Relating the state of authenticity and integrity and the factors affecting World Heritage properties: Island of Mozambique as case study

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Management deficiencies and aggressive development are the two major threats to cultural World Heritage properties. The Island of Mozambique is among the properties affected by these threats, as well as, by general degradation. International guidelines and theories have already been defined on what should be done to mitigate or even prevent threats from affecting cultural heritage properties. Though, there is still a lack of methods and tools, verified on their effectiveness, to assist governments determining heritage impact assessments and raise informed decision-making.

This article presents and discusses the results of applying an evidence-based research method to reveal the impact of factors affecting the attributes conveying the outstanding universal value, by relating their patterns of change in time. It is a contribution to the growth of knowledge in the field of cultural heritage management, and to the exploration of evidence-based methods in relational research. National and local governments involved in the cultural heritage management in general and in cultural heritage management of the Island of Mozambique in particular can use the discussed results to evaluate their current management practices and work towards improvement of their effectiveness.

Introduction

The protection of cultural heritage has for long been primarily about the physical conservation of monuments, even when managing larger urban areas (Whitehand and Gu, 2010). This object-based approach was more focused on the conservation of the tangible dimension of cultural heritage assets, which helped maintaining many historic buildings and sites, but often neglected the more intangible, larger scale, process or production-oriented attributes conveying cultural significance. Such approach has also contributed to an escalation of conflicts between heritage and development needs, ranked as being the issue of greatest concern among practitioners, both from the field of conservation and urban management (Getty, 2010). Over the last decades, management deficiencies and aggressive development have become the two major threats to cultural World Heritage properties (ICOMOS, 2005).

Conservation is now moving towards a landscape-based approach, which addresses the intangible, setting and context, and urban and sustainable development, accompanied by a greater consideration for the social and economic function of (historic) cities (Bandarin and Van Oers, 2012). The recommendation by UNESCO on Historic Urban Landscapes, short titled as HUL (UNESCO, 2011) is the new standard-setting instrument, aiming to provide guidance on implementing this landscape-based approach. However, it is now up to the national and local governments to adapt, disseminate and facilitate the implementation of the HUL approach, as well as, to monitor its impact on the conservation and management of historic cities under their safeguard (UNESCO, 2011).

Two tools available to trace progress in reaching global targets towards protected areas are impact and effectiveness assessments. Impact assessments relate change agents and protected areas and effectiveness assessments relate the impact assessment to the management practices applied in protected areas. The latter is seldom being used for cultural protected areas, but much could be learned from the experiences in natural protected areas (Leverington, 2010).

Instead, heritage impact assessments are more commonly used in protected urban areas. They are a codification of a basic analysis undertaken by conservation advisers. Though, there is a lack of objectivity and completeness in impact assessments, even if they are part of an Environmental Impact Assessments - EIA (Teller & Bond, 2002). Moreover, EIA is considered to neglect the interaction between attributes and "cumulative impacts and incremental changes" (ICOMOS (2011). Thus, there is a unanimous plea for a more global and objective assessment approach for cultural protected areas, directly linked to their cultural significance.

ICOMOS Australia (1999) set forward a more holistic approach with a central position for cultural significance, the "why" society has chosen to protect certain areas. Over the last years, classifications of values defining cultural significance have been growing in number, detail and interdisciplinarity (Labadi, 2007). Though, the step to introduce them in monitoring systems is being halted by more traditional approaches that regarded cultural significance as fixed and inherent to the properties themselves rather than constructed by those who used or contemplated them. Research confirmed that cultural significance varies, not as much in attributes or cultural values, but on the importance given to certain attributes and values by the assessors (Pereira Roders, 2007). Thus, there is a great need for assessment frameworks with sustained processes, categories and criteria, to enable a better understanding on the status and trends of these protected urban areas.

The aim of this article is to discuss the application of an evidence-based method, targeting to reveal the impact of factors affecting the attributes conveying the outstanding universal value, by relating their evolution in time.

Background

Island of Mozambique is located at the entrance of Mossuril Bay, in northern Mozambique. It is divided in two urban areas of distinct morphology: "Stone Town" in the northern part and "Macuti Town" in the southern part of the island (see Figure 1). A planning bye-law determined that a line would be drawn over the middle of the island, peripheral to the hospital: "in 1868 it was decreed that huts could only be built outside the line which bounded the Arrabalde. (…) The line ran from the fish market to Bairro alto de Marangonha, and forms the present distinction between the Macuti town and the stone built town" (Aarhus, 1985).

"Macuti Town"   "Stone Town"

Figure 1.   Map of Island of Mozambique, Mozambique (Pereira Roders et al., 2012).

Curiously, these urban areas gained their name from their generally used building materials: "Stone Town" and "Macuti Town". Both materials are to be found in both urban areas, but not in a balanced proportion. "Stone Town" is characterized by the use of coral lime stone, flat terrace roofs, uniform decorative principles and a closed urban block structure. Instead, "Macuti Town" is characterized by the use of bamboo supported walls, pitched roofs covered by macuti and the isolated huts.

Being listed as World Heritage means that a property is considered to be of outstanding universal value (OUV). Its cultural and/or natural significance is "so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity" (UNESCO, 2008). Island of Mozambique (Mozambique) is inscribed on the UNESCO World Heritage List since 1991, under criteria (iv) and (vi). This means that the World Heritage Committee has agreed with its OUV for being:

(iv) "an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history" and

(vi) "directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance".

By 1991, the official decision texts that underpin nominations did not always include a justification of significance, currently known as the Statement of Outstanding Universal Value. However, the ICOMOS Advisory Body Evaluation (ABE) report does indicate justifications for its inscription on the World Heritage List (1991) by mentioning the criteria:

"Criterion (iv) The town and fortification on the Island of Mozambique, and the smaller Island of St Laurent, are an outstanding example of an architecture in which local traditions, Portuguese influences and, to a somewhat lesser extent, Indian and Arab influences are all interwoven.

Criterion (vi) The Island of Mozambique bears important witness to the establishment and development of the Portuguese maritime routes between Western Europe and the Indian sub-continent and thence all of Asia."

Problem field

Historic urban landscapes evolve in time (UNESCO, 2011), and so did the Island of Mozambique ever since its nomination. This evolution, caused by either natural or human influence, should be kept under control, in order to prevent that such evolution causes irreversible damages to the attributes conveying cultural significance. This control is carried out on all cultural heritage properties worldwide, done by the World Heritage Committee on a global level, but more specifically, by the national and local governments. After all, "the permanent protection of this heritage is of the highest importance to the international community as a whole" (UNESCO, 2008). However, such protection efforts are often perceived as an obstruction of the (socio-economic) development of urban settlements, and at the same time development pressures and management deficits are commonly found factors affecting cultural heritage (ICOMOS, 2005; Pereira Roders, 2010).

The reporting trend, former threat intensity coefficient (Patry, 2005), denounces that the frequency in which the World Heritage Committee has deliberated during the sessions on the Island of Mozambique was declining till 2005. From 2005 until 2010 it grew steadily, with a decline in 2011 (See Figure 2).

Those deliberations addressed threats such as natural disasters e.g. cyclone Nadia (1994), general degradation and a lack of/or insufficient infrastructure e.g. lack of sewage and water systems, particularly in "Macuti Town". An example is the 2009 deliberation on the fact that "the Island of Mozambique

continues to be threatened by serious degradation of its historical monuments and urban structure and is in danger of losing part of its authenticity" (UNESCO, 2009).
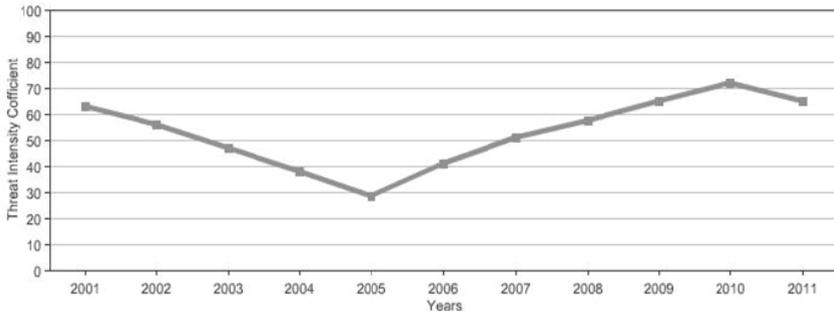

Figure 2.   Reporting trend for the Island of Mozambique, Mozambique (UNESCO, 2012)

Not only these threats, but also the causes affecting the island, are discussed by the World Heritage Committee. Along the years, the causes related to the development of the Island of Mozambique are varied. Follows a categorical list of the causes found referenced in relation to the Island of Mozambique (Turner et al, 2011):

— Lack of/or insufficient regulatory framework (including management plan, conservation plan, zoning laws, urban plan, etc.);
— Lack of corrective measures and their timely implementation;
— Insufficient implementation or enforcement of regulatory framework (including management plan, conservation plan, zoning laws, urban plan, etc.);
— Insufficient coordination of stakeholders or integration of respective initiatives;
— Lack of/or insufficient human, financial and technical resources, and insufficient understanding of heritage value and conditions of integrity.

All these causes have affected, and do affect the World Heritage Property. The goal is to solve these causes and create a situation in which the Island can develop sustainably. In order to achieve this sustainable development, change is needed in relation to executive and regulative processes on the island.

Methodology

The research aims to contribute to the monitoring and decision making processes related to urban development on Island of Mozambique. The main goal was to research the ownership issues on the island and their expected impact on the OUV, as requested by the local stakeholders. Priority was given to "Stone Town", as this urban area was the most affected by the changes on the governance strategies concerning property rights. Therefore, fieldwork was undertaken only in the "Stone Town" area of the island.

The main research question was: "What is the relation between the state of authenticity and integrity and the factors affecting the property?" The methods used to evidence the relations between the state of authenticity and integrity and the factors affecting the property, will be explained and illustrated by elaborating them on a smaller selection of attributes and factors.

As such, the main research question was divided in two sub questions: "What is the state of authenticity/integrity of the property?" and "What are the factors affecting the property?" Authenticity is defined as "the degree to which information sources about this value may be understood as credible or truthful" (UNESCO, 2008). Instead integrity "is a measure of the wholeness and intactness of the natural and/or cultural heritage and its attributes" (UNESCO, 2008).

In order to accomplish the research goal, the list of attributes identified conveying the OUV of the Island of Mozambique and their main values was identified; together with the threats/causes affecting the island. Following, the results will be presented on locating and assessing the state of authenticity/integrity of three attributes considered to contribute to "the incredible architectural unity of the island". They will be related to some of the factors found affecting the island.

The attributes are respectively, "the same building techniques", "the same materials" and "the same decorative principles" ceaselessly used over the last centuries. The threats "general degradation" and "new development" will be further elaborated as well as the cause "lack of or insufficient regulatory framework". As the fieldwork took place exclusively in "Stone Town", further research is needed to present

overall conclusions on the entire island. Though, as distinct urban areas, this sub-division is not expected to alter the results, nor their reliability.

This research had two clear stages: the desk research and fieldwork. For the desk research, content analysis methods were used to identify the attributes, values, threats and causes affecting the property. Particular to the attributes and values, a coding method was used to classify all identified attributes according to eight categories of cultural values. These are respectively the social, economic, political, historic, aesthetical, scientific, age and ecological values (Pereira Roders, 2007; Tarrafa Silva & Pereira Roders, 2012).

The documents used as data source were all official documents resultant from the nomination and protection process such as the ABE (ICOMOS, 1991), the Nomination file (Mozambique, 1991), the decision texts (UNESCO, 1991-2011) and the Periodic report (Macamo, 2000). When classified, this list of attributes and corresponding values provided an overview of the reasons why Island of Mozambique was listed as World Heritage. In order to classify the threats and causes, they were sorted into respectively twenty four and nineteen categories (Turner et al, 2011). The categories presented were considered to be the most important threats or causes, ranked by their level of references in the documents.

The fieldwork in "Stone Town", was conditioned by the availability of data from previous surveys, as one of the main goals was to determine the evolution of this urban area. This comparative analysis over time required comparable data from earlier stages. For this reason, the "Island of Mozambique: Report 1982-1985" (Aarhus, 1985), generally known as the "Blue Book", was used as main reference to this research, together with its methods and tools.

For the comparative analysis three sets of data were collected. First, photographs were taken of all buildings in "Stone Town". One set of photographs was made to enable a categorization into themes such as main facade, roofs, doors, windows, decorative elements, etc. A second set was taken following the same perspectives as those taken in the eighties. The purpose was to compare the buildings condition in 1985 and 2011. Condition was classified in four categories: 1-in ruins, 2-poor, 3-deteriorating and 4-good condition (Aga Khan Trust for Culture, 2008). The condition rates from 1985 were converted into this classification.

Second, a set of floor plan drawings from the eighties has been used as a base to identify changes, by means of drawing the differences while visiting the buildings, using the "red and yellows" method, where additions are colored in red and subtractions are colored in yellow. Additions and subtractions included walls and elements, but also roofs. Though, in that case, crosses would be drawn in the map.

Third, interviews were conducted to identify the status of ownership issues and user properties. Questions ranged from closed questions on information such as ownership, household, infrastructure, etc.; to open-ended questions when asking questions such as the inhabitant's favorite spaces in the building and on the island and the changes they would make to the buildings and island, if they would have the resources.

All information has been structured in a Geographic Information System (GIS), enabling a quick illustration of the varied tables into maps, as well as, the comparison of tables and variables. MapInfo 10 was the program used to export the graphical representations of the collected data into the report. The database was created in Access (Windows Office) to enable the local authorities to keep on using and updating it.

Results

The attributes conveying the OUV of Island of Mozambique

The attributes conveying the OUV on the Island of Mozambique were found by using the coding method on the official documents. In brief, what would be referenced as having significance has been considered as attribute, the arguments to justify its significance would help determine the value(s).

Table 1.   Attributes of the Island of Mozambique conveying its OUV

Attributes	Cultural Values								Architectural elements
	1	2	3	4	5	6	7	8	
Principal port		X		X					Harbour, warehouses, hospital
St. Gabriel				X					St. Gabriel
National capital		X							Slave houses, 18th century development
Unequal development				X					Different urban structures
Same building techniques					X				Roof type, plan type, opening type
Same materials					X				Roof material, wall material
Same decorative principles					X				Cornices, pilasters, borders, colors
St. Sebastian							X		St. Sebastian
Defensive buildings							X		Fortifications
Numerous religious buildings							X		Churches, mosques, Hindu temple
The architecture of the town on the Island of Mozambique		X				X			Portuguese, Arab and Indian local features
The architecture of the fortifications on the Island of Mozambique		X				X			Portuguese, Arab and Indian local features
The architecture of the small island of St. Laurent		X				X			Portuguese, Arab and Indian local features
Island of Mozambique		X	X	X					Portuguese vs. Indian Ocean Culture

Table 1 lists the attributes found in the Advisory Body Evaluation (ABE) concerning the whole island, the values conveyed in these attributes, and the architectural elements related to the attributes. These last were not all found referenced in the ABE, but in the "Blue Book" (Aarhus 1985), a publication which sustained the nomination of Island of Mozambique to the World Heritage List.

This article will further elaborate on the attributes contributing to "the incredible architectural unity of the island" which according to the ABE derived "from the uninterrupted use of the same building techniques with the same materials and the same decorative principles" (ICOMOS, 1991). These attributes were chosen due to four main reasons. First, they are measurable, thus making it possible to explore both quantitatively and qualitatively. Second, the area of "Stone Town" has its own architectural unity, making it possible to research these attributes completely. Third, these attributes are categorized as "aesthetical", which the ABE (see Figure 3), revealed as being one of the most prominent values. Fourth, there is information on these attributes available dating 1982-1985 (Aarhus, 1985). Thus, when comparing this information with the current situation (2011-2012) the impact of the varied factors affecting the cultural significance conveyed in "Stone Town" could be determined.
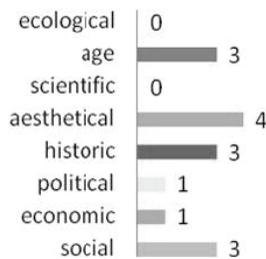
Figure 3.   The values of the attributes, mentioned in the ABE (Pereira Roders et al, 2012)

The consistent use of the same building techniques

There are three architectural elements which were chosen to illustrate the use of the same building techniques (table 1) being roof type, plan type and opening type. The results on roof and opening type will be elaborated further. There are two roof types distinguished: flat roof and pitched roof. When analyzing the roofs only the main building was taken in consideration, not the annexes. About 52% of the buildings of "Stone Town" have a flat roof; 46% have a pitched roof and 2% have both types. The opening type is distinguished in vertical openings, horizontal openings and rounded openings. The facades facing the streets have been analyzed and all the openings are categorized according to the type in majority. In 92% of the buildings the majority of the openings are vertical, in 7% horizontal and in 1% rounded openings.

The consistent use of the same materials

For the use of materials, wall materials have been distinguished into coral limestone masonry; cement blocks masonry and other materials. These other materials are in most cases bamboo sticks with stones and or mud, which are more common in "Macuti Town". Again, the main wall material type would be considered. In 96% of the buildings the walls are made of coral limestone masonry, in 2% of cement block masonry and 2% of other materials.

Beside the wall materials, also the roof materials have been analyzed. As mentioned before, 52% of the buildings have flat roofs. Flat roofs are traditional constructed in a consistent way: "the beams which are about 20 x 20 cm in section span between 4 and 6 meters from wall to wall. (…) Secondary joist, about 10 x 10 cm are fixed on top of the beams. The joist are spaced about 10-15 cm apart so that they can act as a bearing for coral limestone blocks. (…) Thick rough screed of lime mortar and limestone gravel is laid on top of the stone bed (…) The wearing surface is a 1.5 – 2 cm render layer consisting of a fine lime mortar" (Aarhus, 1985).

Besides this tradition flat terrace roof also flat reinforced concrete roofs are present in the "Stone Town". However, this type is only present on a few buildings and is not categorized separately. The pitched roofs are divided into industrial processed roofing sheets (45%); tiles (3%) and Macuti (2%). The other buildings have multiple dominant roofing materials.

The consistent use of the same decorative principles

For the consistent use of the same decorative principles only the facades facing streets have been taken into consideration. Three kinds of decorative principles are analyzed. The first is color scheme. The facades and the opening borders have often different colors, creating different color schemes. There are four kinds of color scheme distinguished: colored facade with white opening borders (51%), white facade with colored opening borders (9%), white facade with white opening borders (38%) and colored facade with colored opening borders (2%).

The second decorative principle is the opening border. The kind of opening border most present in "Stone Town" is a border with relief in relation to the facade and surrounds the whole opening. About 54% of the buildings have this 'full 3D opening border' around the majority of its openings; 14% have partial 3D borders, 1% has 2D borders and 31% have no borders around the majority of its openings.

Table 2.   Table 2. Integrity of the Architectural elements in "Stone Town"

Architectural elements	Buildings (%)	Integrity
Coral lime stone walls	96%	Very high
Flat roofs	52%	Reasonable
Vertical openings	92%	Very high
3D opening borders	68%*	High
Colored facade with white opening borders	51%	Reasonable
Pilaster, cornice or facade borders	89%**	Very high

*54% complete borders, 14% partial borders
**With an average of 1.9 decorative principle per building

For the last, decorative principles concerned three kinds of architectural elements: the pilaster, the cornice and the facade border (in most cases only a plinth). About 89% of the buildings have one or more of these principles on their facade(s); the other 11% have none. Of those buildings which have these decorative principles, 20% have one kind, 37% have two kind and 32% have all three kinds of principles on their facade(s). This is an average of 1.9 decoration principle (pilaster, cornice or facade border) per building in "Stone Town".

The factors affecting the "Stone Town"

Not only the attributes of OUV in Island of Mozambique are to be found mentioned in the official documents. Also their main threats, identified in UNESCO documents are new development, general degradation, natural disasters and some unidentified threats. The first two threats are the only ones which possibly have an apparent reason related to verifiable issues or causes. According to the analyzed documents "the lack of or insufficient regulatory framework" is the most important cause for the threats prevailing on the island.

The local Conservation Office (GACIM) is since 2006 the responsible body to control and correct the tendencies of rebuilding buildings different from what they originally were and/or from what is allowed according to the laws and legislations. As GACIM lacks the manpower and capabilities to monitor, these tendencies are not being reversed and will probably continue to affect the architectural unity of "Stone Town".

The factors which were found directly affecting the architectural unity are mainly "new development" and "general degradation". New development normally does not comply with the traditional building methods, materials and decorative principles. New development occurs in the type of additions, interior changes, layout changes and complete new buildings.

The OUV of the island mainly emerges in the built environment of "Stone Town". These tangible objects are subject to deterioration. The comparing results from 1982-1985 to 2011-2012 have proven the increase of deterioration. In thirty years the general condition score of 3.74 dropped to 3.17 (table 3). About 41% of the buildings in "Stone Town" are generally in good condition and 39% are deteriorating. The other buildings have structural problems: 17% of the buildings are in poor condition and 3% are in ruins. Speculation already stated that the general condition was getting worse, but now figures exist to prove it.

Table 3.   Table 3. The state of degradation of the "Stone Town"

Building element	1982-85	2011-12	Comparison
Walls	3.87	3.65	-0.22
Wall surfaces	3.63	2.73	-0.90
Roofs and floors	3.60	2.71	-0.89
Doors and windows	3.83	3.43	-0.40
General	3.74	3.18	-0.56

Discussion and conclusion

In sum, the consistent use of the same building techniques, the same building materials and the same decorative principles contribute to the outstanding universal value of the Island of Mozambique. These tangible attributes are still to be found in the built environment of "Stone Town". This consistency in architecture over the years has resulted in a homogeneous historic urban landscape. Elements such as traditional flat terrace roofs, limestone walls and facade decorations are key attributes of its homogeneousness.   Unfortunately, the gathered data evidences a trend in which their authenticity and integrity is slowly declining.

ABE does refer to the use of the same building techniques, materials and decorative principles, but does not discriminate their nature. The "Blue Book" does, but without percentages or locations, which limits an overview on what is being valued and why. It also disables heritage impact assessments of new developments. Even though the pitched iron sheet roof for example has been introduced in the 19th century, the flat roof is the only one being considered as the authentic one. Further research could allow an identification of the building techniques, building materials and same decorative principles conveying OUV and their integrity.

These consistent use of building techniques, materials and decoration principles are tangible immovable attributes. That is why they are subject to both new development and general degradation. As such, they are very much related as general degradation affects its condition and eventually leads into its dilapidation. Follow new developments who tend to replace the traditions in building techniques, materials and decoration principles.

Threats and causes, such as "general degradation", "lack of regulatory framework" and "new development" had never been proved to be directly affecting the OUV of the island. By means of this evidence-based research, evidence now exists for the direct relation between these threats and the destruction of OUV. The same use of materials and same use of building techniques resulted in a certain typology for the floor plans of the island. This yet needs to be defined and further elaborated in what way this typology is the result of this consistent use of same materials and same building techniques.

Future research could also aim to define the current state of integrity of this traditional floor plan and the importance of this aspect. Moreover, since this research focused on "Stone Town", "Macuti Town" remains unexamined. As the whole island is inscribed on UNESCO's World Heritage List, future research should continue in order to reveal and locate the OUV of "Macuti Town", as well as, how it is being affected.

To conclude, this research has given a clear overview of the current state of integrity of part of the attributes conveying the OUV of Island of Mozambique, as well as, to what extent these attributes are being affected. Clearer planning policies, a raise of GACIM technical capacity and halt of new developments with negative impact on its cultural significance could be the way forward to halt the dilapidation of its cultural significance which has proven to be progressively growing in Island of Mozambique.

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