6th International Conference on Role of Engineering Towards a Better Environment *(Nature Inspired Innovations towards a Sustainable Environment)*,

Alexandria, Egypt, 16 – 18 December, 2006

Appropriating cultural sustainability indicators [CSI]:

An approach to local urban development guidance

Khalid S. Al-Hagla

Dept. of Architecture, Faculty of Engineering, Alexandria University, Alexandria, Egypt
Faculty of Architectural Engineering, Beirut Arab University, Beirut, Lebanon

- *The vast material displacements the machine has made in our physical environment are perhaps in the long run less important than its spiritual contributions to our culture.*
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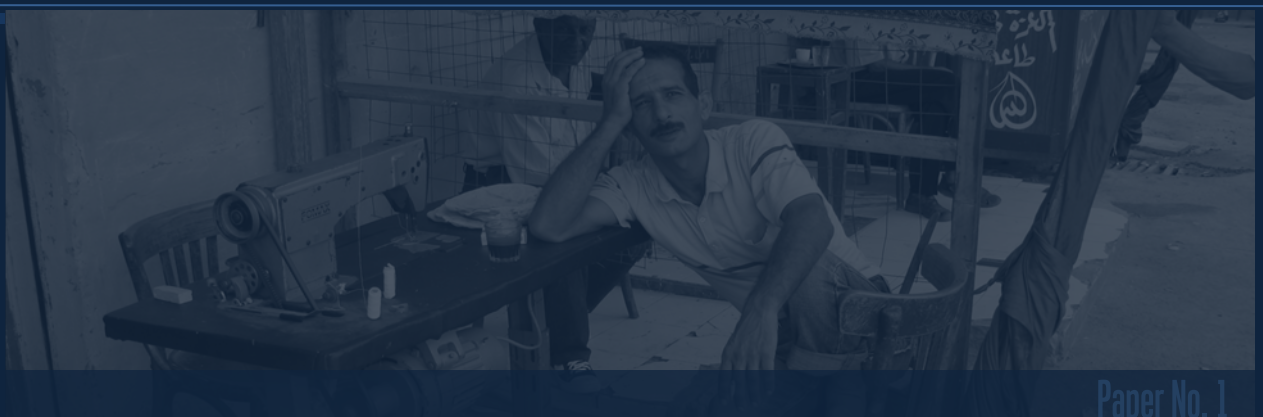
Lewis Mumford

PAPER NO.
1

Kom el-Dekka, Alexandria

ABSTRACTS



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Abstract

Cultural sustainability is one of the important domains within which an understanding of sustainability has developed its formulation. The global need for action is profoundly appreciated after the emergence of a clash of civilizations and other synonymous calls. It has become clear that; a global cultural matrix must be built upon a deep understanding of the interwoven typology of different, culturally distinctive beings. The global village and other globalization concepts have a wide scope of guidelines that need to be formulated (articulated) to accommodate the local application criteria.

This paper is a trial to set the criteria used for cultural sustainability performance evaluation. Moreover, it highlights the specific characterized local aspects that need to be taken into consideration when applying these indicators to a culturally identified area.

Keywords: cultural sustainability, sustainable development, indicators, globalization, cultural capital, identity

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إعادة صياغة مؤشرات الاستدامة الثقافية في ضوء الظروف المحلية
مدخل لتوجيه عمليات التنمية الحضرية

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الملخص

يستند تكوين مفهوم شامل عن الإستدامة إلي الإحاطة بالعديد من المحاور والتي يعتبر المحور الثقافي أحد أهمها. وقد برزت أهمية هذا الجانب حديثاً كرد فعل لظهور بعض الأفكار المتشددة التي تتبني نظرية الصراع المستمر بين الحضارات كإطار للعلاقة فيما بينها وما جرَّته من رؤي تتَّبع منطلقات مشابهة، مما أكد علي أهمية التحرك العالمي لمواجهة هذه الأفكار بتقديم نموذج ثقافي عالمي جديد يعتمد علي فهم أكثر عمقاً للطبيعة المتكاملة للكيانات الثقافية المختلفة والمتباينة طارحاً فكرة إعادة صياغة المبادئ العامة لتكوين مجتمع ثقافي كوني متكامل وواحد وذلك في ضوء ظروف التطبيق الخاصة بكل مجتمع محلي.

يقوم البحث بدراسة مجموعة المؤشرات العامة التي تستخدم لتقييم أداء الإستمرارية الثقافية في المجتمعات الحضرية مؤكداً علي مبدأ التمايزات الثقافية المحلية الخاصة والتي يجب أخذها في الإعتبار عند تطبيق هذه المؤشرات في المناطق ذات الهوية الخاصة.

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Cultural sustainability is one of the important domains within which an understanding of sustainability has developed its formulation. The global need for action is profoundly appreciated after the emergence of a clash of civilizations and other synonymous calls. It has become clear that; a global cultural matrix must be built upon a deep understanding of the interwoven typology of different, culturally distinctive beings. The global village and other globalization concepts have a wide scope of guidelines that need to be formulated (articulated) to accommodate the local application criteria.

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1. Introduction

Meanwhile, the emergence of the concept of sustainable development has given special emphasis to its physical dimensions -political, economic, and environmental -, its application has proved its ability to be extended to cover more non-physical areas. Cultural sustainability is one of the non-physical aspects of sustainable development. It adds a human dimension to the concept of application domain. [1]

The first efforts in this direction -bringing cultural aspects to the development arena- came not so much from theory, as from the practical concerns of the UN Commission, the World Commission on Culture and Development ("the Pérez de Cuéllar Commission"). This body was set up in the early 1990s with the ostensible aim of doing the same thing for culture as Brundtland had done for the environment. Although it failed to have the same impact on public awareness as its predecessor, its report, Our Creative Diversity (WCCD, 1995) [2] raised issues concerning the relationship between culture and development in somewhat similar terms and placed them at least implicitly within a context of sustainability. Nowadays, increased attention is paid to cultural sustainability, in order to allow it to play its role, synchronized to the rise of terminologies about globalization and the clash of civilizations. [3]

Moreover, a lot of hard work was done to define, in more and more precise ways, what sustainability means. These debates have been of such a conceptual nature that 'the term sustainability, like any other

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suddenly fashionable phrases, has been misunderstood and misused with increasing frequency. Even worse, it has been used to misinform so as to gain advantage for narrow and special interests'. [4] Sustainability indicators came to put the vague concept in a measurable, operational way that could be used to re-orient wrong practices towards more sustainable ones. The analogy between environmental and cultural majors is used to develop an understanding of "Cultural Sustainability Indicators" [CSI], based on the principles that control the understanding of environmental sustainability.

2. Cultural sustainability

2.1. The relationship of environmental and cultural sustainability

The concept of natural capital forms the basis for thinking about sustainable development –clearly reflected in the most accepted definition of Sustainable Development- "the management of natural resources in a way that provides for the needs of the present generation without compromising the capacity of future generations to meet their own needs." [5]. However, the parallels between natural and cultural capital are clear. Both have been inherited from the distant or recent past; the former provided as a gift of nature, the latter deriving from human creativity. Both impose a duty of care on the present generation, which comes to the heart of an understanding of sustainability. [3]

Regarding the cultural arena, the concept of cultural capital is gradually taking shape. David Throsby, in his paper entitled "On the Sustainability of Cultural Capital", gives a definition of cultural capital as "an asset that embodies or gives rise to cultural value in addition to whatever economic value it might possess".[3] He gives an example which makes this intuitively clear: "A heritage building may have some commercial value as a piece of real estate, but its true value to individuals or to the community is likely to have aesthetic, spiritual, symbolic or other elements that may transcend or lie outside of the economic calculus. These values can be called the building's cultural value". Cultural capital defined in this way may exist in tangible form as buildings, locations, sites, artworks, artefacts, etc., or in intangible form as ideas, practices, beliefs, traditions etc. (This paper addresses the tangible domain as the area of interest for urban settings)

2.2.1. Cultural sustainability, cultural capital and identity

Identity is a dynamic reflection of the continuous interaction between different components of community cultural capital [CCC]. It is developed over a long span of time. However, the principles of sustainability give an understanding of 'Identity" regarding the dynamic typology of the concept. This is based on Russell's theory [6], as he draws a perspective for identity formulation process (regarding the 'identity and continuity' relationship), based on two variables; the special characteristics –qualities or values- that distinguish any community (community cultural capital CCC), and the typology of the reactions between them (Fig.1).[1]

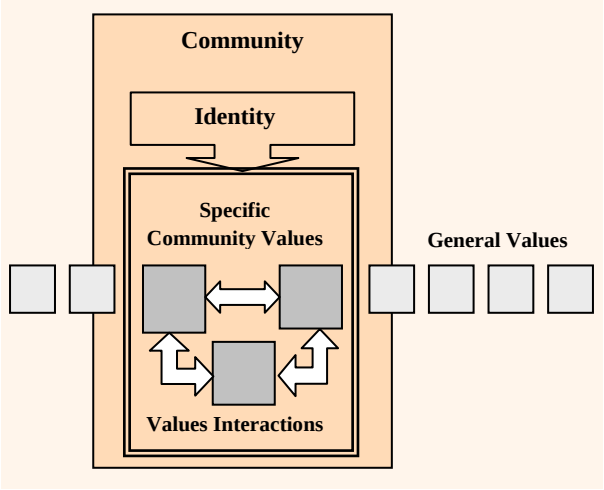

Figure 1: The dynamics of values interaction creating the community identity. Source: (Al-Hagla 2004)

Each community develops its own set of values that generally come after a continuous reaction with its surroundings, either natural or manmade. Both the values that control the community and the way these values are reacting all the time constitutes a distinguished dynamic identity that belongs uniquely to a certain setting. However, the consistency of either the values development or the changes in the typology of values interaction, or both of them together, help to sustain the community's identity. Vice versa, sudden changes lead to a loss of orientation. In other words, development activities that do not respect, accord legitimacy to, or are not formed within the contextual reality of people groups are ultimately not sustainable. That agrees with Spaling's definition: "Cultural sustainable development implies development that is shaped by - and takes into account its impact on - the shared ideas, beliefs, and values as well as the intellectual, moral, and aesthetic standards of a community." [7]

3. Weak and strong cultural sustainability

The essential concern of sustainability is with the maintenance of capital stocks. If the capital stock referred to is extended to include different types of capital, the question arises as to whether different types of capital can simply be aggregated, in such a way that a decline in the level of one type of capital

can be compensated for by an increase in another. In other words, this raises the issue of substitutability between forms of capital[3]. However, the typology of exchange between different types of capitals could be used to differentiate between two types of sustainability [weak and strong sustainability]. This is clearly reflected in the natural domain based on interpretations of the issue of substitutability between natural and human-made capital. [8]

The first, “weak sustainability”, derives from the original work of the two economists, Robert Solow and John Hartwick. They investigated the question of investing the rents from exhaustible resources in the presence of concern for intergenerational equity. In other words, it doesn’t matter if the present generation uses up exhaustible resources as long as sufficient new physical capital can be provided to future generations by way of compensation.

The second, “strong sustainability”, regards natural capital as being strictly non-substitutable for human-made capital, a view deriving in part from the unique life-supporting properties of global air, land and water systems. In other words, the strong sustainability paradigm assumes that the functions of natural capital cannot be replicated no matter how spectacular future technological advances might be [3].

Both the analogy between cultural and environmental sustainability and the understanding of the interrelationship between Cultural Sustainability, Cultural Capital and Identity formulation could be used to explain weak and strong cultural sustainability. The key issue is concerned with the management of cultural capital. What defines/highlights the difference between weak and strong are the limits of accepted exchange between different generations of cultural assets versus the innovative cultural features.

Weak sustainability deals with cultural capital as "Assets" that could be widely exchanged between different sequential generations. The gain from the exchange of practices could be used to upgrade the performance of these assets. Cultural tourism could be taken as an example. The "Reuse" of historical buildings enhances the performance of historical areas; moreover, it constitutes an added value to the overall cultural scene. On the other hand, the excessiveness of using these treatments may cause the cultural area to lose its unique personality and to be transformed into a place with a different character that may not be as attractive as the original one.

However, conservation practices stand as a key concept in achieving strong sustainability. They draw the limits of new generations' intervention to cultural assets that must not to be exceeded in any development process. This keeps a balance between the conservative transformation of cultural assets and the newly generated cultural features. Regarding the example of cultural tourism, the understanding of strong sustainability determines the transformation limits of the culturally distinctive area that keeps its special uniqueness. However the dynamic understanding of identity –which this paper presents- solves the conflict between the static typology of conservation and its sustainability dynamic application.

4. Aspects of cultural sustainability formulation

The analogy between cultural and environmental sustainability could be used to set the cultural sustainability aspects that formulate its understanding.

4.1. Precaution and conservation

Precaution and conservation practices are considered as defensive actions against the changes that deconstruct the balanced environmental scene. Both of them have a parallel in the cultural sphere. In the natural world this principle is invoked when a species is threatened; the same situation arises when, for example, an item of cultural capital such as an historic building is in danger of demolition, or indigenous languages are faced with extinction. [3]

Moreover, the conservation principle has great importance in maintaining the assets that formulate the hub of both environmental and cultural sustainability. A. Salama highlights the importance of conservation practices so as to keep cultural and social resources in a sustainable way: "the goal of cultural sustainability is retaining the social resources of indigenous knowledge and experience for future generations. In this respect, some argue that in order to sustain cultural and social distinctiveness, local knowledge must be incorporated into conservation policies and their underlying implementation efforts". [9]

On the other hand, the question of conserving and keeping the "Cultural Assets" in a good manner is the starting point to be handed to future generations in a strong sustainable way. However this has to be clear regarding both physical and non-physical cultural aspects. Moreover, it has to be discussed from a dynamic perspective that permits the development of identity in a sustainable way.

4.2. Diversity

Agenda 21 for Culture, developed by cities and local governments for cultural development, highlighted cultural diversity as its first issue. It asserts that "Cultural diversity is the main heritage of humanity. It is the product of thousands of years of history, the fruit of the collective contribution of all peoples through their languages, imaginations, technologies, practices and creations. Culture takes on different forms, responding to dynamic models of relationship between societies and territories". [10]

Universal Declaration on Cultural Diversity, adopted by the UNESCO General Conference in late 2001, provides an approach for sustainability from the viewpoint of cultural diversity. [11] The declaration is predicated on the consideration of culture as a fully-fledged resource for development. "Cultural diversity presupposes the existence of a process of exchanges, open to renewal and innovation but also committed to tradition, and does not aim at the preservation of a static set of behaviors, values and expressions". Cultural diversity is "a means to achieve a more satisfactory intellectual, emotional, moral and spiritual existence" (UNESCO Universal Declaration on Cultural Diversity, article 3), and is one of the essential elements in the transformation of urban and social reality [10]. The current situation also provides sufficient evidence that cultural diversity in the world is in danger due to a globalisation that standardises and excludes. UNESCO says: "A source of exchange, innovation and creativity, cultural diversity is as necessary for humankind as biodiversity is for nature" (UNESCO Universal Declaration on Cultural Diversity, article 1).

UNESCO determines the criteria for the sites that it could best protect cultural diversity through. They [12]

- Bear witness to multiple cultural identities,
- Are representative of minority cultural heritages,
- Are of founding significance or are in imminent danger of destruction.

Likewise the principles of maintaining cultural diversity would derive from the proposition that the diversity of ideas, beliefs, traditions and other artistic and cultural manifestations yields a flow of cultural services which is quite distinct from the services provided by the individual components. Moreover, the notion of diversity, which is of such overwhelming importance in the natural world, has an equally vital role to play in cultural systems; it is clear that cultural diversity makes an important contribution to artistic and cultural dynamism which, in turn, has flow-on effects in the economy, for example via its contribution to the so-called creative industries. [3]

4.3. Equity

A key element of the definition of "sustainable development" is the concept of "equity".[13] Graham Haughton determines five types of equity that any sustainable development process should include.[14]

- Inter-generational equity
- Intra-generational equity
- Geographical equity
- Procedural equity
- Interspecies equity

These equity types should be addressed as the basis for different generations sharing the territory's inherited values over time. When the principle of intergenerational equity to cultural sustainability is applied, this concept can be considered as relating principally to the management of cultural capital, because the stock of cultural capital, both tangible and intangible, embodies the culture we have inherited from our forebears and which we hand on to future generations. In addition to intergenerational aspects, the notion of ecological sustainability also implies several other principles, including attention to equity within the present generation, the maintenance of biodiversity, and observance of the precautionary principle (taking a risk-averse stance when confronted with decisions that may cause irreversible change). Principles of sustainable development in cultural terms can be proposed along similar lines. Thus, for example, intragenerational equity in the cultural arena would imply fairness in access to cultural participation across social classes, income groups, locational categories, etc., the provision of cultural services for minority or disadvantaged groups, and so on.

Moreover, the Forum of Local Authorities for Social Inclusion "Agenda 21 for Culture", Barcelona declared that "Access to the cultural and symbolic universe at all stages of life, from childhood to old age, is a fundamental element in the shaping of sensitivity, expressiveness and coexistence and the construction of citizenship. The cultural identity of each individual is dynamic". [10]

5. Sustainability indicators

"Sustainability Indicators" are perceived as the first step towards the clear formulation and operationalisation of the concept of sustainable development. "Sustainability [becomes] meaningless unless we can do it" [15]. It all started in 1992, when the Rio Summit established a mandate for the United Nations to formulate a set of indicators that would help gauge progress towards sustainability. [4]

The emergence of sustainability indicators came to handle the issues of sustainability complexity. Indicators of sustainability provide a simplified understanding of this concept by providing practical information about issues encompassed in it. These indicators show where we are, which way we are going and how far we are from where we want to be. However, a good indicator can alert us to a problem before it gets too bad and helps to recognize what needs to be done to fix the problem. On the other hand, these normative, proxy, measures reflect a trend; they show how far or close we are from being a 'sustainable society' by reflecting the reproducibility of the way a given society utilizes its environment / cultural assets.

Two types of sustainability indicators have been developed simultaneously. They either emphasize various components (ecological, economic, political, social) of the complex concept separately, in

numerous 'partial indicators', or they encapsulate all these components at once in indexes, or 'frameworks of indicators'. [4] The International Union for Conservation of Nature and Natural Resources (IUCN) and their report on Caring for the Earth, develop another classification. They classify sustainability indicators into three types of indicators: primary, secondary and tertiary. A quote taken from their report states that: "Primary indicators measure the condition of the ecosystem or species concerned. Secondary indicators measure human impacts. Tertiary indicators measure actions to reduce impacts." [14]

6. Cultural sustainability indicators

Cultural sustainability indicators can go through the same channels as the environmental ones. The paper follows the indicators classification developed by (IUCN). It highlights a number of practical concrete figures that are used to measure either the condition of the cultural setting and people who are of specific concern or, human impacts on the cultural setting, or finally, precautionary actions that are taken to reduce impacts. The paper develops an indicators' matrix that discusses three main issues that formulate the conceptual understanding of cultural sustainability indicators (diversity, equity, precaution and conservation) in three different perspectives (primary, secondary and tertiary), that would be specified in four levels of urban domains (region, city, area, space) that the indicators could be addressed within.

6.1. Precaution and conservation

6.1.1. Region

- Primary:
  - Number of conservation organizations.
  - Number of conservation commitments controlling regional cultural relations.
  - Number of cultural sites listed in the "World Heritage List", UNESCO
  - Number of regular conservation conferences and seminars.
  - How much money is spent on applying conservation strategies?
- Secondary:
  - Number of penetrations to regional cultural conservation commitments [governmental or indigenous].
  - Number of distinctive cultural sites that have vanished.
- Tertiary:
  - The degree of efficiency of rules application in protecting the conservation cultural areas.

6.1.2. City

- Primary:
  - Number of buildings listed in the "World Heritage List", UNESCO
  - Number of regulations that control the performance of conservation areas.
  - Number of conservation institutions [Green Parties, NGOs,]
  - Number of studies and research projects concerning cultural conservation areas.
  - The quality of decision making mechanisms based on scientific studies.
- Secondary:
  - Number of urban transformations due to tourism pressure [in conservation cultural areas]
  - Number of urban transformations due to economic investment pressure.
- Tertiary:
  - Measuring the quality of conservation building legislations [regarding the respect of local distinctive characters of conservation areas].

6.1.3. Location/Area

- Primary:
  - Number of buildings listed the "World Heritage List", UNESCO
  - Building conditions.
  - The residents' economic resources.
  - The residents' educational level.
  - The economic revenue of local cultural activities.
  - Number of people that a culturally conservation character could attract?
  - Number of NGOs that are concerned with conservation issues.
- Secondary:
  - Measuring the impact of applying building legislation to the local character.
  - Applying cultural "Carrying Capacity" to the area scale.
- Tertiary:
  - Measuring the quality of building legislations [regarding the respect of local distinctive characters, controlling the changes of land use, and the typology of urban activities].
  - Measuring the impact of rising public awareness upon conservation practices.
  - The efficiency of public participation in creating local conservation support.

6.1.4. Urban space

- Primary:
  - Number of people that support the conservation of space uniqueness based on its physical characteristics [three dimensional articulation, two dimensional articulation, proportion, texture, colors, etc].
  - Number of people that the authenticity of urban space events could attract.
  - Number of people that local cultural industries could attract.
  - Number of NGOs and cultural institutions that support space conservation
- Secondary:

- Number of shops that changed their traditional crafts.
- Number of buildings that changed their original use.
- Quality of maintenance.
- The impact of new developments to urban space perception qualities. [Three dimensional articulation, two dimensional articulation, proportion, texture, colors, etc],

• Tertiary:
- Measuring the quality of building legislations [regarding the respect of local distinctive characteristics, controlling the changes of land use, and the typology of urban activities].
- What support does the government give to encourage conservation of space identity?
- Measuring the quality of the application of conservation policies.
- Type of injected activities in the space to support its vitality.

6.2. Diversity

6.2.1. Region

• Primary:
- Number of unique ways of urban expression (physical and non-physical)
- Number of commitments controlling regional cultural relations.
- Number of inter-regional cultural tourists.

• Secondary:
- Number of penetrations to regional cultural commitments [governmental or indigenous].
- Applying cultural "Carrying Capacity" to the regional scale.

• Tertiary:
- The degree of efficiency of rules application in protecting the distinctive cultural areas.

6.2.2. City

• Primary:
- Number of unique ways of urban expression (physical and non-physical)
- Number of roles controlling minority's cultural expressions.
- Number of cultural institutions [museums, cultural centers etc]

• Secondary:
- Number of urban transformations due to tourism pressure [in distinctive cultural urban areas].
- Applying cultural "Carrying Capacity" to the city scale.

• Tertiary:
- Measuring the quality of building legislations [regarding the respect of local distinctive characteristics].

6.2.3. Location/Area

• Primary:
- Number of regular local cultural events.
- The economic revenue of local cultural industries.
- Number of people that culturally local events could attract.

• Secondary:
- Measuring the impact of applying building legislation to the local character.
- Applying cultural "Carrying Capacity" to the area scale.

• Tertiary:
- Measuring the quality of building legislations [regarding the respect of local distinctive characteristics, controlling the changes of land use, and the typology of urban activities].

6.2.4. Urban space

• Primary:
- Number of people that special physical characteristics which distinguish the space [three dimensional articulation, two dimensional articulation, proportion, texture, colors, etc], could attract.
- Number of people that urban space events could attract.
- Number of people that local cultural industries could attract.

• Secondary:
- Number of shops that changed their traditional crafts.
- Number of buildings that changed their original use.
- Quality of maintenance.
- The impact of new developments to urban space perception qualities. [Three dimensional articulation, two dimensional articulation, proportion, texture, colors, etc],

• Tertiary:
- Measuring the quality of building legislations [regarding the respect of local distinctive characteristics, controlling the changes of land use, and the typology of urban activities].
- What support does the government give to encourage the conservation of space identity?
- Measuring the quality of the application of conservation policies.

6.3. Equity

6.3.1. Region

• Primary:
- Applying the required items of "Precaution and Conservation".
- Cost of regional transportation compared with average income.
- The quality of inter-regional accessibility.
- Number of youth organizations that support inter-regional travel and accommodation, and how much they spend.

• Secondary:

- Applying the required items of "Precaution and Conservation".
- The degree of complexity of political procedures regarding the interregional cultural mobility.

• Tertiary:
- Applying the required items of "Precaution and Conservation".

6.3.2. City

• Primary:
- Applying the required items of "Precaution and Conservation".
- Cost of inter-city transportation compared with average income.
- Number of people who attend city's cultural activities.
- City residents' share of economic revenue from local cultural activities.

• Secondary:
- Number of urban transformations due to tourism pressure.
- Number of urban transformations due to economic investment pressure.
- Number of restrictions on accessibility of cultural sites.

• Tertiary:
- The discounts on ticket prices for special categories [students, the elderly, young persons, etc]

6.3.3. Location/area

• Primary:
- Applying the required items of "Precaution and Conservation".
- Cost of tickets for the cultural zones compared with average income.
- Number of regular free cultural events.
- Number of cultural events regenerating the memory of the area.
- Number of young people who visit cultural areas.
- Number of young people who attend regular cultural activities.
- Local area residents' share of economic revenue from local cultural activities.
- Number of NGOs that are concerned with conservation issues.

• Secondary:
- Applying the required items of "Precaution and

	Region	City	Local area	Urban Open space
Precaution and Conservation	• Applying the required items of "Diversity" and "Equity". • Cultural regions, cities, sites, buildings listed in the "World Heritage List", UNESCO			
	• Conservation commitments controlling regional cultural relations. • The application of conservation rules.	• Conservation institutions [Green Parties, NGOs, ….]. • Decision making mechanisms based on scientific studies.	• Building conditions. • Cultural "Carrying Capacity" concept • public participation in creating local conservation support	• Space uniqueness qualities. • Governmental support to local cultural aspects (physical and non-physical)
			• NGOs concerned with conservation issues. • Quality of maintenance	
		• Conservation building legislations [regarding the respect of local distinctive characteristics of conservation areas]. • Urban transformations due to development pressures.		
Diversity	• Applying the required items of "Precaution and Conservation" and "Equity".			
	• Unique ways of urban expression (physical and non-physical) • Protecting the distinctive cultural areas	• Minority's cultural expressions • Cultural institutions [museums, cultural centres, etc]	• Regular local cultural events • Local cultural industries	• The ability of space's unique qualities to attract people. • The impact of new developments on perception qualities of urban space • Quality of maintenance
		• The impact of applying building legislation to the local character. • Measuring the quality of the application of conservation policies.		
	• Applying cultural "Carrying Capacity"			
Equity	• Applying the required items of "Precaution and Conservation" and "Diversity".			
	• Inter-regional accessibility • Inter-regional cultural mobility	• Urban transformations due to different pressures • Accessibility of cultural site	• Regular free cultural events. • Common accessible cultural buildings	• Cultural performances held in their original places • Dynamic conservation policies • Regular open space cultural exhibitions
		• Accessibility of cultural site		
			• Quality of maintenance	

Table 1. The shred issues – cultural sustainability indicators. source: the Author.

Conservation".
- Number of restrictions to accessibility of cultural sites.
- Applying cultural "Carrying Capacity" to the area scale.

• Tertiary:
- Applying the required items of "Precaution and Conservation".
- Number of historical buildings that are adeptly reused to be common accessible cultural buildings [cultural centers, museums, etc.]

6.3.4. Urban space

• Primary:
- Applying the required items of "Precaution and Conservation".
- Local area residents' share of economic revenue from local cultural activities.
- Number of cultural performances that are held in their original places.
- To what extent are dynamic conservation policies applied?

• Secondary:
- Number of private historical buildings that the public are not allowed to access.
- Quality of maintenance.
- To what extent do the new urban developments influence the sustainability of space perception values?

• Tertiary:
- Applying the required items of "Precaution and Conservation".
- Number of regular open space cultural exhibitions.

Conclusions

This paper develops an approach to an understanding of cultural sustainability indicators based on the analogy between cultural and environmental domains. However, it concludes three key issues that cultural sustainability could address within, Precaution and Conservation, Diversity, and Equity, It uses these issues to develop a number of 'partial indicators', discussed from three different perspectives: "Primary indicators measure the condition of the cultural area. Secondary indicators measure human impacts. Tertiary indicators measure actions to reduce impacts." It is based on the study of four levels of urban domains (region, city, area, space).

The paper highlights the importance of understanding conservation and all its related concepts - conservation policies, legislations, practices, NGOs support, support of people etc- as a key point in formulating cultural sustainability indicators. The limits of conservation practices differentiate between two types of sustainability; weak and strong sustainability. The paper presents an understanding of these two types and sets the indicators for applying the latter as a guarantee for preserving the unique cultural identity towards the spread of globalization calls. However, it creates a dynamic, interactive, sustainable, cultural, personality based on a dynamic understanding of the community's identity.

Moreover, the analysis of the developed cultural sustainability indicators shows the compatibility of different aspects of cultural sustainability. Meanwhile, precaution and conservation represent a comparatively static requirement of cultural sustainability realization. Equity and diversity stand on the opposite side. However, these aspects are shaping a closed circle as each of them is a prerequisite for the other two. The paper presented a set of indicators that aim to measure and orient all of these dynamic interactive processes in a fully controlled sustainable rhythm.

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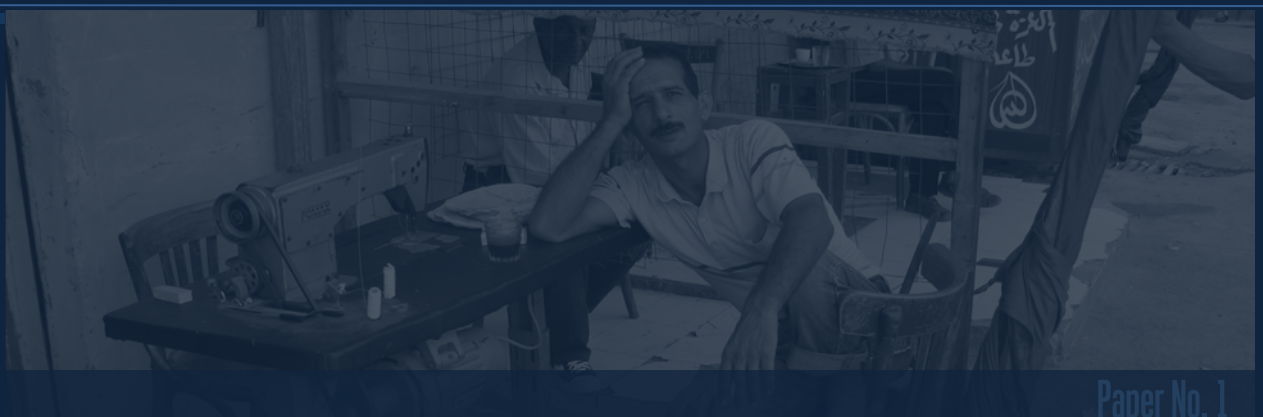

Paper No. 1

RETBE'06

Faculty of Engineering
Alexandria University

THE 6TH INTERNATIONAL CONFERENCE ON ROLE OF ENGINEERING TOWARDS A BETTER ENVIRONMENT

THE CONFERENCE ORGANIZING COMMITTEE HEREBY WISHES TO THANK :

KHALID S. AL-HAGLA

FOR ATTENDING THE CONFERENCE AND FOR PRESENTING THE PAPER ENTITLED:

**"APPROPRIATING CULTURAL SUSTAINABILITY INDICATORS (CSI)
AN APPROACH TO LOCAL URBAN DEVELOPMENT GUIDANCE"**

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ALEXANDRIA UNIVERSITY FACULTY OF ENGINEERING

RETBE'06

ROLE OF ENGINEERING TOWARDS A BETTER ENVIRONMENT

6th INTERNATIONAL CONFERENCE
December 16-18,2006

Nature Inspired Innovations Towards a Sustainable Environment

Call for Papers

Introduction and Background

How can we sustain our planet's life-support systems to meet humanity's needs both today and tomorrow? Under the aegis of Alexandria University, the Faculty of Engineering is hosting a conference to explore innovative solutions to some of the most pressing environmental challenges.

The Faculty of Engineering announce its 6th international conference 'Role of Engineering towards A Better Environment' RETBE. This year the theme of the conference will be "Nature Inspired Innovations towards a Sustainable Environment"

The conference will take place on December 16-18, 2006, in Alexandria, Egypt.

The overall challenge, before us in the 21st century, is to avoid crossing irreversible thresholds that damage the life systems of Earth while creating long-term economic, political, and moral arrangements that secure the wellbeing of present and future generations. We hope the conference will help participants learn how to meet this challenge.

Besides enhancing well-being for all people, the conference addresses issues such as:

(1) The need for more accurate models, metaphors, and measures to describe the human enterprise relative to the biosphere;

(2) Promoting design innovation through the consulta tion and general inspiration by nature: the study of nature's models and its imitation and adaptation for human use. The future can be far better served if we will follow -- and mimic -- nature's own highly effic ient and productive ways;

(3) The need for greatly improved education: A curriculum organized around the study of the relationships between energy, environment, and economics and how these apply across various scales of knowledge; and

(4) The requirement for a marked improvement and creativity in the arts of environmental leadership, vision and stewardship: Management aimed at peserving and enhancing the quality of the environment.

Submission of Abstracts

Authors from all disciplines are invited to submit an electronic version of a 250-word abstract on one or more of the conference topics. It should include the title of the paper, name(s) and affiliation(s) of author(s), complete mailing address(es), electronic mail(s) and fax number(s). The abstract should also include the objective(s) of the work and the main conclusions.

Conference Objectives

The main objectives of RETBE 06 are:

- To enhance well-being for all people through addressing issues of environmental technology and sustainable environment.
- To promote the design innovation through the consultation and general inspiration by nature.
- To improve environmental education.
- To enhance creativity in the arts of environmental leadership, vision and stewardship.

Main Topics of The Conference

- Biomimicry
- High Performance Sustainable Building
- Life Cycle Assessments
- Clean Transport
- Sustainable Energy & Renewable Energy
- Environmental Leadership, Vision & Stewardship
- Recycling Systems
- Eco-Effectiveness & Efficiency
- Cleaner Industrial Processes
- Environment Education & Training
- Water Quality Management & Control

Important Dates

Submission of abstracts	*March 31, 2006*
Acceptance of abstracts	*April 30, 2006*
Submission of full paper	*June 30, 2006*
Notification of papers acceptance	*September 15, 2006*

Exhibition

Exhibitors are accepted on a first come first serve basis. The Exhibition features will include, but not limited to, climate and environmental technologies, scientific publications, software, and organizations committed to energy planning and natural resource management.

Official Language

The Conference working language will be English. All printed matter will appear in English.

Accommodation

Hotel reservation for participants will be available on request in various areas and rates.

Conference Fees

- Before 15 September 2006:
  The registration fees are US$ 500 (LE 500 for Egyptians and Residents)
- After 15 September 2006:
  The registration fees are US$ 600 (LE 600 for Egyptians and Residents)

The fees cover Opening Ceremony, Conference Proceedings, Coffee Breaks Lunches, and Closing Banquet.