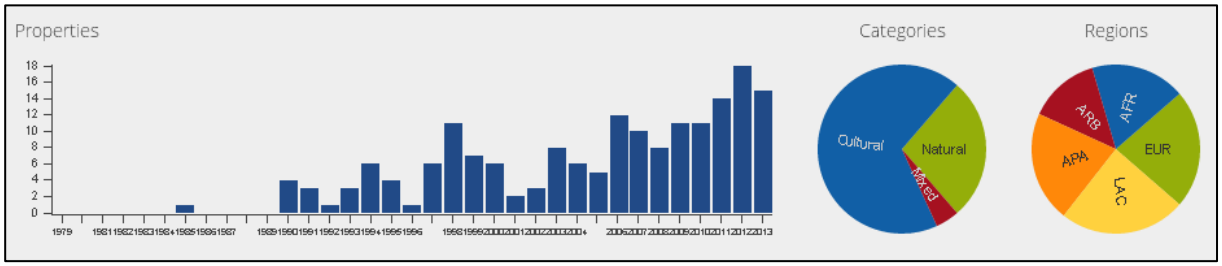


Chart 50: Distribution of the properties affected by "Climate change and severe weather" (per year, category and region)

195. The percentage of properties examined by the World Heritage Committee due to "Climate change and severe weather" has been irregular since 1982 (year of the first report related to climate change or sever weather issue) (see Chart 51). However, this percentage has globally been increasing since 2001 (2%) to date (10% in 2013), representing a 400% increase while the number of properties examined through the SOC process has increased by 57% over the same period.

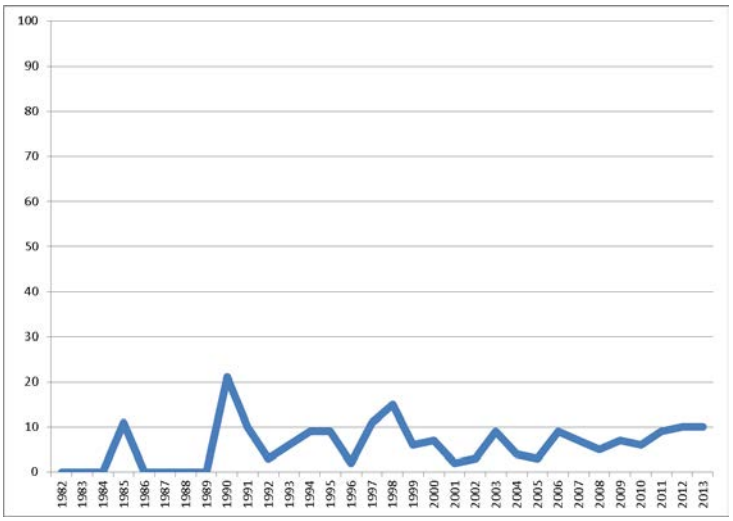


Chart 51: Percentage of properties examined in the SOC process affected by "Climate change and severe weather events" over time

196. The issues related to climate change and its impact on World Heritage properties was discussed by the World Heritage Committee at its 29th session (Durban, 2005) following the receipt of a number of petitions from concerned organizations and individuals. An expert working group was convened in March 2006, at the request of the World Heritage Committee and was composed by members of the World Heritage Centre, the Advisory Bodies to the Committee, interested States Parties to the *World Heritage Convention* as well as the petitioners (see page http://whc.unesco.org/en/climatechange/).

197. Two reports on "Predicting and managing the impacts of Climate Change on World Heritage" and the "Strategy to assist States Parties to implement management responses" were prepared by the working group and endorsed by the World Heritage Committee at its 30th session (Vilnius, 2006). Subsequently, a "Policy Document on Impacts of Climate Change and World Heritage" was finalized by the World Heritage Centre and a group of experts and adopted by the

General Assembly of States Parties to the *World Heritage Convention* at its 16th session (UNESCO, 2007) (read the Policy Document on the impacts of climate change at the following web address: http://whc.unesco.org/uploads/activities/documents/activity-397-2.pdf).

198. In 2007, the World Heritage Centre also published a compilation of 26 case studies related to the impact of climate change on World Heritage properties, both already observed and expected in the future. This publication can be downloaded at: http://whc.unesco.org/uploads/activities/documents/activity-473-1.pdf).

199. Out of the 2.642 SOC reports considered between 1979 and 2013, 175 mention a threat due to either storms (e.g. tornadoes, hurricanes, extreme tides, etc.) (65), flooding (61), drought (15), temperature change (13), desertification (10), changes to oceanic waters (e.g. changes to water flow, scale, temperature or pH) (3) or other climate change impacts (16) (see Table 22).

Threat (secondary factor)	Number of reports	Number of properties affected	Average number of reports / property
Storms*	65	27*	2,4
Flooding*	61	25*	2,4
Other climate change impacts*	16	8*	2
Temperature change*	13	7*	1,9
Drought*	15	5*	3
Changes to oceanic waters*	3	3*	1
Desertification*	10	2*	5

Table 22: Average number of reports produced for each property affected by each of the 7 "Climate change and severe weather" secondary factors (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted).

200. Table 22 also shows that the major factors related to "Climate change and severe weather" are storms and flooding, having affected respectively 27 and 25 properties since 1982.

201. However, the number of properties affected by each of the related factors being very reduced, no statistically significant analysis can be proposed in relation with the properties impacted by this group of threats. Tables 22 and 23 as well as Chart 52 presented above and below can only be considered as observations and cannot be used to define any statistically significant trends.

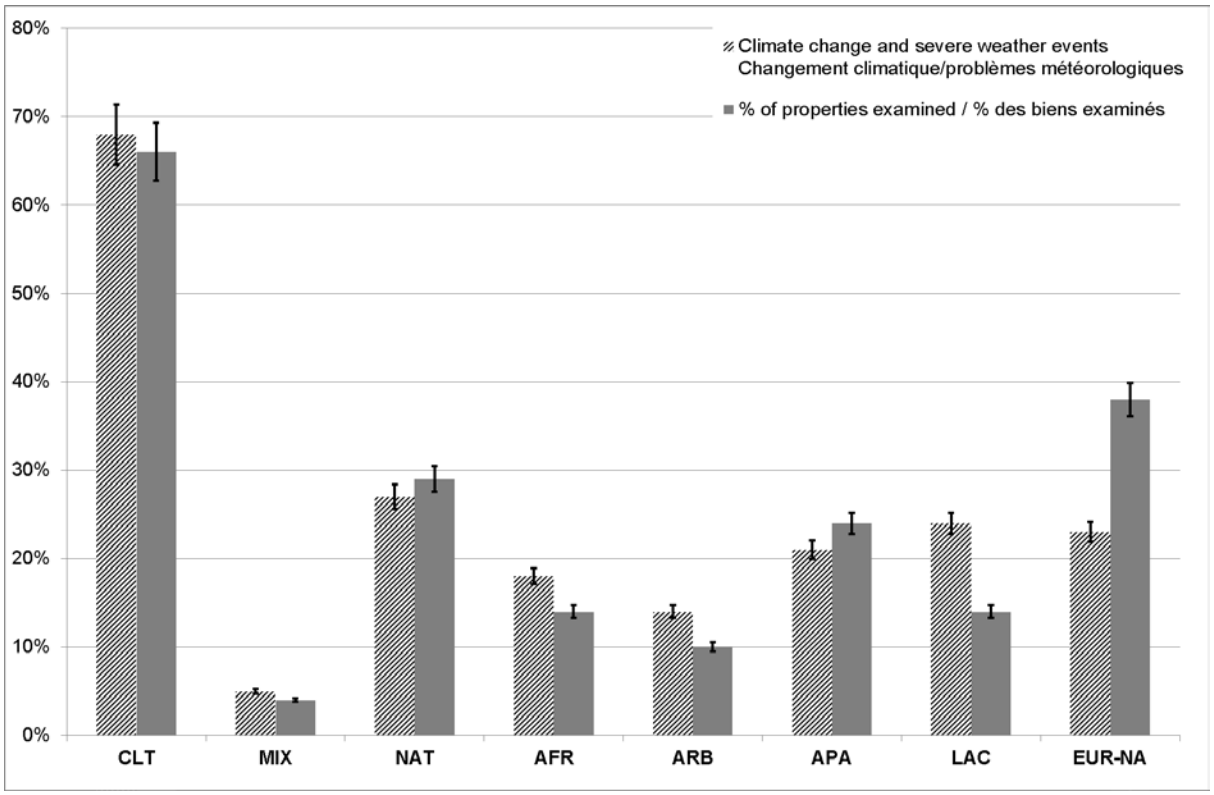


Chart 52: Percentage of properties affected by "Climate change and severe weather events" for each category and region (stripes - left), compared to the percentage of properties examined in the SOC process per category and region (dark grey - right) (error bars with 5% value)

Threat (secondary factor)	CLT	MIX	NAT	AFR	ARB	APA	EUR/NA	LAC
Average distribution in SOC reports	66%	4%	30%	14%	10%	24%	38%	14%
Changes to oceanic waters*	33%*	0%*	67%*	33%*	0%*	67%*	0%*	0%*
Desertification*	100%*	0%*	0%*	50%*	50%*	0%*	0%*	0%*
Drought*	0%*	20%*	80%*	80%*	0%*	20%*	0%*	0%*
Flooding*	88%*	4%*	8%*	8%*	28%*	24%*	12%*	28%*
Other climate change impacts*	38%*	0%*	63%*	13%*	13%*	38%*	25%*	13%*
Storms*	81%*	4%*	15%*	15%*	4%*	15%*	26%*	41%*
Temperature change*	29%*	0%*	71%*	0%*	14%*	29%*	57%*	0%*

Table 23: Distribution of properties within categories and regions for each of the "Climate change and severe weather events" secondary factors (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted)

I) Local conditions affecting physical fabric

202. With 12% of all properties considered in this study concerned, this group of threats affects 56 properties located in 41 different States Parties (see Chart 53). It impacts all regions of the world and all categories of heritage, but predominantly cultural properties (91%).

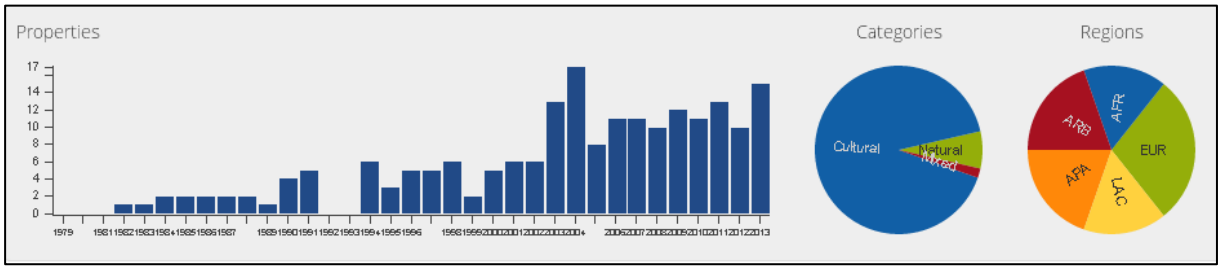


Chart 53: Distribution of the properties affected by "Local conditions affecting physical fabric" (per year, category and region)

203. The percentage of properties examined by the World Heritage Committee due to "Local conditions affecting physical fabric" has been irregular since 1982 (year of the first report related to this group of threats) (see Chart 54). However, between 1982 and 1991, the number of properties examined through the SOC reports was so low that the trend line can be distorted. Since 1992, this percentage has always been around 8% with a few punctual variations (e.g. 2% in 1999 and 15% in 2003).

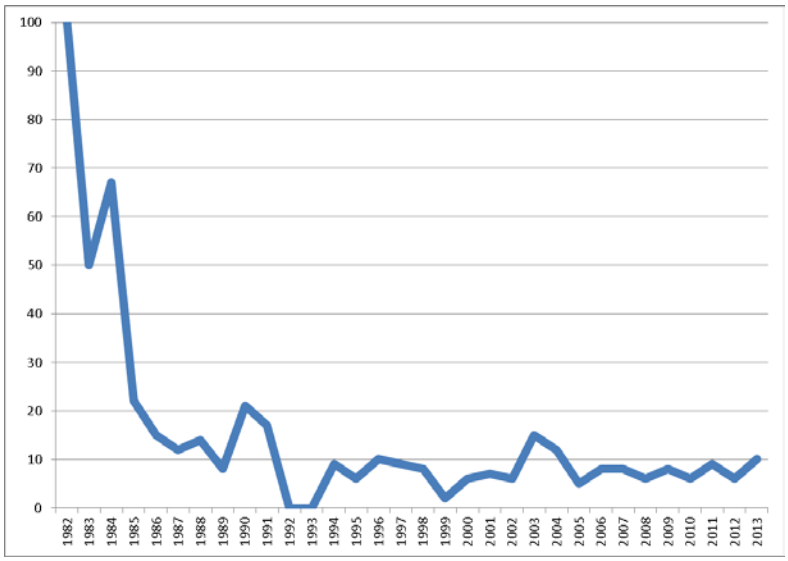


Chart 54: Percentage of properties examined in the SOC process affected by "Local conditions affecting physical fabric" over time

204. Out of the 2.642 SOC reports considered between 1979 and 2013, 190 mention a threat due to either water (rain or the water table level) (154), relative humidity (49), wind (32), micro-organisms (13), temperature (10) or radiation/light (3). Pests and dust do not seem to have ever been reported as specific threats to the Outstanding Universal Value of World heritage properties between 1979 and 2013 (see Table 24).

Threat (secondary factor)	Number of reports	Number of properties affected	Average number of reports / property
Water (rain/water table)	154	48	3,2
Relative humidity*	49	19*	2,6
Wind*	32	14*	2,3
Micro-organisms*	13	6*	2,2
Temperature*	10	6*	1,7
Radiation/light*	3	1*	3
Dust*	0	0*	0
Pests*	0	0*	0

Table 24: Average number of reports produced for each property affected by each of the 8 "Local conditions affecting physical fabric" secondary factors (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted).

205. Table 24 shows that the most reported threat amongst all factors related to local conditions affecting the physical fabric is linked to water, either rainfall or modification of the water table, with over 150 reports. On average, 3.2 reports per property concerned are examined by the World Heritage Committee in order to mitigate this specific threat.

206. However, due to the low number of properties affected by each factor of this group of threats, except for "water (rain/water table)", the results of the statistical analyses may not be significant.

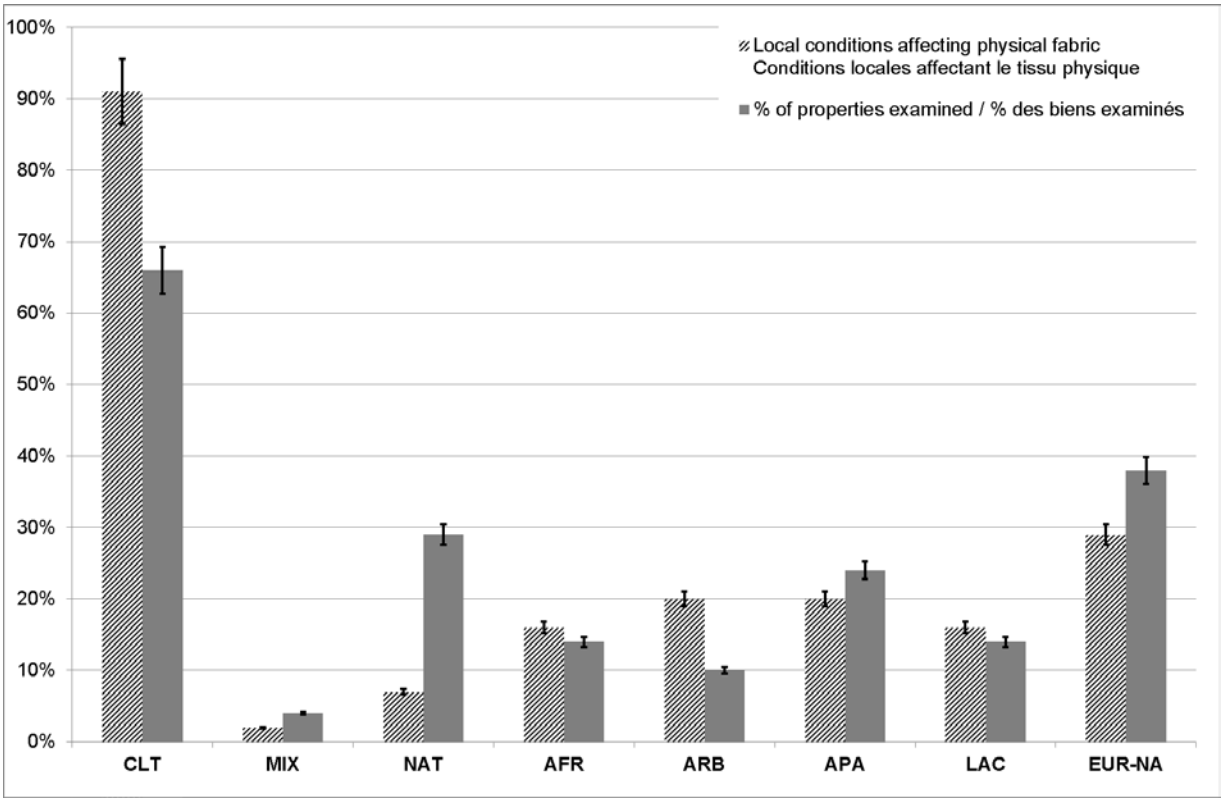


Chart 55: Percentage of properties affected by "Local conditions affecting physical fabric" for each category and region (stripes - left), compared to the percentage of properties examined in the SOC process per category and region (dark grey - right) (error bars with 5% value)

207. As indicated above, factors related to the "local conditions affecting physical fabric" have predominantly a negative impact on cultural properties (91% compared to 66% of cultural properties examined through the SOC process between 1979 and 2013), and significantly less on natural properties (7%) (see Chart 55).

208. This fact is easily understandable due to the character of the threats themselves. Indeed, this group of threats includes environmental or biological factors that contribute to deterioration processes of the fabric of heritage sites. Cultural properties are therefore primarily affected by these factors. The only few (4) natural properties affected were impacted by a change in the water table level and were mostly wetland sites.

209. Similarly, this group of threats affects significantly more the properties located in the Arab States region (20% compared to 10% of all properties examined through the SOC process) than the properties located in any of the other regions.

Threat (secondary factor)	CLT	MIX	NAT	AFR	ARB	APA	EUR/NA	LAC
Average distribution in SOC reports	66%	4%	30%	14%	10%	24%	38%	14%
Water (rain/water table)	**90%**	2%	8%	**19%**	**17%**	23%	25%	**17%**
Micro-organisms*	100%*	0%*	0%*	0%*	17%*	0%*	67%*	17%*
Radiation/light*	100%*	0%*	0%*	0%*	0%*	0%*	100%*	0%*
Relative humidity*	100%*	0%*	0%*	5%*	11%*	26%*	47%*	11%*
Temperature*	100%*	0%*	0%*	0%*	17%*	17%*	50%*	17%*
Wind*	100%*	0%*	0%*	14%*	21%*	7%*	29%*	29%*
Dust	0%	0%	0%	0%	0%	0%	0%	0%
Pests	0%	0%	0%	0%	0%	0%	0%	0%

Table 25: Distribution of properties within categories and regions for each of the "Local conditions affecting physical fabric" secondary factor. Figures in bold indicates that the percentage is significantly superior to the one expected according to the global distribution of the properties examined through the SOC process (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted).

210. As mentioned in the tables and Charts above, Table 25 confirms that factors having a negative impact on the local conditions affecting physical fabric are mostly reported for cultural properties (between 90% and 100% depending of the specific factor examined).

211. Table 25 also shows that negative impact on the Outstanding Universal Value of World heritage properties due to water (either rain or change of the water table) is notably more important for cultural properties (90%), as well as in the Africa (19%), Arab States (17%) and Latin America and the Caribbean (17%) regions. These percentages significantly exceed those expected, respectively 66% for cultural properties, 14% for Africa, 10% for the Arab States and 14% for Latin America and the Caribbean.

212. However, except for the "water (rain/water table)" factor, the number of properties affected by each of the other factors is rather low; therefore, no conclusive and statistically significant analysis can be proposed.

m) Invasive/alien species or hyper-abundant species

213. With 7% of all properties considered in this study concerned, this group of threats is the less reported of all groups and affects 32 properties located in 26 different States Parties (see Chart 56). It impacts all regions of the world and all categories of heritage, but predominantly natural properties (75%). The character of those specific threats themselves explains why natural properties are mostly impacted. The only few cultural properties (4) concerned are actually affected by hyper-abundant vegetation covering parts of the buildings/ruins.

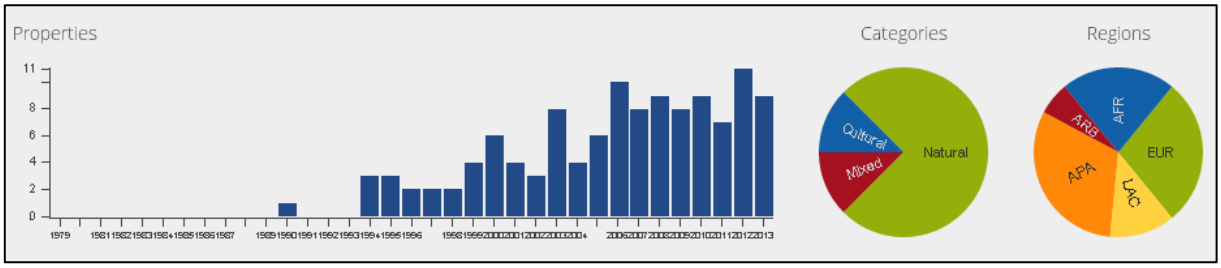


Chart 56: Distribution of the properties affected by "Invasive/alien species or hyper-abundant species" (per year, category and region)

214. The percentage of properties examined by the World Heritage Committee due to "Invasive/alien species or hyper-abundant species" has been globally increasing since 1990 (year of the first report related to this group of threats) (see Chart 57). However, it has always been very limited, affecting an average of 5% of all the properties examined through the SOC process since 1994.

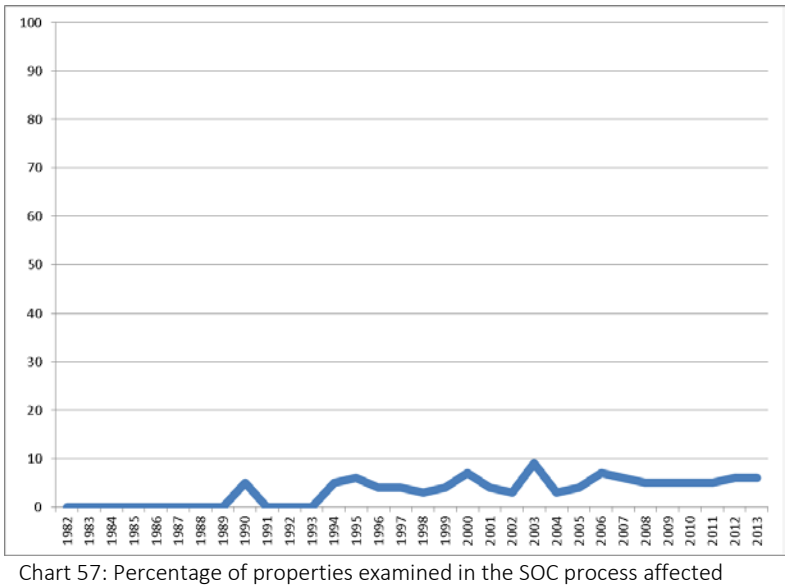


Chart 57: Percentage of properties examined in the SOC process affected by "Invasive/alien species or hyper-abundant species" over time

215. Out of the 2.642 SOC reports considered between 1979 and 2013, 119 mention a threat due to either invasive/alien terrestrial species (e.g. weed, feral animal, rodent, insect pest, bird pest, etc.) (78), invasive/alien freshwater species (e.g. weeds, fish pest, invertebrate pest, etc.) (37), invasive/alien marine species (e.g. weeds, fish pest, invertebrate pest, etc.) (16), translocated species (e.g. fish stocking, inappropriate planting, introduced soil, etc.) (9) or hyper-abundant species (1). Modified genetic material doesn't seem to have ever been reported as specific threats to the Outstanding Universal Value of World heritage properties between 1979 and 2013 (see Table 26).

Threat (secondary factor)	Number of reports	Number of properties affected	Average number of reports / property
Invasive/alien terrestrial species*	78	25*	3,1
Invasive / alien freshwater species*	37	8*	4,6
Invasive / alien marine species*	16	4*	4
Translocated species*	9	2*	4,5
Hyper-abundant species*	1	1*	1
Modified genetic material*	0	0*	0

Table 26: Average number of reports produced for each property affected by each of the 6 "Invasive/alien species or hyper-abundant species" secondary factors (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted).

216. Table 26 also shows that the invasive/alien terrestrial species is the major factor related to this group of threats, having affected 25 properties since 1990.

217. However, the number of properties affected by each of the factors related to "Invasive/alien species or hyper-abundant species" is very reduced. Therefore, no statistically significant analysis can be proposed in relation with the properties impacted by this group of threats. Tables 26 and 27 as well as Chart 58 presented above and below can only be considered as facts and cannot be used to define any statistically significant trend.

218. Specific information on this matter was however presented to the World Heritage Committee at its 33rd session (Seville, 2009) as a potentially emerging trend (see Document WHC-09/33.COM/7B, page 10).

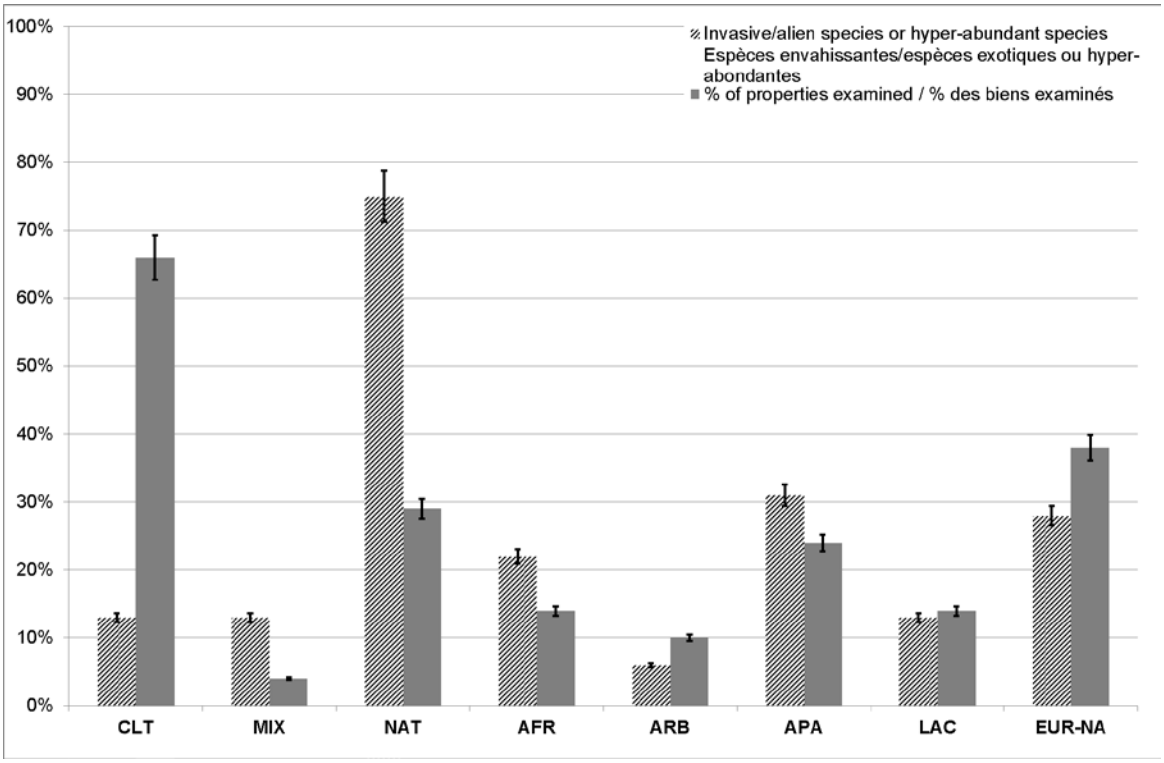


Chart 58: Percentage of properties affected by "Invasive/alien species or hyper-abundant species" for each category and region (stripes - left), compared to the percentage of properties examined in the SOC process per category and region (dark grey - right) (error bars with 5% value)

Threat (secondary factor)	CLT	MIX	NAT	AFR	ARB	APA	EUR/NA	LAC
Average distribution in SOC reports	66%	4%	30%	14%	10%	24%	38%	14%
Hyper-abundant species*	100%*	0%*	0%*	0%*	0%*	0%*	100%*	0%*
Invasive / alien freshwater species*	0%*	13%*	88%*	25%*	0%*	25%*	25%*	25%*
Invasive / alien marine species*	0%*	0%*	100%*	0%*	25%*	25%*	0%*	50%*
Invasive/alien terrestrial species*	12%*	16%*	72%*	24%*	4%*	40%*	24%*	8%*
Translocated species*	0%*	0%*	100%*	50%*	0%*	0%*	0%*	50%*
Modified genetic material	0%	0%	0%	0%	0%	0%	0%	0%

Table 27: Distribution of properties within categories and regions for each of the "Invasive/alien species or hyper-abundant species" secondary factors (*: less than 30 properties are concerned by this threat, therefore no statistically significant analysis can be conducted)

C. Analysis per type of properties (natural, mixed or cultural)

219. Following the statistical analyses of the data integrated in the Information System on the state of conservation of World Heritage properties developed in **Chapter B** above, it is interesting to look more specifically at the situation for each of the categories of heritage: natural, mixed and cultural (see Table 28).

Primary factors	Nb of properties affected	Cultural (globally: 66%)	Natural (globally: 30%)	Mixed (globally: 4%)
Management and institutional factors	369	65%	31%	4%
Buildings and Development	220	**79%**	19%	2%
Social/cultural uses of heritage	166	59%	**36%**	5%
Transportation Infrastructure	157	62%	33%	4%
Other human activities	143	55%	**43%**	2%
Biological resource use/modification	101	29%	**66%**	5%
Physical resource extraction	81	20%	**75%**	5%
Utilities or Service Infrastructure	81	44%	**53%**	2%
Sudden ecological or geological events	76	**71%**	24%	5%
Pollution	75	61%	33%	5%
Climate change and severe weather events	66	68%	27%	5%
Local conditions affecting physical fabric	56	**91%**	7%	2%
Invasive/alien species or hyper-abundant species	32	13%	**75%**	**13%**

Table 28: Distribution per category of the properties examined through the SOC process and affected by each of 13 primary factors. Figures in bold (with red background) indicates that the percentage is significantly superior to the one expected according to the global distribution of the properties examined through the SOC process. The figures with a blue background indicate a percentage inferior to the expected one.

220. Table 28 shows that some groups of threats tend to have a negative impact more specifically on certain categories of heritage rather than on the others. For example, the threats related to "Buildings and development", "Local conditions affecting physical fabric" or "Sudden ecological or geological events" tend to have a more significant impact on cultural properties than on natural properties.

221. On the contrary, threats related to "Biological resource use/modification", "Invasive/alien species or hyper-abundant species", "Physical resource extraction" and "Other human activities" appear to be more reported as negatively impacting the Outstanding Universal Value of natural heritage sites.

222. It should be noted at this stage that, due to the low number of mixed properties examined through the SOC process between 1979 and 2013 (21 properties), the tables and charts associated to this category are only presented for information. It is indeed not possible to make any statistically significant analysis.

a) Natural properties

223. Between 1979 and 2013, a total of 138 natural properties has been examined by the World Heritage Committee through the SOC process via 996 state of conservation reports. These 138 properties represent 71.5% of all the natural properties inscribed on the World Heritage List and are located in 73 States Parties (also see Chart 7).

224. As indicated in Chart 6, natural properties represent 30% of all properties examined.

225. Although Table 28 gives an indication of the threats which are more likely to affect natural properties, it is worth looking more specifically at the specific threats having a negative impact on natural properties, and the percentages of natural properties affected by each secondary factor.

Threats	Number of properties affected	% of natural properties affected
Management systems/ management plan	103	75%
Illegal activities	59	43%
Financial resources	44	32%
Ground transport infrastructure	40	29%
Impacts of tourism/visitor/recreation	39	28%
Mining	38	28%
Human resources	31	22%
Land conversion	31	22%
Livestock farming/grazing of domesticated animals	30	22%
Oil and gas	29	21%
Water infrastructure	29	21%
Major visitor accommodation and associated infrastructure	25	18%
Legal framework	24	17%
Identity, social cohesion, changes in local population and community	24	17%
Fishing/collecting aquatic resources	22	16%

Table 29: Percentage of natural properties affected by each of the 15 most encountered secondary factors

226. Table 29 shows that the most common factor having a negative impact on the Outstanding Universal Value of natural properties relates to the lack of or inappropriate Management Plan or System, or lack of implementation thereof. Indeed, this factor affects 75% of all natural properties reported under the SOC process.

227. The 2nd most encountered threat for natural properties relates to illegal human activities, such as poaching, illegal logging or trade, looting, illegal construction, for example.

228. Another important factor to consider is the lack of resources, both financial (32%) or human (22%), preventing the authorities in charge to ensure proper level of conservation of the properties; for example by not having the adequate means to put in place anti-poaching patrols.

229. The development of tourism represents a threat to natural properties; 28% of all natural sites examined through the SOC process are affected by the impact of tourism/visitor/recreation, such as high levels of visitation, and 18% by the development of major visitor accommodation and associated infrastructure.

230. The increasing need for energy is also a source of concern for the conservation of natural properties. Indeed, mining exploration/exploitation affects 28% of the natural properties examined, oil and gas exploration/exploitation 21% and the development of water infrastructures has an impact on 21% of the natural properties examined. These particular threats are on the increase (see Section B.g.) above).

231. Lastly, threats to natural properties also come from the development of infrastructures such as roads (29%), land conversion, mostly for agricultural development (22%) or livestock farming/grazing of domesticated animals (22%).

b) *Mixed properties*

232. Between 1979 and 2013, a total of 21 mixed properties has been examined by the World Heritage Committee through the SOC process via 114 state of conservation reports. These 21 properties represent 72.4% of all the mixed properties inscribed on the World Heritage List and are located in 14 States Parties (also see Chart 7).

233. As indicated in Chart 6, mixed properties represent 4.5% of all properties examined.

234. Although Table 28 gives an indication of the threats which are more likely to affect mixed properties, due to the reduced number of mixed properties examined through the SOC process between 1979 and 2013 (21), the table below is only presented for information. It is indeed not possible to make any statistically significant analysis.

Threats	Number of properties affected	% of mixed properties affected
Management systems/ management plan	13	62%
Impacts of tourism/visitor/recreation	7	33%
Ground transport infrastructure	6	29%
Invasive/alien terrestrial species	4	19%
Financial resources	3	14%
Illegal activities	3	14%
Forestry /wood production	3	14%
Effects arising from use of transportation infrastructure	2	10%
Ground water pollution	2	10%
Water infrastructure	2	10%
Fire (widlfires)	2	10%
Major visitor accommodation and associated infrastructure	2	10%
Interpretative and visitation facilities	2	10%
Mining	2	10%
Housing	2	10%

Table 30: Percentage of mixed properties affected by each of the 15 most encountered factors

235. Table 30 shows that, as for natural properties, the most common factor having a negative impact on the Outstanding Universal Value of mixed properties relates to the lack of or inappropriate Management Plan or System, or lack of implementation thereof. Indeed, this factor affects 62% of all mixed properties reported.

236. The 2nd most encountered threat for mixed properties relates to the negative impact of tourism/visitor/recreation, with one third (33%) of the mixed properties considered being affected. This threat should also be regarded with the development of major visitor accommodation and associated infrastructure as well as the development of interpretative and visitation facilities, which affects each 10% of the mixed sites.

237. The construction of ground transport infrastructures, as well as the effects arising from their use, represents an important threat, affecting respectively 29% and 10% of the mixed properties.

238. The need for energy also represents a threat, but seems however to affect mixed properties to a lesser extent than natural properties. Indeed, water infrastructures and mining (exploration

and/or exploitation) affect each 10% of the mixed properties when they affect respectively 21% and 28% of natural properties.

239. Lastly, threats also come from invasive/alien terrestrial species (19%), wood production (14%) and wildfires (10%).

c) *Cultural properties*

240. Between 1979 and 2013, a total of 310 cultural properties has been examined by the World Heritage Committee through the SOC process via 1.532 state of conservation reports. These 310 properties represent 40.8% of all the cultural properties inscribed on the World Heritage List and are located in 108 States Parties (also see Chart 7).

241. As indicated in Chart 6, cultural properties represent 66% of all properties examined.

242. Although Table 28 gives an indication of the threats which are more likely to affect cultural properties, it is worth looking more specifically at the threats having a negative impact on cultural properties, and the specific percentages of cultural properties affected by each secondary factor.

Threats	Number of properties affected	% of cultural properties affected
Management systems/ management plan	215	69%
Housing	153	49%
Legal framework	86	28%
Management activities	81	26%
Impacts of tourism/visitor/recreation	75	24%
Ground transport infrastructure	62	20%
Human resources	48	15%
Financial resources	44	14%
Deliberate destruction of heritage	44	14%
Water (rain/water table)	43	14%
Illegal activities	41	13%
Interpretative and visitation facilities	40	13%
Major visitor accommodation and associated infrastructure	38	12%
Effects arising from use of transportation infrastructure	34	11%
Identity, social cohesion, changes in local population and community	31	10%

Table 31: Percentage of cultural properties affected by each of the 15 most encountered factors

243. Table 31 shows that, as for mixed and natural properties, the most common factor having a negative impact on the Outstanding Universal Value of cultural properties relates to the lack of or inappropriate Management Plan or System, or lack of implementation thereof. Indeed, this factor affects 69% of all cultural properties reported under the SOC process. This factor should be regarded jointly with the lack of or inadequate legal framework for the protection of the property, which affects 28% of the cultural properties. Management activities also represent a serious threat to cultural sites, as in 26% of the cases, they are reported as having a negative impact on the Outstanding Universal Value.

244. The 2nd most encountered threat for cultural properties relates to housing, such as high-rise buildings, urban sprawl, changes to skyline, etc… and affects almost half of the cultural properties examined (49%).

245. Another important factor to consider is the lack of resources, both human (15%) or financial (14%), preventing the authorities in charge to ensure proper level of conservation of the properties.

246. Illegal activities and deliberate destruction of heritage affect respectively 14% and 13% of the cultural properties examined through the SOC process. This is significantly less than in the case of natural heritage (with 43% of the properties being impacted), but remains one of the 15 most encountered threats for cultural properties.

247. The negative impact of tourism/visitor/recreation, with one fourth (24%) of the cultural properties considered being affected, is an important factor to take into account. This threat should also be regarded with the development of interpretative and visitation facilities as well as the development of major visitor accommodation and associated infrastructure, which respectively affect 13% and 12% of the cultural properties examined.

248. Finally, the construction of ground transport infrastructures, as well as the effects arising from their use, represent important threats, affecting respectively 20% and 11% of the cultural properties examined.

249. Lastly, the changing water table level or heavy rains affects 14% of the cultural properties examined. This change of water table can negatively impact the structural stability of the buildings and lead to cracks or collapses of walls or can have devastating results on archaeological deposits; while heavy rain can lead to excessive humidity and collapse of roofs.

D. Analysis per region

Primary factors	Nb of properties affected	AFR (globally: 14%)	ARB (globally: 10%)	APA (globally: 24%)	EUR-NA (globally: 38%)	LAC (globally: 14%)
Management and institutional factors	369	15%	12%	25%	32%	16%
Buildings and Development	220	11%	12%	21%	39%	17%
Social/cultural uses of heritage	166	15%	11%	25%	30%	**19%**
Transportation Infrastructure	157	9%	11%	24%	35%	**20%**
Other human activities	143	**24%**	**16%**	24%	22%	14%
Biological resource use/modification	101	**26%**	14%	19%	21%	**21%**
Physical resource extraction	81	**28%**	4%	25%	35%	9%
Utilities or Service Infrastructure	81	11%	10%	26%	40%	14%
Sudden ecological or geological events	76	18%	11%	21%	28%	**22%**
Pollution	75	15%	**15%**	20%	37%	13%
Climate change and severe weather events	66	18%	14%	21%	23%	**24%**
Local conditions affecting physical fabric	56	16%	**20%**	20%	29%	16%
Invasive/alien species or hyper-abundant species	32	**22%**	6%	**31%**	28%	13%

Table 33: Distribution per region of the properties examined through the SOC process and affected by each of the 13 primary factors. Figures in bold (with red background) indicates that the percentage is significantly superior to the one expected according to the global distribution of the properties examined through the SOC process. The figures with a blue background indicate a percentage inferior to the expected one.

250. As seen in the previous sections (B and C), the most encountered threats having a negative impact on the Outstanding Universal Value of World Heritage properties examined through the SOC process have been clearly identified. However, as for the categories of heritage (natural, cultural, mixed), there are differences from one region to another. Some specific threats can be more predominant in certain parts of the World than in others. This section will present the ranking of the secondary factors for each region.

251. Some threats seem to affect all regions similarly, while some others are significantly more (or less) reported in certain regions. For example, physical resource extractions are reportedly a more frequent threat in the Africa region and are significantly less reported in the Arab States or Latin America and the Caribbean regions (see Table 33).

252. Table 33 also shows that threats related to illegal activities, deliberate destruction of heritage, war, civil unrest ("Other human activities") seem to be more present in the Africa and Arab States regions, while threats related to invasive species tend to be more reported in the Asia-Pacific region.

253. For further details on the specific factors having a negative impact on the Outstanding Universal Value of World Heritage properties in each region, see Annex 2.

a) Africa

254. Since 1982, a total of 64 properties located in the Africa region has been examined by the World Heritage Committee through the SOC process via 509 state of conservation reports. These 64 properties represent 72.7% of all the properties of this region inscribed on the World Heritage List and are located in 24 States Parties.

255. 47% of these properties are cultural; 48% natural and 5% mixed (see Chart 59).

256. Properties of the Africa region represent 14% of all properties examined through the SOC process while they represent 9% of the properties inscribed on the World Heritage List. World Heritage properties in this region seem more prone to being reported to the World Heritage Committee through a SOC report than properties located in the other regions.

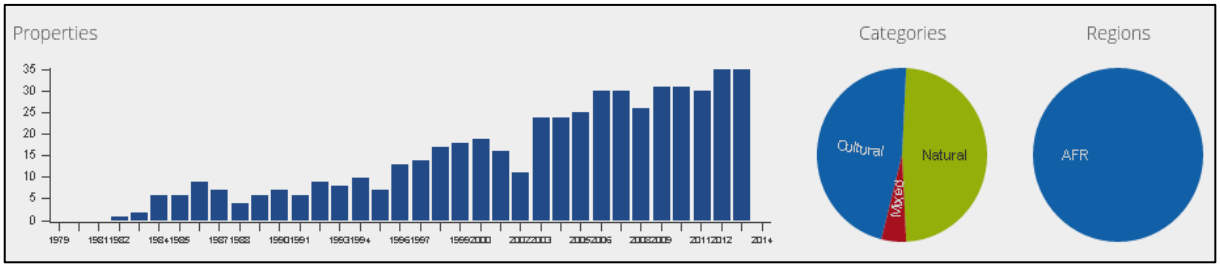


Chart 59: Distribution of the properties of the Africa region examined through the SOC process since 1982

257. As evidenced by Table 33, the Africa region seems to be more subject than other regions to 4 main groups of threats: Other human activities; Biological resources use/modification; Physical resource extraction; and Invasive/alien species or hyper-abundant species. It is slightly less sensitive to Transportation infrastructures than the other regions.

Threats	Number of properties affected	% of properties affected
Management systems/ management plan	52	81%
Financial resources	30	47%
Illegal activities	30	47%
Human resources	25	39%
Housing	18	28%
Land conversion	18	28%
Livestock farming/grazing of domesticated animals	18	28%
Identity, social cohesion, changes in local population and community	17	27%
Mining	17	27%
Civil unrest	15	23%
Legal framework	14	22%
War	14	22%
Ground transport infrastructure	10	16%
Impacts of tourism/visitor/recreation	10	16%
Management activities	9	14%
Water (rain/water table)	9	14%
Water infrastructure	9	14%
Oil and gas	9	14%

Table 34: Percentage of properties in the Africa region affected by each of the most encountered factors

258. More specifically, the Africa region is mostly affected (81%) by the lack of Management Plan or System. This threat not only includes the lack of such document or system, but also inadequate ones, or lack of implementation. The concern could also come from the absence or lack of clear boundaries (see Table 34).

259. Other management issues such as lack of human and financial resources, or their inadequate levels play also a significant role by hampering the proper conservation of the properties. Almost half of the properties examined in the Africa region are affected (47%).

260. Another key threat affecting the conservation of the World Heritage properties in Africa is related to illegal human activities such as poaching, illegal logging and destruction of heritage, as well as illegal settlements, and has an impact on 47% of the examined properties in the region.

261. This latter threat has to be seen in the wider context, together with other threats reported in the SOC process: war (22%); civil unrest (23%); housing (28%), land conversion (28%), changes in local population and community (27%) and livestock farming/grazing (28%). Indeed, in war or civil unrest zones, often populations are pushed to seek refuge in unoccupied areas (such as forests areas), where they establish new settlements and convert land to build houses and harvest. In a number of cases, armed groups settle in such environments (forests), and depend on the available resources, hence a high rate of poaching.

262. The World Heritage properties of the region also pay a heavy toll to the increasing need for energy. Indeed, mining operations (exploration and/or exploitation) affect 27% of the properties and oil and gas exploration/exploitation 14%. If we add the projects for dams (14%), this is near 1 property out of 3 which is impacted in the region (35%).

263. Furthermore, it is important to note that this region is also highly concerned by the cumulative impact of several factors. Indeed, when on average there are 5.1 threats reported per property examined through the SOC process, this rate increases to 6.8 for the Africa region.

b) Arab States

264. Since 1982, 49 properties located in the Arab States region have been examined by the World Heritage Committee through the SOC process in 306 state of conservation reports. These 49 properties represent 66.2% of all the properties of this region inscribed on the World Heritage List and are located in 15 States Parties.

265. 90% of these properties are cultural and 10% are natural properties. No mixed property has been examined in this region (see Chart 60).

266. Properties of the Arab States region represent 10% of all properties examined through the SOC process while they represent 8% of the properties inscribed on the World Heritage List.

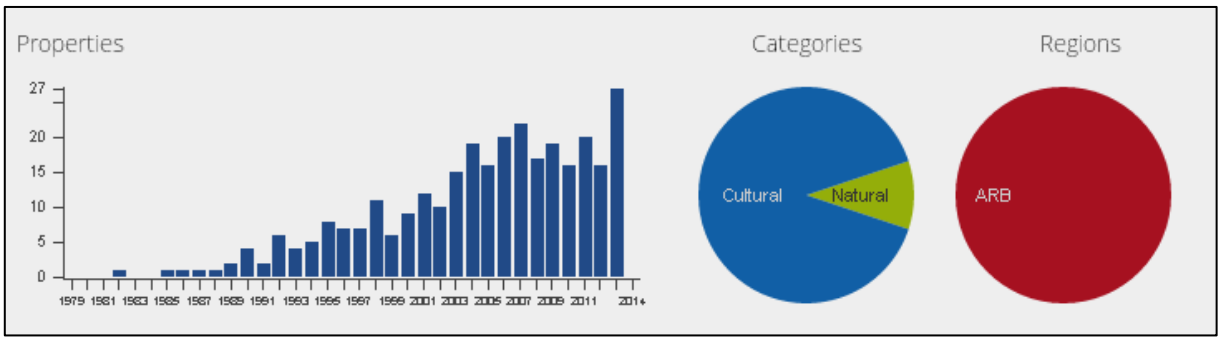


Chart 60: Distribution of the properties of the Arab States region examined through the SOC process since 1982

267. As evidenced by Table 33, the Arab States region seems to be more subject than other regions to 3 main groups of threats: Other human activities; Pollution; and Local conditions affecting the physical fabric. The only group of threats which seems to represent less risk than for other regions is that of physical resource extraction (e.g. mining, oil and gas, quarrying).

Threats	Number of properties affected	% of properties affected
Management systems/ management plan	41	84%
Housing	25	51%
Management activities	14	29%
Legal framework	14	29%
Ground transport infrastructure	13	27%
Illegal activities	13	27%
Human resources	12	24%
Impacts of tourism/visitor/recreation	12	24%
Deliberate destruction of heritage	10	20%
Identity, social cohesion, changes in local population and community	10	20%
Land conversion	10	20%
Major visitor accommodation and associated infrastructure	8	16%
Solid waste	8	16%
Water (rain/water table)	8	16%
Financial resources	7	14%
Effects arising from use of transportation infrastructure	7	14%
War	7	14%
Erosion and siltation/ deposition	7	14%
Flooding	7	14%

Table 35: Percentage of properties in the Arab States region affected by each of the most encountered factors

268. Similarly to the Africa region, the Arab States region's prime threat relates to the lack of Management Plan or System (84%). This threat not only includes the lack of such document or system, but also inadequate ones, or lack of implementation thereof. The problem can also come from the absence or lack of clear boundaries (see Table 35).

269. In terms of Management issues, a number of management activities have had a negative impact on the properties and represented such a threat to the authenticity of the sites such that a report had to be presented to the World Heritage Committee (29%). In addition, for 29% of the properties examined, the legal framework for the conservation/protection of the property was not in place or was inadequate.

270. In the Arab States region, the negative impact of tourism/visitor/recreation is rather high and affects 24% of the properties examined, in addition of which 16% of the properties are impacted by the development of major visitor accommodation and associated infrastructure.

271. The construction of ground transport infrastructures and the subsequent effects of their use affect respectively 27% and 14% of the properties in the Arab States region.

272. The region is also very sensitive to the local conditions such as rain and changes of the water table (16%), other weather events such as flooding (14%) or geological events such as erosion (14%).

273. Finally, human activities such as illegal activities (27%), deliberate destruction of heritage (20%) and war (14%) also represent a major threat to World Heritage in the region and have triggered a number of reports (94) to the World Heritage Committee since 1982. Indeed, globally, the 3 above-mentioned factors have impacted 44% of the properties examined in the region.

274. Furthermore, it is important to note that this region is also concerned by the cumulative impact of several factors. Indeed, when on average there are 5.1 threats reported per property examined through the SOC process, this rate increases to 6.2 for the Arab States region.

c) *Asia-Pacific*

275. Since 1983, a total of 111 properties located in the Asia-Pacific region have been examined by the World Heritage Committee through the SOC process in 561 state of conservation reports. These 111 properties represent 50.2% of all the properties of this region inscribed on the World Heritage List and are located in 24 States Parties.

276. 59% of these properties are cultural; 34% are natural and 7% mixed (see Chart 61).

277. Properties of the Asia-Pacific region represent 24% of all properties examined through the SOC process and 23% of the properties inscribed on the World Heritage List.

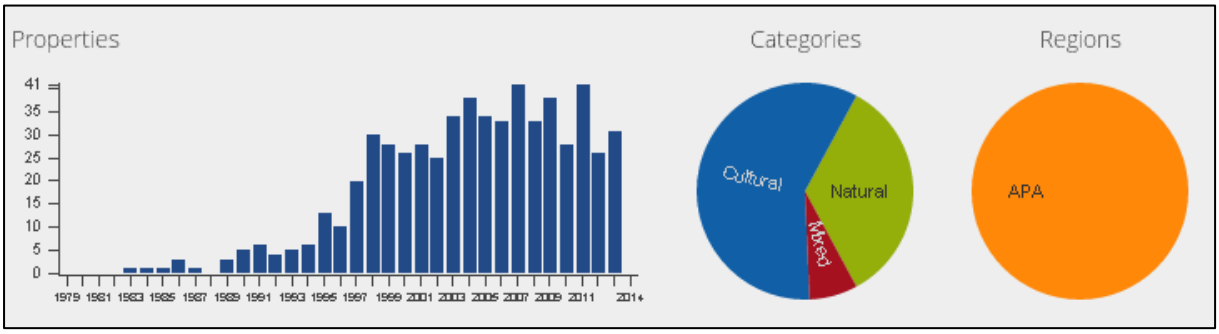


Chart 61: Distribution of the properties of the Asia-Pacific region examined through the SOC process since 1982

278. As evidenced by Table 33, the Asia-Pacific region doesn't seem to be more subject than other regions to any specific factor. It is however significantly less sensitive to Biological resource use/modification, to Pollution and to Local conditions affecting physical fabric than the other regions.

Threats	Number of properties affected	% of properties affected
Management systems/ management plan	85	77%
Housing	36	32%
Impacts of tourism/visitor/recreation	35	32%
Ground transport infrastructure	30	27%
Illegal activities	29	26%
Management activities	25	23%
Legal framework	24	22%
Financial resources	22	20%
Human resources	17	15%
Interpretative and visitation facilities	15	14%
Mining	13	12%
Major visitor accommodation and associated infrastructure	13	12%
Identity, social cohesion, changes in local population and community	12	11%
Effects arising from use of transportation infrastructure	11	10%
Land conversion	11	10%
Water infrastructure	11	10%
Deliberate destruction of heritage	11	10%
Commercial development	11	10%
Water (rain/water table)	11	10%

Table 36: Percentage of properties in the Asia-Pacific region affected by each of the most encountered factors

279. As for the other regions, the Asia-Pacific region's prime threat relates to the lack of Management Plan or System (77%). This threat does not only include the lack of a Management Plan or System, but also inadequate ones, or lack of implementation. The problem can also result from the absence/lack of clear boundaries (see Table 36).

280. Management and institutional issues represent globally an essential threat to the conservation of the World Heritage properties in the Asia-Pacific region. Indeed, all relevant "Management and institutional" secondary factors have been reported and affect a significant percentage of the properties: inappropriate management activities (23%), inadequate or inexistent legal framework (22%), lack or insufficient financial resources (20%) or human resources (15%). Globally, management and institutional factors affect 82% of all the properties examined in the region.

281. The second most reported specific threats in the region relates to housing and to the impacts of tourism/visitor/recreation, each of them affecting 32% of the properties examined.

282. In the Asia-Pacific region, the negative impact of tourism/visitor/recreation is indeed rather high with 32% of the properties examined being affected. It should be regarded in conjunction with the 14% of the properties affected by the lack of interpretative and visitation facilities and the 12% of the properties impacted by the development of major visitor accommodation and associated infrastructure. Tourism-related factors as a whole affect 46 properties out of the 111 examined (41%) in the region.

283. The construction of ground transport infrastructure and the subsequent effects of their use affect respectively 27% and 10% of the properties in the Asia-Pacific region.

284. As for the Africa region, but to a lesser extent, the properties of the Asia-Pacific region are endangered by the increasing need for energy. Indeed, mining operations (exploration and/or exploitation) affect 12% of the properties and projects for dams 10%. These 2 factors together represent a threat to almost 20% of the properties examined in the region.

285. Furthermore, it is important to note that this region is also concerned by the cumulative impact of several factors. Indeed, when on average there are 5.1 threats reported per property examined through the SOC process, which is similar to the rate found for the Asia-Pacific region.

d) Europe and North America

286. Between 1979 and 2013, a total of 177 properties located in the Europe and North America region have been examined by the World Heritage Committee through 830 state of conservation reports. These 177 properties represent 37.7% of all the properties of this region inscribed on the World Heritage List and are located in 44 States Parties.

287. 72% of these properties are cultural; 24% are natural and 4% mixed (see Chart 62).

288. Properties of the Europe and North America region represent 38% of all properties examined through the SOC process while they represent 48% of the properties inscribed on the World Heritage List.

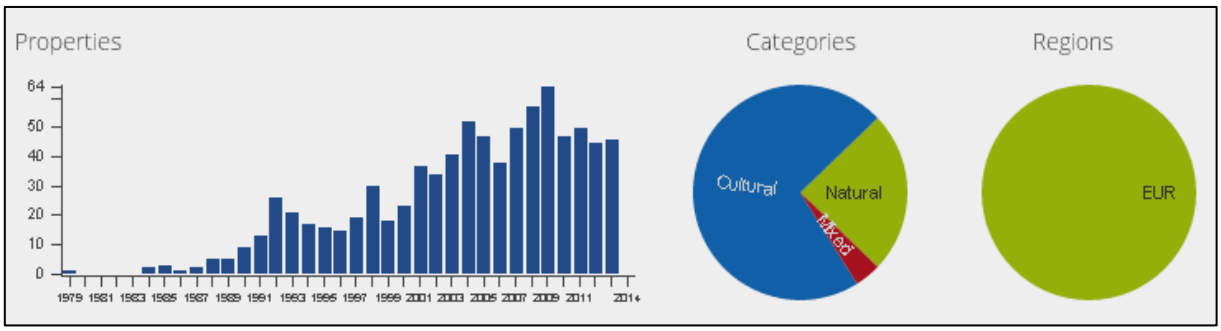


Chart 62: Distribution of the properties of the Europe and North America region examined through the SOC process since 1982

289. As evidenced by Table 33, the Europe and North America region doesn't seem to be more subject to any specific threat than the other regions. To the contrary, it appears to be less prone to reporting due to a number of factors, such as Management and institutional factors; Social/cultural uses of heritage; Other human activities; Biological resources use/modification or Climate change and severe weather events.

Threats	Number of properties affected	% of properties affected
Management systems/ management plan	102	58%
Housing	67	38%
Impacts of tourism/visitor/recreation	44	25%
Ground transport infrastructure	36	20%
Legal framework	32	18%
Management activities	26	15%
Major visitor accommodation and associated infrastructure	23	13%
Interpretative and visitation facilities	17	10%
Illegal activities	16	9%
Effects arising from use of transportation infrastructure	14	8%
Deliberate destruction of heritage	14	8%
Financial resources	14	8%
Mining	14	8%
Oil and gas	13	7%
Water (rain/water table)	12	7%
Human resources	12	7%

Table 37: Percentage of properties in the Europe and North America region affected by each of the most encountered factors

290. The Europe and North America region's prime threat relates to the lack of Management Plan or System, with more than half of the properties examined affected (58%). It should be noted that this threat doesn't only include the lack of such document or system, but also inadequate ones, or lack of implementation thereof. The problem can also come from the absence or lack of clear boundaries (see Table 37).

291. The second most reported specific threat in the region relates to housing (38%), with a significant number of properties being threatened by the development of high-rise buildings.

292. The negative impact of tourism/visitor/recreation is also rather high in the Europe and North America region and affects 25% of the properties examined. It should be regarded in conjunction with the 13% of the properties impacted by the development of major visitor accommodation and associated infrastructure and the 10% of the properties affected by the lack of interpretative and visitation facilities. Tourism-related factors as a whole affect 62 properties out of the 177 examined (35%) in the region.

293. The 4th highest threat in the region relates to the construction of ground transport infrastructures and the subsequent effects of their use, which affect respectively 20% and 8% of the properties examined in the region.

294. As for the Asia-Pacific region, but in a much lesser extent, a number of properties is threatened by the increasing need for energy such as mining operations (exploration and/or exploitation) (8%) and oil and gas exploration/exploitation (7%). These 2 factors together represent a threat to almost 12% of the properties examined in the region.

295. In terms of energy, it is interesting to note at this stage that properties in the Europe and North America region are the most impacted by the development of renewable energy facilities (e.g. wind-farms). Indeed, 88% of the affected properties are located in this region. However, this figure can only be regarded as an observation, not as a trend, due to the very limited number of properties concerned (8).

296. Furthermore, it is important to note that this region is also concerned by the cumulative impact of several factors; however in a much lesser degree than the other regions. Indeed, when on average there are 5.1 threats reported per property examined through the SOC process, this rate drops to 3.9 for the Europe and North America region.

e) *Latin America and the Caribbean*

297. Since 1985, a total of 68 properties located in the Latin America and the Caribbean region have been examined by the World Heritage Committee through the SOC process in 436 state of conservation reports. These 68 properties represent 52.7% of all the properties of this region inscribed on the World Heritage List and are located in 23 States Parties.

298. 65% of these properties are cultural; 31% are natural and 4% mixed (see Chart 63).

299. Properties of the Latin America and the Caribbean region represent 14% of all properties examined through the SOC process and 13% of the properties inscribed on the World Heritage List.

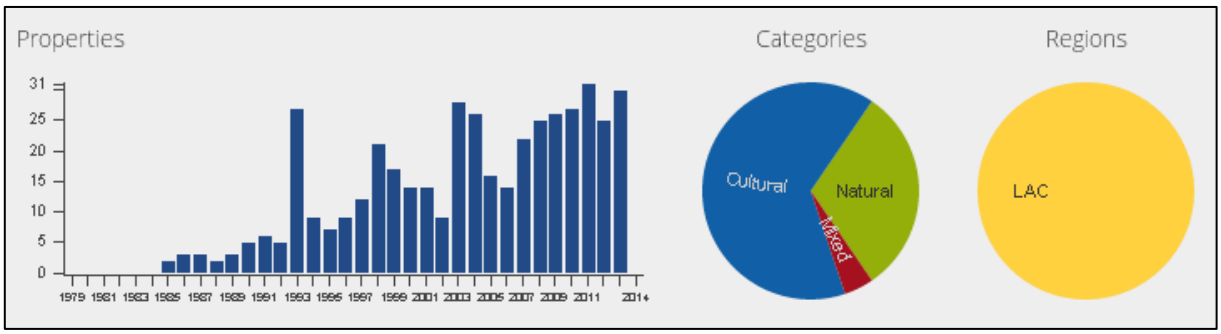


Chart 63: Distribution of the properties of the Latin America and the Caribbean region examined through the SOC process since 1985

300. As evidenced by Table 33, the Latin America and the Caribbean region seems to be more subject than other regions to a number of main groups of threats, such as: Climate change and severe weather events; Sudden ecological or geological events; Biological resources use/modification; Transportation infrastructure as well as Social/cultural uses of heritage. On the contrary, it seems to be significantly less subject to Physical resources extraction than other regions.

Threats	Number of properties affected	% of properties affected
Management systems/ management plan	51	75%
Housing	29	43%
Legal framework	28	41%
Impacts of tourism/visitor/recreation	20	29%
Ground transport infrastructure	19	28%
Financial resources	18	26%
Illegal activities	15	22%
Human resources	14	21%
Land conversion	14	21%
Major visitor accommodation and associated infrastructure	14	21%
Identity, social cohesion, changes in local population and community	14	21%
Management activities	14	21%
Effects arising from use of transportation infrastructure	12	18%
Storms	11	16%
Livestock farming/grazing of domesticated animals	10	15%

Table 38: Percentage of properties in the Latin America and the Caribbean region affected by each of the most encountered factors

301. Likewise the other regions, the Latin America and the Caribbean region is affected at 75% by the lack of Management Plan or System. This threat not only includes the lack of such document or system, but also inadequate ones, or lack of implementation. The problem could also come from the absence or lack of clear boundaries (see Table 38).

302. Management and institutional issues in general represent a major threat to the conservation of the properties examined in the Latin America and the Caribbean region. All the relevant secondary factors reported affect a significant percentage of the properties: inadequate or inexistent legal framework (41%), lack of or insufficient financial resources (26%) or human resources (21%), inappropriate management activities (21%). Globally, management and institutional factors affect over 80% of all the properties examined in the region.

303. The second most reported specific threat in the region relates to housing (43%) such as the development pressures on the historical centres for example, or uncontrolled urban development.

304. As for the Europe and North America region, the negative impact of tourism/visitor/recreation is also rather high in the Latin America and the Caribbean region and affects 29% of the properties examined. This factor should be observed in conjunction with the 21% of the properties impacted by the development of major visitor accommodation and associated infrastructure. Tourism-related factors as a whole affect 24 properties out of the 68 examined in the region (35%).

305. The 5th highest specific threat in the region is related to the construction of ground transport infrastructures and the subsequent effects of their use, which affect respectively 28% and 18% of the properties examined in the region. This is the region the most threatened by these factors.

306. Another key threat affecting the conservation of the World Heritage properties in the Latin America and the Caribbean region is related to illegal human activities (22%), mostly illegal extraction of natural resources (logging and hunting) as well as illegal occupation of land. This latter should be viewed in conjunction with the land conversion, changes in the local population and community and livestock farming/grazing factors, which impact respectively 21%, 21% and 15% of the properties examined.

307. Lastly, the Latin America and the Caribbean region is the only one where storms represent a high threat to the properties. Indeed, this factor has impacted 16% of the properties examined.

308. Although it is not one of the major threats to World Heritage in the region, it is however important to note that properties in the region pay a heavy toll to earthquakes. Since 1985, 12% of all properties examined in the region have been affected by such geological event while it represents a threat to 2-6% of the properties in other regions.

309. In addition, this region is also highly concerned by the cumulative impact of several factors. Indeed, when on average there are 5.1 threats reported per property examined through the SOC process, this rate increases to 6.3 for the Latin America and the Caribbean region.

VI. USEFUL REFERENCES

- UNESCO World Heritage Centre - http://whc.unesco.org
- UNESCO World Heritage Centre
  Information System on the state of conservation of World Heritage properties - http://whc.unesco.org/en/soc
- ICOMOS : http://www.icomos.org
- IUCN : http://www.iucn.org
- ICCROM : http://www.iccrom.org
- World Heritage Reports n°22 - Climate Change and World Heritage http://whc.unesco.org/en/series/22/
- World Heritage Series n°10 - Monitoring World Heritage http://whc.unesco.org/en/series/10/
- Case Studies on Climate Change and World Heritage http://whc.unesco.org/en/activities/473
- World Heritage: Challenges for the Millennium http://whc.unesco.org/documents/publi_millennium_en.pdf
- ICOMOS Guidance on Heritage Impact Assessments for Cultural World Heritage Properties - http://www.international.icomos.org/world_heritage/HIA_20110201.pdf
- IUCN World Heritage advice note on Environmental Assessments - http://iucn.org/about/work/programmes/wcpa_worldheritage/resources/policies
- International Council on Mining and Metals (ICMM): http://www.icmm.com
- ICMM Mining and Protected Areas Position Statement (September 2003) - http://www.icmm.com/document/43 (exists only in English)
- Shell commitment for World Heritage - http://www.shell.com/global/environment-society/environment/biodiversity/protected-areas.html
- Total pledge to protect all ecosystems - http://total.com/en/society-environment/environment/local-environmental-footprint/biodiversity

VII. ANNEXES

Annex 1: List of factors (threats) affecting World Heritage properties as designed for the Periodic Reporting (revised questionnaire, Section II)

Annex 2: Percentage of World Heritage properties (for each of the 5 regions) negatively affected by each secondary factor

List of factors (threats) affecting World Heritage properties
as designed for the Periodic Reporting (revised questionnaire, Section II)

1.Buildings and Development

1.1 – Housing

For example

- Urban high rise/urban sprawl
- Encroachment/changes to skyline etc

1.2 - Commercial development

For example

- Skyscrapers
- Large shopping malls
- Encroachment/changes to skyline etc

1.3 - Industrial areas

For example

- Individual factories
- Industrial areas/parks
- Encroachment/changes to skyline etc

1.4 - Major visitor accommodation and associated infrastructure

For example

- Major accommodation and associated infrastructure (hotels, restaurants, golf courses, ski resorts, etc)
- Major/permanent high cost tourism facilities (pontoons, jetties, observatories, cable cars , chalets, fully serviced camping areas, etc)

1.5 - Interpretative and visitation facilities

For example

- Visitor interpretive facilities (visitor centre, site museum, etc)
- Signage etc
- Trail hardening, (trail markers etc)
- Information booths etc
- Minor picnic facilities
- Minor camping areas
- Moorings/marker buoys

2.Transportation Infrastructure

2.1 - Ground transport infrastructure

For example:

- Roads
- Car parks
- Railways, including easements
- Transport depots

2.2 - Air transport infrastructure

For example:

- Airports
- Airstrips

2.3 - Marine transport infrastructure

For example:

- Harbour & port facilities

2.4 - Effects arising from use of transportation infrastructure

For example

- Effects of vehicle traffic on roadways
- Effects of shipping traffic in shipping routes
- Effects of air traffic

2.5 - Underground transport infrastructure

3.Utilities or Service Infrastructure

Developments in relation to infrastructure for energy utilities (i.e. gas, electricity and water) and other service requirements

3.1 - Water infrastructure

For example:

- Dams
- Locks
- Weirs
- Water tanks
- Pumping stations
- Introduction of new systems/ infrastructure

3.2 - Renewable energy facilities

For example

- Thermal
- Wave
- Solar
- Wind

3.3 - Non-renewable energy facilities

For example

- Nuclear power plants
- Coal power plants
- Oil/gas facilities

3.4 - Localised utilities

For example:

- Incinerators
- Cell phone towers
- Sewerage works
- Microwave/TV/radio towers

3.5 - Major linear utilities

For example:

- Power lines/easements
- Pipelines etc
- Channels

4.Pollution

All types of pollution (residential or commercial) as well as garbage, solid waste.

4.1 - Pollution of marine waters

For example

- Ocean dumping
- Bilge water discharge
- Solid debris in marine environments

4.2 - Ground water pollution

For example

- Oil/chemical spills
- Industrial effluent
- Agricultural runoff
- Household sewage/waste
- Acid sulphate soils
- Effluent discharge
- Mine/tailings runoff

4.3 - Surface water pollution

For example

- Acid rain
- Mine/tailings runoff
- Agricultural runoff

4.4 - Air pollution

For example:

- Excessive smoke or other airborne particulates
- Dust
- Local effects of emissions from use of fossil fuels

4.5 - Solid waste

For example

- Mine tailings
- Litter
- Industrial waste
- Household rubbish

4.6 - Input of excess energy

For example:

- Any inputs of heat and light that disturb ecosystems including inappropriate urban lighting, heat pollution, etc

5.Biological resource use/modification

The collecting/harvesting of wild plants and animals (forestry, fishing, hunting, gathering) and harvesting domesticated species (silviculture, agriculture, aquaculture)

5.1 - Fishing/collecting aquatic resources

For example:

- Trawling
- Netting
- Line fishing
- Game fishing
- Collection/harvest fisheries
- Spearfishing
- By-catch/incidental take issues

5.2 - Aquaculture

For example:

- Marine
- Freshwater aquaculture

5.3 - Land conversion

For example

- Agriculture (crops and livestock)
- Rural
- Forestry

5.4 - Livestock farming/grazing of domesticated animals

For example

- Grazing on farms or by pastoral groups

5.5 - Crop production

For example:

- Deep ploughing
- New crops
- Intensification of planted agriculture
- Traditional crops
- Traditional systems
- Gardening

5.6 - Commercial wild plant collection

For example

- Pharmaceutical trade
- Medicinal plants
- Fodder collection
- Thatching
- Mushrooms
- Bulbs etc

5.7 - Subsistence wild plant collection

Use this question for Indigenous subsistence hunting, gathering and collecting, i.e. not for economic benefit, for example:

- Food plants
- Medicinal plants
- Fodder collection
- Thatching
- Mushrooms
- Bulbs etc

5.8 - Commercial hunting

For example:

- Bushmeat trade
- Organised game hunting

5.9 - Subsistence hunting

- Subsistence, i.e. not for economic benefit, hunting. Use (8.3) below to indicate factors relating specifically to Indigenous hunting, gathering and collecting

5.10 - Forestry /wood production

For example:

- Logging
- Pulp production
- All silvicultural operations
- Restoration/regeneration
- Sustainable wood harvesting

6.Physical resource extraction

If illegal see 9

6.1 - Mining

6.2 - Quarrying

For example:

- Rock
- Sand
- Aggregates

6.3 - Oil and gas

6.4 – Water extraction

7.Local conditions affecting physical fabric

Environmental or biological factors that promote or contribute to deterioration processes of the fabric of heritage sites. Since effects of decay cannot be attributed to a single factor, consider all elements.
Use 4.4 above for air pollution.
Use 10 below for severe weather, including flooding.
For tourism activities 8.6.

7.1 - Wind

For example:

- Erosion
- Vibration

7.2 - Relative humidity

7.3 - Temperature

7.4 - Radiation/light

7.5 - Dust

7.6 – Water, Rain

7.7 - Pests

7.8 - Micro-organisms

8.Social/cultural uses of heritage

Social factors that contribute to deterioration processes of the fabric of heritage sites. Some uses might have a positive impact as they enhance certain values (eg ritual, religious) while others might compromise ascribed values and could lead to the deterioration of the heritage site.
Use 1.4 and 1.5 above for impacts of tourism infrastructure and tourism activities in 8.6. below

8.1 - Ritual/spiritual/religious and associative uses

For example:

- Ritual/spiritual/religious uses and associations
- Festivals/performances

8.2 - Society's valuing of heritage

For example:

- Changes in values leading to new uses of heritage resources
- Expansions of / additions to current uses of heritage resources
- Conflicting values
- Abandonment

8.3 - Indigenous hunting, gathering and collecting

8.4 - Changes in traditional ways of life and knowledge system

For example:

- Loss of traditional knowledge and practices linked to heritage

8.5 - Identity, social cohesion, changes in local population and community

For example:

- Changes to identity and social cohesion
- Changes in livelihoods
- Migration to or from site
- Changes in local population and community

8.6 - Impacts of tourism/visitor/recreation

For example:

- Inappropriate/non-existent interpretation (not an impact)
- High levels of visitation
- Increase of vendors inside/outside site
- Building community support, sustainable livelihoods

9.Other human activities

Note Use 8 above for impacts on local communities

9.1 - Illegal activities

For example:

- Illegal extraction of biological resources (i.e. poaching)
- Blast fishing, cyanide fishing
- Illegal extraction of geological resources (mining/fossils)
- Illegal trade
- Illegal occupation of space
- Illegal excavations
- Illegal construction
- Looting
- Theft
- Treasure hunting
- Ghost nets (discarded fishing gear)

9.2 - Deliberate destruction of heritage

For example:

- Vandalism
- Graffiti
- Politically motivated acts
- Arson

9.3 - Military training

9.4 - War

9.5 - Terrorism

9.6 - Civil unrest

10.Climate change and severe weather events

10.1 - Storms

For example:

- Tornadoes
- Hurricanes/cyclones
- Gales
- Hail damage
- Lightning strikes
- River/stream overflows
- Extreme tides

10.2 - Flooding

10.3 - Drought

10.4 - Desertification

10.5 - Changes to oceanic waters

For example:

- Changes to water flow and circulation patterns at local, regional or global scale
- Changes to pH
- Changes to temperature

10.6 - Temperature change

10.7 - Other climate change impacts

11.Sudden ecological or geological events

11.1 - Volcanic eruption

11.2 - Earthquake

11.3 - Tsunami/tidal wave

11.4 - Avalanche landslide

11.5 - Erosion and siltation/deposition

11.6 – Fire (wildfires)

For example:

- Altered fire regimes
- High impact fire suppression activities
- Lightning strikes
- For man-induced fires, see “Other threats”

12.Invasive/alien species or hyper-abundant species

12.1 - Translocated species

For example:

- Fish stocking
- Inappropriate plantings
- Introduced soil etc
- Dieback due to pathogens

12.2 - Invasive/alien terrestrial species

For example:

- Weed
- Feral animal
- Rodent
- Insect pest
- Bird pest
- Disease/parasite
- Micro-organism

12.3 - Invasive / alien freshwater species

For example:

- Weeds
- Invertebrate pests
- Fish pests
- Diseases/parasites
- Micro-organisms

12.4 - Invasive/alien marine species

For example:

- Weeds
- Invertebrate pests
- Fish pests
- Diseases/parasites
- Micro-organisms

12.5 - Hyper-abundant species

- Naturally occurring species impacting ecosystem by virtue of ecological imbalance

12.6 - Modified genetic material

13.Management and institutional factors

13.1 – Legal framework

13.2 - Low impact research/monitoring activities

For example:

- Visitor surveys
- Water sampling
- Non-extractive surveys
- In-situ surveys

13.3 - Governance

13.4 - High impact research/monitoring activities

For example:

- Sampling using destructive techniques
- Research involving removal of features or species (i.e. extraction)

13.5 - Management activities

13.6 - Management activities

13.7 – Financial resources

13.8 – Human resources

14.Other factor(s)

Any additional factors not covered by the list above.

14.1 - Other factor(s)

Percentage of World Heritage properties (for each of the 5 regions) negatively affected by each specific factor

It should be noted that the factors have been ranked from the most encountered (on average) to the least.

Key (% of properties affected)

0%
1-5%
6-10%
11-20%
21-30%
31-40%
41-60%
61-75%
76-100%

Specific factor negatively affecting the Outstanding Universal value of the property	AFR	ARB	APA	EUR-NA	LAC
Management systems/ management plan	81%	84%	77%	58%	75%
Housing	28%	51%	32%	38%	43%
Legal framework	22%	29%	22%	18%	41%
Illegal activities	47%	27%	26%	9%	22%
Impacts of tourism/visitor/recreation	16%	24%	32%	25%	29%
Ground transport infrastructure	16%	27%	27%	20%	28%
Financial resources	47%	14%	20%	8%	26%
Human resources	39%	24%	15%	7%	21%
Management activities	14%	29%	23%	15%	21%
Land conversion	28%	20%	10%	3%	21%
Identity, social cohesion, changes in local population and community	27%	20%	11%	2%	21%
Major visitor accommodation and associated infrastructure	11%	16%	12%	13%	21%
Water (rain/water table)	14%	16%	10%	7%	12%
Deliberate destruction of heritage	9%	20%	10%	8%	9%
Livestock farming/grazing of domesticated animals	28%	10%	1%	1%	15%
Mining	27%	2%	12%	8%	6%
Effects arising from use of transportation infrastructure	3%	14%	10%	8%	18%
Water infrastructure	14%	8%	10%	6%	12%
Interpretative and visitation facilities	9%	10%	14%	10%	6%
Solid waste	11%	16%	4%	6%	4%
Erosion and siltation/ deposition	13%	14%	3%	4%	6%
War	22%	14%	0%	1%	0%

Specific factor negatively affecting the Outstanding Universal value of the property	AFR	ARB	APA	EUR-NA	LAC
Flooding	3%	14%	5%	2%	10%
Oil and gas	14%	4%	5%	7%	4%
Commercial development	0%	8%	10%	5%	12%
Storms	6%	2%	4%	4%	16%
Civil unrest	23%	0%	5%	1%	3%
Fishing/collecting aquatic resources	11%	4%	6%	3%	4%
Earthquake	2%	4%	5%	6%	12%
Invasive/alien terrestrial species	9%	2%	9%	3%	3%
Marine transport infrastructure	3%	6%	4%	5%	9%
Governance	2%	8%	2%	1%	12%
Crop production	9%	4%	3%	1%	6%
Major linear utilities	2%	4%	5%	5%	6%
Forestry /wood production	6%	0%	3%	6%	6%
Surface water pollution	6%	2%	2%	6%	3%
Wind	3%	6%	1%	2%	6%
Relative humidity	2%	4%	5%	5%	3%
High impact research/monitoring activities	0%	4%	4%	3%	7%
Localised utilities	0%	6%	4%	6%	1%
Air pollution	2%	4%	6%	3%	1%
Fire (widlfires)	6%	0%	3%	2%	4%
Changes in traditional ways of life and knowledge system	0%	10%	2%	1%	1%
Society's valuing of heritage	2%	4%	3%	1%	4%
Water (extraction)	5%	2%	4%	3%	0%
Underground transport infrastructure	0%	4%	1%	2%	6%
Input of excess energy	2%	2%	1%	2%	6%
Subsistence hunting	9%	2%	0%	1%	0%
Avalanche/ landslide	2%	2%	2%	1%	6%
Commercial hunting	8%	0%	1%	1%	1%
Industrial areas	5%	0%	2%	1%	3%
Air transport infrastructure	2%	0%	4%	2%	3%
Ground water pollution	2%	2%	3%	2%	1%
Invasive / alien freshwater species	3%	0%	2%	1%	3%
Other climate change impacts	2%	2%	3%	1%	1%
Drought	6%	0%	1%	0%	0%
Ritual/spiritual/religious and associative uses	0%	2%	4%	1%	0%
Temperature	0%	2%	1%	2%	1%
Temperature change	0%	2%	2%	2%	0%
Renewable energy facilities	0%	2%	0%	4%	0%

Specific factor negatively affecting the Outstanding Universal value of the property	AFR	ARB	APA	EUR-NA	LAC
Invasive / alien marine species	0%	2%	1%	0%	3%
Micro-organisms	0%	2%	0%	2%	1%
Pollution of marine waters	0%	0%	1%	3%	1%
Indigenous hunting, gathering and collecting	3%	0%	0%	1%	1%
Volcanic eruption	2%	0%	2%	0%	1%
Quarrying	0%	0%	2%	2%	0%
Desertification	2%	2%	0%	0%	0%
Changes to oceanic waters	2%	0%	2%	0%	0%
Translocated species	2%	0%	0%	0%	1%
Non-renewable energy facilities	0%	0%	1%	2%	0%
Tsunami/tidal wave	0%	0%	2%	0%	0%
Military training	0%	0%	0%	0%	1%
Terrorism	0%	0%	0%	1%	0%
Hyper-abundant species	0%	0%	0%	1%	0%
Radiation/light	0%	0%	0%	1%	0%
Aquaculture	0%	0%	0%	0%	0%
Commercial wild plant collection	0%	0%	0%	0%	0%
Dust	0%	0%	0%	0%	0%
Low impact research/monitoring activities	0%	0%	0%	0%	0%
Modified genetic material	0%	0%	0%	0%	0%
Pests	0%	0%	0%	0%	0%
Subsistence wild plant collection	0%	0%	0%	0%	0%