

Revealing the Level of Tension Between Cultural Heritage and Development in World Heritage Cities

Oszacowanie zakresu konfliktów występujących pomiędzy ochroną dziedzictwa kulturowego a rozwojem w miastach z Listy Światowego Dziedzictwa

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Abstract

In theory, cultural heritage is regarded as a useful catalyst for sustainable development. However, in reality it is also regarded as an obstacle. Although cultural heritage is widely recognized as a unique and valuable resource of economic development, local governments often favor development over the protection of cultural heritage.

World Heritage cities (i.e. all urban settlements with properties inscribed on the World Heritage List, located in or at the outskirts of their urban areas) contain cultural heritage that is not only of local importance, but is also of *outstanding universal value* (OUV) – that is, of global importance. Such heritage can enrich cultural diversity of urban settlements, but can also provide a source of tension for the comprehensive management of varied urban landscapes.

Three international organizations have been found periodically and systematically inventorying endangered cultural heritage properties throughout the world: UNESCO with the *List of World Heritage in Danger*, ICOMOS with *Heritage at Risk*, and the World Monuments Fund with the *World Monuments Watch*. Properties identified by these organizations are considered to be at risk as a result of varied threats, including development. However, the processes and criteria used by these organizations to determine such dangers were found to be very distinctive and inconsistent.

The goal of this paper is to propose systematic and comprehensive criteria with which to categorize the endangered level of World Heritage cities – specifically those threatened by development – and to present the resultant ranking of these cities by such criteria. All official documents publishing the decisions adopted during the Sessions of the WH Committee, from 1977 to 2009, shall be used as a data source. This quantitative analysis will help evidence the evolution of World Heritage cities threatened by development, as well as the related trends of threats, causes and impacts.

Initial analysis of the data has shown that many more WH cities (as defined above) have been endangered than have been represented on the *List of World Heritage in Danger*. While only 21 of the 476 WH properties including or included in WH cities have been included on the List in Danger, 193 have been discussed as endangered (to varying degrees) during WH Committee Sessions. Most frequently, the threats discussed had the potential to – but did not yet – cause irreversible damage to the OUV. However, many of the threats *did* cause damage to the OUV, though not to the extent necessary to warrant inclusion on the List in Danger.

The primary threats mentioned in Committee Sessions have been new development (mostly commercial and residential) and infrastructure construction (such as roads, airports, ports and sewage systems). The primary causes of these threats have been insufficient implementation of regulatory frameworks (such as management plans, zoning laws and conservation plans), insufficient buffer zones, and insufficient coordination of stakeholders. While other threats, such as looting, flawed restoration work and general neglect have been mentioned; new

development and construction are by far the most cited threats to OUV. This initial analysis illustrates the alarming tensions between heritage preservation, modernization and growth in WH cities throughout the world. This data is only the tip of the iceberg. Based mainly on official documents from World Heritage Committee Meeting Sessions, the data reflects only those cities and threats that capture the attention of the Committee. There are likely many more WH cities endangered than the Committee has the time to consider during its annual Sessions. Furthermore, the lack of specific references to development-related threats in all cities does not mean that they do not exist. Just as the operational guidelines have evolved, it is expected that the detail of information concerning threats, causes and impacts, will also increase in time.

This research is considered to be a step forward in understanding development as a danger to World Heritage cities, including its threats, causes and impact. Moreover, as part of a broader international research entitled, *Outstanding Universal Value, World Heritage Cities and Sustainability*, the results will also help to determine best practices among the OUV assessment practices followed to protect World Heritage cities.

Key words: level of tension, cultural heritage, development

Streszczenie

W teorii dziedzictwo kulturowe jest traktowane jako użyteczny czynnik sprzyjający rozwojowi zrównoważonemu. W rzeczywistości może być także przeszkodą. Chociaż dziedzictwo kulturowe jest powszechnie uznawane za unikalny i wartościowy kapitał rozwoju ekonomicznego, lokalne władze zwykle przedkładają zwykły rozwój nad ochronę dziedzictwa kulturowego.

Miasta Światowego Dziedzictwa (a więc założenia miejsca wpisane na *Listę Światowego Dziedzictwa*) posiadają wartości kulturowe nie tylko w aspekcie lokalnym, ale także *wybitne wartości uniwersalne* (OUV – *outstanding universal value*) – uznawane w wymiarze ogólnoswiatowym. Takie dziedzictwo wzbogaca różnorodność kulturową miast, a także może dostarczyć wskazania dla wszechstronnych systemów zarządzania zróżnicowanymi krajobrazami miejskimi.

Trzy międzynarodowe organizacje katalogują zagrożone dziedzictwo kulturowe w skali światowej, to: UNESCO z *Listą Zagrożonego Światowego Dziedzictwa*, ICOMOS z *Zagrożonym dziedzictwem* i World Monuments Fund z *World Monuments Watch*. Wskazywane przez te organizacje cechy są traktowane jako zagrożone w wyniku zaistnienia różnorodnych czynników, takich jak rozwój. Niestety, kryteria stosowane przez te organizacje w celu określenia tych zagrożeń są odmienne i niespójne.

W tym artykule proponujemy usystematyzowane i wyczerpujące kryteria wskazujące, jak należy kategoryzować poziom zagrożenia w miastach z Listy Światowego Dziedzictwa – w szczególności te zagrożone tradycyjnym rozwojem – i przedstawiamy powstały w oparciu te kryteria ranking miast. Jako dane źródłowe przyjmujemy wszystkie oficjalne dokumenty przyjęte podczas obrad Komitetu WH w okresie 1977-2009. Ta analiza ilościowa pomoże uowodnić charakter przemian zachodzących w Miastach Światowego Dziedzictwa zagrożonych rozwojem, jak też kierunków tych zagrożeń, przyczyn i skutków.

Analiza wstępna dostępnych danych wykazała, że znacznie więcej miast z Listy Światowego Dziedzictwa jest zagrożonych, niż to wynika z *Listą Zagrożonego Światowego Dziedzictwa*. Podczas gdy tylko 21 z 476 cech odnoszących się do Listy Światowego Dziedzictwa znalazło się na Liście Zagrożeń, to podczas obrad komitetu WH rozważano aż 193 cechy. W większości wypadków było to potencjalne zagrożenie, które – jak dotąd – nie pociągnęło za sobą nieodwracalnych zniszczeń dla walorów miast z Listy Światowego Dziedzictwa. Jednak wiele z zagrożeń doprowadziło do negatywnych konsekwencji, choć nie w wymiarze gwarantującym uwzględnienie na Liście Zagrożeń.

Podstawowe zagrożenia dostrzeżone przez komitet WH to nowy rozwój (komercyjny i mieszkaniowy) i rozbudowa infrastruktury (drogi, lotniska, porty, kanalizacja). Ich przyczyną jest nieefektywne ramy zarządzania (plany zarządzania, prawa określające poszczególne strefy, plany ochrony), niewystarczający strefy buforowe i zbyt słaba koordynacja interesariuszy. Podczas gdy wskazywano także na inne zagrożenia, takie jak grabież, wadliwie przeprowadzone prace konserwatorskie i ogólne zaniedbania, najczęściej wskazywano jednak na rozwój, rozbudowę i modernizację.

Te dane to tylko szczyt góry lodowej. Oparte głównie na oficjalnych dokumentach odzwierciedlają jedynie te miasta i zagrożenia, na które uwagę zwrócił Komitet WH. Z dużym prawdopodobieństwem można założyć, że w rzeczywistości zagrożonych miast jest więcej. Ponadto, brak szczegółowych danych do zagrożeń związanych z rozwojem we wszystkich miastach wcale nie oznacza, że takie zagrożenia nie istnieją. Tak jak ewoluowały wytyczne operacyjne, oczekuje się, że szczegółowych informacji odnoszących się do zagrożeń, przyczyn i konsekwencji także będzie z czasem przybywało.

Prezentowane w tym artykule badania stanowią krok naprzód w rozumieniu rozwoju jako zagrożenia (w tym jego typu, przyczyn i konsekwencji) dla miast z Listy Światowego Dziedzictwa. Co więcej, jest to część szerszego międzynarodowego programu badawczego *Outstanding Universal Value, World Heritage Cities and Sustainability/Wybitne wartości uniwersalne (OUV), miasta Światowego Dziedzictwa i zrównoważoność*, którego

rezultaty pozwolą określić najlepsze praktyki, które pomogą następnie lepiej chronić miasta z Listy Światowego Dziedzictwa.

Słowa kluczowe: zakres konfliktów, dziedzictwo kulturowe, rozwój

1. Introduction

Although the reporting process on the State of Conservation (SoC) of World Heritage properties has made some progress in recent decades, still no systematic and standardized assessment is being followed worldwide. In 1999, the World Heritage (WH) Committee did adopt the six-yearly *periodic reporting* process, which focuses on one of 6 geographic regions annually (UNESCO, 1999). However, that process is *still being improved and information so gathered is highly variable in consistency and detail, and thus not readily interpreted for the purposes of comparative temporal or special analyses* (Patry, 2005).

A similar pattern is to be found in the reports created during occasional site level *reactive monitoring* missions, carried out by WH Centre and the Advisory Bodies staff, at the request of the WH Committee. These neither comply with a standard format nor are related in structure to the “periodic reporting” process. These missions merely gather disparate information, which is no more than an *assembly of basic quantitative attributes of these sites as a group and qualitative summaries of conservation issues on a site by site basis* (Thorsell and Sigaty, 1997).

Some global initiatives, such as the *Rapid Assessment and Prioritization of Protected Areas Management* (RAPPAM) methodology developed by WWF, the World Bank / WWF tracking tool (Ervin, 2003), have proposed the standardization of a set of criteria across World Heritage properties listed as natural heritage, allowing quantitative and comparative analyses. One other example of a similar Management Effectiveness Assessment methodology is the *Enhancing our Heritage* methodology developed by the WH Centre (UNESCO, 2008a).

While useful, these methodologies “*have been applied haphazardly to only a very few WH sites to date* (Patry, 2005), resulting in very limited analytical uses across WH cities (i.e. all urban settlements with properties inscribed on the World Heritage List, located in or at the outskirts of their urban areas (Pereira Roders, 2010).

Despite these limitations, the WH Centre has easy access to existing information that can in fact permit the monitoring of objective indicators (quantitative and qualitative) of the State of Conservation (SoC) of WH Cities. These are respectively:

INDICATOR 1. Absolute number of WH properties including or included in WH cities on the List WH in Danger.

INDICATOR 2. Proportion of all WH properties including or included in WH cities on the List of WH in Danger (number of WH cities on Danger List / Total number of WH cities).

INDICATOR 3. Threat intensity to which WH properties including or included in WH cities are subjected.

INDICATOR 4. Average threat intensity for entire WH properties including or included in WH cities network.

The value of these indicators can be tracked over time, providing important information on trends, and allowing for a variety of practical analyses. All raw data used to generate the graphs illustrating this paper can be found available on the World Heritage Cities Programme website at: <http://whc.unesco.org/en/cities>. Particularly, the methodology to determine indicators 3 and 4 can be found detailed at *The State of Conservation of the World Heritage Forest Network* (Patry, 2005). Basically, they are based on the frequency with which the WH Committee has discussed a WH property over the past 15 years (0 = minimum reports, 100 = maximum reports).

2. Results

For cultural heritage assets, and for a scale of property such as a WH city, it is a challenge to identify indicators that can provide tangible and comparable measures of the SoC of WH properties. However, much information is periodically gathered by the WH centre *through its reactive monitoring process and by way of third party information*. The data so obtained is *rarely of a nature that allows for objective quantifiable analysis* (Patry, 2005). The following data, proposed as indicators, is quantitative and available to every WH property.

The first two indicators (indicators 1 and 2) are based on WH cities’ potential inscription on the List of WH in Danger. The second two indicators (indicators 3 and 4) are based on whether monitored conditions at individual WH cities reveal significant enough threats to be discussed by the WH Committee at their annual Sessions.

INDICATOR 1. Absolute number of WH properties including or included in WH cities on the List WH in Danger.

INDICATOR 2. Proportion of all WH properties including or included in WH cities on the List of WH in Danger (number of WH cities on Danger List / Total number of WH cities).

When a property's OUV is threatened by *serious and specific dangers* the WH Committee has the option of inscribing the property on the List of WH in Danger (UNESCO, 2008b). This *Danger Listing* serves not only to heighten concern about the property's integrity and stir up international support, but the list itself also serves as a record of the threatened state of the property.

By 2010, 21 WH properties found including or included in WH Cities (indicator 1) had made an appearance on the Danger List (see Table 1). An exceptional case is the WH property Dresden Elbe Valley (Germany), inscribed on the Danger List in 2006 and delisted from the WH List in 2009. As it was no longer a WH property at the time this research was conducted, Dresden Elbe Valley was excluded from this survey.

Since 1979, when the first WH properties that include or are included in WH Cities were inscribed in the *List of WH in Danger*, the proportion (indicator 2) of these WH properties on the Danger List has ranged from as high as 100% (1979-1983) to as low as 26% (1993). Ten of these WH properties still remain inscribed today on the Danger List. An additional ten properties have been delisted and still remain on the WH List. No WH property returned after delisting.

Both indicator 1 (number) and 2 (%) can be used as a measure of the degree to which these particular WH properties were under threat worldwide (Figure 1). Although indicator 1 reveals a small sample of properties when compared with the whole population (4.4% of all 459 WH properties including or included in WH Cities), it reflects the whole *List of WH in Danger*, which includes no more than 31 WH properties (3.5% of all 890 WH properties inscribed on the WH List).

Similarly, indicator 2 (with an average of 53% along the last 32 years) lightly surpasses the proportion of WH properties including or included in WH Cities on the WH List (51.6% of all 890 WH properties). In fact, until 1997 all cultural heritage inscribed in the Danger List were WH properties including or included in WH Cities.

The list of all WH properties including or included in WH Cities having been inscribed on the *List of WH in Danger* is provided in Table 2. Similar to the WH Forests (Patry, 2005), a future indicator of the state of these WH properties overall might focus on the urban area of WH properties in danger as a proportion of total WH properties cover. This indicator could increase the accuracy of the assump-

tions reached when surveying indicators 1 and 2. However, urban area cover values of the protection zones (core and buffer zones) of WH properties including or included in WH Cities are unreliable, making it premature to consider this indicator.

Nevertheless, it is telling to review which WH Cities have appeared on the Danger List, as well as the threats for which they were included. After reviewing the threats all WH properties including or included in WH cities face it will be interesting to compare which threats have resulted in Danger Listing and which have not. A review of the nature of threats that affect those on the Danger List shows the principle threats have been *new development* and *flawed restoration work*. These threats affect more than half of the WH properties including or included in WH cities on the Danger List (see Table 1).

The average time spent on the Danger List for WH Cities is 10.7 years. Seven cities have remained on the *Danger List* for more than the average tenure. For those properties, *new development* has been the most prevalent threat. However, for the thirteen cities with less than average tenure on the List, the prevalent threat has been *lack of, flawed or damaging maintenance, reconstruction and restoration work*. One might therefore conclude that new development poses a more serious and longer-term danger to these properties, therefore resulting in longer tenures on the Danger List.

Table 1. Threats affecting WH properties including or included in WH Cities on the Danger List

THREAT	# Cities Facing Threat	% of all Threats
new development	11	16.42%
lack of, flawed or damaging maintenance, reconstruction and restoration work	11	16.42%
natural disaster	8	11.94%
general degradation	7	10.45%
infrastructure construction and development	7	10.45%
tourism pressures and associated development	5	7.46%
informal/illegal settlements or construction	5	7.46%
illegal or inappropriate dismantling and demolition	3	4.48%
archaeological excavations	2	2.99%
natural causes	2	2.99%
motor traffic	2	2.99%
land privatization and ownership issues	2	2.99%
lack of or insufficient infrastructure	1	1.49%
neglect	1	1.49%

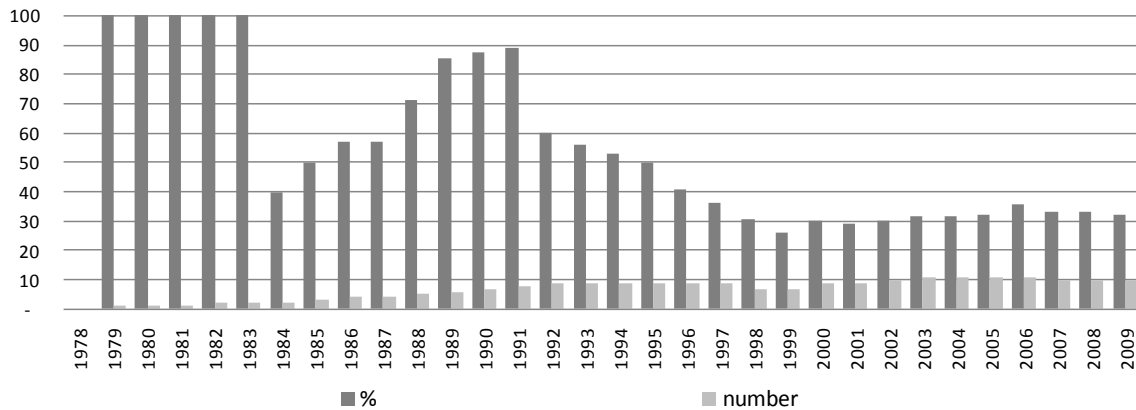
As seen in Figure 1, the number of WH properties including or included in WH cities on the Danger

Table 2. WH properties including or included in WH cities previously and currently on the Danger list

WH Property	Threats*	On (Year)	Off (Year)	# Years
Old City of Jerusalem and its Walls	archaeological excavation; new development; tourism pressures and associated development; lack of, flawed or damaging maintenance, reconstruction and restoration work; neglect	1982	still on	28
Natural and Culturo-Historical Region of Kotor	new development; tourism pressures and associated development; natural disaster; infrastructure construction and development	1979	2003	24
Chan Chan Archaeological Zone	archaeological excavations; new development; tourism pressures and associated development; informal/illegal settlements or construction; natural disaster; general degradation; lack of or insufficient infrastructure; natural causes; lack of, flawed or damaging maintenance, reconstruction and restoration work; looting/theft	1986	still on	24
Royal Palaces of Abomey	natural disaster; general degradation; lack of, flawed or damaging maintenance, reconstruction and restoration work	1985	2007	22
Bahla Fort	new development; lack of, flawed or damaging maintenance, reconstruction and restoration work	1988	2004	16
Timbuktu	new development; natural disaster; general degradation; natural causes	1990	2005	15
Angkor	new development; tourism pressures and associated development; informal/illegal settlements or construction; infrastructure construction and development; political unrest/violence; looting/theft	1992	2004	12
Fort and Shalamar Gardens in Lahore	new development; general degradation; infrastructure construction and development; motor traffic; illegal or inappropriate dismantling and demolition; land privatization and ownership issues	2000	still on	10
Historic Town of Zabid	new development; informal/illegal settlements or construction; general degradation; infrastructure construction and development; lack of, flawed or damaging maintenance, reconstruction and restoration work	2000	still on	10
Wieliczka Salt Mine	unidentified threats	1989	1998	9
Old City of Dubrovnik	natural disaster; lack of, flawed or damaging maintenance, reconstruction and restoration work; political unrest/violence	1991	1998	7
Walled City of Baku with the Shirvanshah's Palace and Maiden Tower	new development; tourism pressures and associated development; natural disaster; illegal or inappropriate dismantling and demolition	2003	2010	7
Bam and its Cultural Landscape	security	2004	still on	6
Coro and its Port	natural disaster; general degradation; lack of, flawed or damaging maintenance, reconstruction and restoration work	2005	still on	5
Tipasa	new development; informal/illegal settlements or construction; natural disaster; infrastructure construction and development; lack of, flawed or damaging maintenance, reconstruction and restoration work	2002	2006	4
Kathmandu Valley	new development; informal/illegal settlements or construction; general degradation; infrastructure construction and development; illegal or inappropriate dismantling and demolition; lack of, flawed or damaging maintenance, reconstruction and restoration work; political unrest/violence	2003	2007	4
Medieval Monuments in Kosovo	political unrest/violence	2006	still on	4
Samarra Archaeological City	motor traffic; security; political unrest/violence	2007	still on	3
Cologne Cathedral		2004	2006	2
Historical Monuments of Mtskheta	land privatization and ownership issues; lack of, flawed or damaging maintenance, reconstruction and restoration work	2009	still on	1

*Taken from Official Reports of the Sessions of the WH Committee from 1977-2009

Figure 1. Number and Proportion of WH properties including or included in WH cities on the Danger List



list does not grow in proportion to the number of WH cities being added to the WH List. Again, if the Danger List were used more comprehensively it might better reflect the growing proportion of WH Cities that are endangered.

INDICATOR 3. Threat intensity to which WH properties including or included in WH Cities are subjected.

INDICATOR 4. Average threat intensity for entire WH properties including or included in WH Cities network.

Throughout the year the WH Centre and Advisory Bodies (ICOMOS and IUCN) receive information (unsolicited and solicited) related to emerging and on-going conservation issues in WH properties from a variety of sources.

Once a year, to prepare the World Heritage Committee meeting, the WH Centre and Advisory Bodies meet to review and discuss information gathered during the previous months and jointly decide whether conditions warrant that a particular WH property and its conservation issues be discussed by the WH Committee.

When affirmative, the WH Centre and Advisory Bodies prepare a *State of Conservation Report* or SoC Report, which includes a brief analysis of the conservation threats for the selected properties, along with a draft decision for the WH Committee's consideration. Typically, a SoC report will be requested when the values for which a property was inscribed on the WH List appear to be significantly threatened by either existing processes (e.g. change of uses), or by potential processes with a high likelihood of taking place (e.g. plans for development). During its annual meeting in June/July, the WH Committee, which insures the WH Convention is being properly implemented by the States Parties, discuss the SoC reports and takes decisions on specific courses of action. Generally, they request that a State Party implement particular measures to mitigate threats. Usually, the WH Committee requests that a SoC report be produced for the follow-

ing year's WH Committee meeting to determine if the threats have been properly mitigated. If confirmed by a subsequent SoC report, the WH Committee usually ceases to request any further SoC reports for that particular property. Otherwise, a SoC report will be requested again for the following year's meeting.

This fairly rigorous process provides the necessary data to develop an indicator of the overall level of threat intensity to which particular WH properties are being subjected (Patry, 2005). Accordingly, the reliability of this indicator is based on the assumption of the degree involved parties *are aware of all of the major conservation threats at all WH sites at all times and a standard minimum threshold of concern is passed before the decision to produce a SoC report is made.*

Figure 2 illustrates the Threat Intensity Coefficients (TIC) when applied for 2 WH properties including or included in WH Cities over the last 15 years. While the Old City of Dubrovnik, Croatia (which in the past has been inscribed on the List of WH in Danger) is decreasing its TIC year after year; Chan Chan Archaeological Zone, Peru keeps on rising, despite the many years in the Danger List.

Figure 2. Sample Threat Intensity Coefficients for 2 WH properties including or included in WH Cities, over time

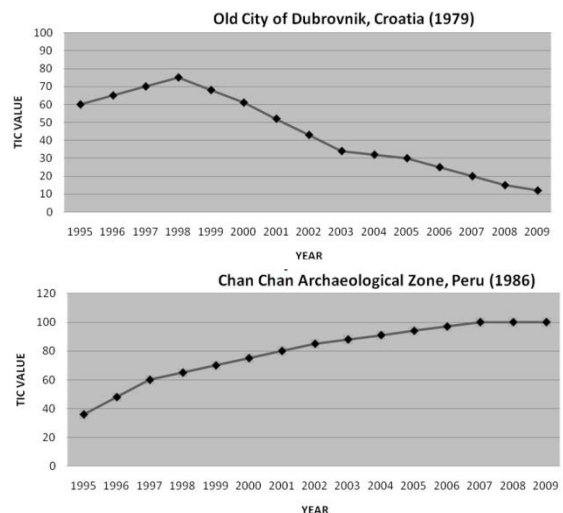
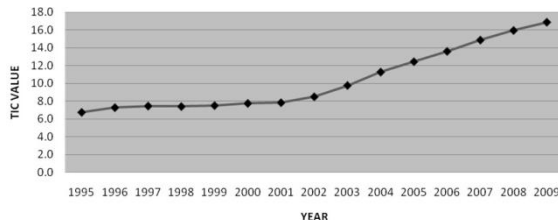


Figure 3 illustrates the average annual values of the TIC from 1995 to 2009. The average TIC values during the last 15-year intervals are 6.7 (1995) and 16.9 (2009). These values are affected by a combination of the actual TIC values of WH properties including or included in WH Cities and the total number of WH properties.

Figure 3: Average TIC Value for entire WH properties including or included in WH Cities network



As SoC reports for newly inscribed WH sites are rarely requested, the year of nomination has not been included in the sum. This methodological decision creates a downward pressure on the average TIC value. Another factor that also likely influences the average TIC value of the earlier years is the difference in the Operational Guidelines and the requested information and focus during the Sessions of the WH Committee.

The Official Reports of the Sessions of the WH Committee mention threats facing 193 of the 476 WH properties including or included in WH Cities. Each discussed property faced anywhere from one to eleven unique threats. Therefore, all together, hundreds of unique threats emerge from the reports. For the purposes of this research we have grouped the referenced threats into twenty-three distinct categories. Among these, a handful emerged as most common.

The most-referenced threat represents a notable limitation of the data source: *unidentified threats*. The reports do not detail the specificities of all threats, particularly in earlier years when reports were less comprehensive. Thirty-two percent of WH properties including or included in WH Cities face unidentified threats, which represent twenty-seven percent of all threats. The remaining threats referenced in the reports are indeed more specific and demonstrate the prevalence of one specific class of threat: *the development threat*.

New development and *infrastructure construction* are referenced as threats to twenty-six and twelve percent of WH properties including or included in WH Cities respectively. Threats that are mentioned in reference to five to ten percent of WH properties including or included in WH Cities are *insufficient maintenance and restoration*, *tourism pressures* and *natural disasters* (n.b. *tourism pressures* include new development, but also non-development threats such as motor traffic and foot traffic).

In addition to *new development*, other categories of threats represent development (defined for the pur-

poses of this research as all activities of urban planning/renewal promoting changes on the built environment). Therefore, categories representing development threats are: *new development*; *infrastructure construction and development*; *tourism pressures and associated development*; *informal/illegal settlements or construction*; *temporary events (and associated structures)*; *oil and gas exploration and mining*; *land privatization and ownership issues*; *industrial construction and development*; and *military facilities development*. All together, these development threats represent forty-five percent of the threats facing WH properties including or included in WH Cities and are referenced as threats to fifty-four percent of WH properties including or included in WH Cities. In comparison, *inappropriate excavation and restoration* is mentioned as a threat to only thirteen percent of WH properties including or included in WH Cities; *natural threats* are referenced for only nine percent; *security-related threats* referenced for only seven percent and *general neglect and degradation* referenced for only four percent. This data clearly shows development-related threats as the greatest perceived threats to WH properties including or included in WH Cities. For the purposes of this research we have also grouped the referenced causes of threats into nineteen distinct categories. As mentioned previously, not all referenced threats were discussed in detail in the reports; consequently the causes of such threats were not always given. However, those causes that were given show a majority of development-related causes (defined for the purposes of this research as the causes that led development to become a threat to these WH properties). Among all causes referenced, the most common categories are *insufficient regulatory frameworks*, *insufficient buffer zones* and *insufficient enforcement of regulatory frameworks*, representing twenty-three percent, seventeen percent and fifteen percent of causes respectively. These three cause categories are all mentioned in reference to development threats (as defined for Indicator 5). Other categories mentioned in relation to development threats are: *insufficient coordination of stakeholders*, *insufficient tourism plan*, *insufficient impact analyses*, *insufficient understanding of heritage's value*, *insufficient involvement of local population*, *insufficient design guidelines*, *insufficient political agreement* and *population growth and economic pressures* (see Figure 5). All together, these development-related causes represent eighty-three percent of all causes and were mentioned in reference to ninety-eight percent of all WH properties including or included in WH Cities. This data shows development-related causes as the principle cause of threats to WH properties including or included in WH Cities is development.

Table 3. Development-related threats referenced for WH properties including or included in WH cities

Threat Category	# Properties Facing Threat	% of all Threats	% of all Properties Facing Threat*
unidentified threat(s)	152	26.67%	31.93%
new development	124	21.75%	26.05%
infrastructure construction and development (roads, airports, ports, sewers, etc.)	57	10.00%	11.97%
lack of, flawed or damaging maintenance, reconstruction and restoration work	46	8.07%	9.66%
tourism pressures and associated development	44	7.72%	9.24%
natural disaster	32	5.61%	6.72%
general degradation	16	2.81%	3.36%
illegal or inappropriate dismantling and demolition	14	2.46%	2.94%
informal/illegal settlements or construction	13	2.28%	2.73%
natural causes	12	2.11%	2.52%
lack of or insufficient infrastructure	10	1.75%	2.10%
motor traffic	8	1.40%	1.68%
political unrest/violence	8	1.40%	1.68%
temporary events (and associated structures)	7	1.23%	1.47%
neglect	5	0.88%	1.05%
oil and gas exploration and mining	4	0.70%	0.84%
land privatization and ownership issues	4	0.70%	0.84%
looting/theft	4	0.70%	0.84%
industrial construction and development	3	0.53%	0.63%
archeological excavations	2	0.35%	0.42%
security	2	0.35%	0.42%
military facilities development	2	0.35%	0.42%
noise and visual pollution	1	0.18%	0.21%
TOTAL DEVELOPMENT THREATS	258	45.26%	

*Properties often face more than one threat, therefore, this column adds up to more than 100%.

Table 4. The causes for development-related threats affecting all WH properties including or included in WH cities

Cause Category	# Properties Facing Cause	% of all Causes	% of all Properties Facing Cause
lack of or insufficient regulatory framework (including management plan, conservation plan, zoning laws, urban plan, etc.)	127	22.48%	26.68%
lack of or insufficient buffer zone	98	17.35%	20.59%
insufficient implementation or enforcement of regulatory framework (including management plan, conservation plan, zoning laws, urban plan, etc.)	85	15.04%	17.86%
insufficient coordination of stakeholders or integration of respective initiatives	43	7.61%	9.03%
lack of or insufficient tourism plan	33	5.84%	6.93%
lack of or insufficient impact analyses	31	5.49%	6.51%
lack of corrective measures and their timely implementation	23	4.07%	4.83%
lack of or insufficient human, financial and technical resources	20	3.54%	4.20%
lack of or insufficient emergency, risk and disaster preparedness plan	19	3.36%	3.99%
lack of or insufficient monitoring and indicators	18	3.19%	3.78%
insufficient understanding of heritage's value and conditions of integrity	16	2.83%	3.36%
insufficient involvement of local population	14	2.48%	2.94%
lack of or insufficient funding	13	2.30%	2.73%
lack of design guidelines	9	1.59%	1.89%
lack of political agreement or support	6	1.06%	1.26%
population growth	4	0.71%	0.84%
insufficient socio-economic conditions	3	0.53%	0.63%
economic pressures	2	0.35%	0.42%
lack of or insufficient infrastructure	1	0.18%	0.21%
TOTAL DEVELOPMENT-RELATED CAUSES	468	82.83%	98.32%

3. Conclusion

Given the absence of any framework under which a homogeneous set of indicators on the state of conservation (SoC) of WH properties including or included in WH cities worldwide can be constructed for the time being, it will remain extremely difficult to develop a highly reliable measure of how well these WH properties are being conserved over time.

Under these difficult conditions, the WH Centre must rely on indirect measures of the SoC, using the Periodic/Reactive Monitoring, the Danger Listing or the Threat Intensity Coefficient. However, based on the information so gathered, positive and negative aspects can be ascertained on the state of conservation of WH properties including or included in WH cities.

The average TIC values for all WH properties including or included in WH cities network over the past 5 years is relatively low (ranging between 12.4 and 16.9), as the proportion of these WH properties including or included in WH cities on the Danger List (ranging between 35.5 and 32.3). However, both indicators show steady growth along the years. Considering that the WH Committee only meets once a year and for a limited amount of time, the number of cases discussed cannot grow that much. Still, there is a high probability that more WH properties including or included in WH cities shall join the Danger List and/or become discussed by the WH Committee in the following years.

When comparing the results of the four indicators it was possible to conclude that the level of tension between cultural heritage and development in World Heritage cities has been rising over the last years and is varied in nature. It was also evident that the List of WH in Danger cannot alone act as an indicator as it does not accurately include all cases of WH properties including or included in WH cities facing development-related threats, nor their level of threat.

The root of this problem may be grounded in the politicization of the Danger List. If its use – extension of damage for a property to be listed, duration of a property to stay listed, degrees of danger and respective mitigation strategies, etc – were to become more comprehensive and/or complemented with other indicators (e.g. decisions from the Annual Sessions of the WH Committee) it could become an even more useful indicator.

The changing composition of the Danger List over time is a dynamic record of the SoC of the most threatened WH properties in the world. The composition of the Danger List, both the categories of properties included and categories of threat they are included for, indicated which categories were most threatened and which threats were most prevalent worldwide. Therefore, the Danger List provides

rather objective indicators for the monitoring of the category that concerns us in this research, WH Cities.

Moreover, the Threat Intensity Coefficient (TIC) was a first attempt at providing a quantitative value on the State of Conservation (SoC) of WH forests that is applicable to all WH properties, natural or cultural. Though, the actual utility of this indicator remains to be seen over time. Further research on rationalizing on the nature of the identified threats and causes could help raise the understanding of the SoC of these and other WH properties.

This initial use of the four indicators has revealed the high degree of tension between heritage preservation and development in WH Cities. WH Cities are dynamic organisms within which pressures for modernization are not likely to subside. Therefore, it is essential to collect more detailed information about the particular characteristics of new development that threaten a property's OUV. In this regard, our analysis only scratches the surface, as it is limited by the depth of available data. Therefore, we hope this can serve as an impetus for more systematic and comprehensive monitoring of the evolving threats to WH cities.

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