

The drawbacks of a global concept of sustainable neighbourhood in developing countries

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Abstract

A sustainable neighbourhood is generally considered the key spatial unit for cities, enabling sustainability to be applied as a set of urban planning, social and environmental principles (Barton, 2000; Farr, 2008; Rudlin & Falk, 1999).

However, the concept of sustainable neighbourhood was developed in the global North, thus reflecting a city form and social context that do not apply to developing countries, which have different cultures, goals and priorities. Yet, in the global South, the uncontrolled urbanisation led to adopt the sustainable neighbourhood concept as developed for the cities of the global North, in an attempt to attain a more sustainable urban development (Barthel, 2014, 2015; Elgendy, 2011). Ironically, this is inconsistent with the notion of sustainability that advocates a planning and design process customised to the local context. As a result, a rejection of the globalised projects by the local population for not being responsive to their lifestyle leads to spatial and social segregation (Chabou, 2008; Dris, 2005).

This paper aims to demonstrate the twofold hypothesis that the sustainable neighbourhood concept of the global North cannot be generalised, and a truly sustainable model should emerge from local context. In order to do so, the paper will review relevant literature focusing on the concept of sustainable neighbourhood and will uncover the negative repercussions of this imported model in developing countries. Building on the literature review of several case studies, the paper will mention the failures of the globalised projects, such as the loss of locality, degradation of sense of community, social and spatial segregation, and globalisation. The outcomes of the paper are useful for contemporary and future sustainable urban projects to learn from past mistakes, which can be avoided in order to facilitate the achievement of a more sustainable neighbourhood development.

Introduction

Cities are enjoyable places to live when they are designed in accordance with human needs, are responsive to people's lifestyle and provide opportunities for people to live according to their local socio-cultural norms. However, at a time of uncontrolled globalisation and urbanisation, cities are rapidly growing to accommodate the large number of inhabitants and buildings, ignoring the human scale and needs of people. For example, the proliferation of gated communities and the construction of mass housing are gradually eating up public spaces, leaving little or no space for community activities, which makes it difficult for communities to coalesce (Wang, 2017; Yigitcanlar et al., 2015).

In order for cities to function properly and remedy these problems, a concept of sustainability recognising the critical contribution that communities can play needs to be included in their planning and development strategies. One of the constitutive elements of a sustainable city is the sustainable neighbourhood, which embodies the space and place enabling communities to thrive with minimal impact on the environment (Farr, 2008). A large number of planners and designers consider the neighbourhood as the best scale at which sustainability can be applied as a set of planning, social and environmental strategies to form sustainable cities and ensure a sustainable lifestyle (Sturgeon et al., 2016). However, a sustainable neighbourhood concept should be highly specific to the local context and responsive to the local environmental, social, economic and political conditions.

A review of literature and planning tools suggests that the concept of sustainable neighbourhood is developed in reflection of lifestyles and models of urban growth typical of the global north, thus not being suitable for developing countries (Nagendra et al., 2018; Yazdani & Dola, 2013). In the global south, the fast rate of urbanisation and an ambition to develop cities sustainably leads to the adoption of principles for the design and implementation of sustainable neighbourhoods as developed for cities of the global north. Ironically, this is inconsistent with the notion of sustainability that advocates a planning and design process customised to the local context.

Globalisation is more than an economic phenomenon; the circulation and application of models of urban development worldwide (e.g. the compact city, the 24 hour city and urban renaissance) are another examples of globalisation. Similarly, the concept of sustainable neighbourhood who first emerged in North European countries has travelled and has been adopted by different countries worldwide since the 2000s (Srir, 2016).

Despite the emphasis on the local context in sustainable design approach, the desire for a rapid development and a reflection of sustainability in certain countries, led decision makers to commission foreign expertise and opt for international standards, which usually apply globalised sustainable neighbourhood approaches without paying attention to the local climatic, economic, social and cultural conditions of the region (Rapoport, 2015). This results in a reliance on the use of energy-intensive air conditioning systems, and the design of socio-culturally inappropriate urban spaces that are segregated and lifeless (Elgendy, 2011; Abdelsalam & Rihan, 2013).

But poor responsiveness to climatic conditions is not the only negative impact of a globalised approach to the design of neighbourhoods. A lack of understanding of the local context leads to the blind conformity with international standards, causing a loss of the locality and a degradation of the community by creating lifeless and unattractive neighbourhoods lacking vitality and human scale (Ahmed, 2017; Rudlin & Falk, 1999). They become ghost neighbourhoods with fewer people and business when compared to the available space, as it is the case in most Chinese eco-cities that are considered as ghost towns (Saiu, 2017). Social sustainability is the least researched aspect of sustainable planning (Hagen et al., 2017), which could be the reason why sustainable neighbourhood projects around the world often pay less attention to the social dimension of sustainability, focusing more on achieving environmental targets and economic prosperity (Murphy, 2012), thus the use of high cost technologies and the creation of gated communities, which result in social exclusion and spatial segregation (Saiu, 2017). Finally, international master planners often provide designs that were once developed for a different context which leads to the importation of foreign architectural styles and planning approaches that are not in harmony with the local context, causing a degradation in the sense of place and place identity, thus local residents no longer feel identified with a place that was once socially and culturally responsive (King 2004).

Despite vast researches that focus on the importance of linking the local context with the concept of sustainable neighbourhood, there is a paucity of studies unveiling the negative consequences of the globalised concept of sustainable neighbourhood. This paper will review the literature which focuses on the implementation of global sustainable neighbourhood models in developing countries, particularly in North Africa, but also other developing countries, in order to provide more arguments and credibility to emphasise the findings. The aim is to highlight the recurrent mistakes that prevent the full success of sustainable projects, and their impact on the city image and its components. It illustrates that the blind imitation of international standards is responsible for the achievement of partial results despite the multiple objectives of a sustainable neighbourhood.

To analyse these issues, three major repercussions of a globalised sustainable neighbourhood concept are identified. The three issues are: 1) the loss of locality (the degradation of the community), 2) Social exclusion (social injustice and spatial segregation), 3) Internationalisation and globalised image (the loss of local identity and sense of place). The literature review shows that these three issues are the most common results of globalisation, and that they are not necessarily alternative, however they can happen at simultaneously or in different combinations.

The paper is organised in three main parts (section1-4). First, section 1 is an introduction and a brief overview of the paper. Next, in section 2 which is divided into 3 subsections, the paper reviews the concept of neighbourhood, refers to the different movements that led to the development of a sustainable neighbourhood paradigm, and provides different definitions of the paradigm as well as the identification of key principles and indicators of sustainable neighbourhood. In the following section 3, the negative repercussions of the globalised sustainable neighbourhood projects are reviewed, through providing specific examples in order to highlight the impacts of the three issues outlined above. Finally, section 4 is a conclusion recapitulating the findings of the paper and some recommendations, in order to avoid the recurrent failures and help future projects achieve sustainability.

2. Background paradigms and underlying principles

2.1. Conceptualising the neighbourhood

Historically, human settlements have been spatially formed with districts and neighbourhoods. Today, the importance of the neighbourhood continues to hold an essential part within the fabric of the city, both socially and spatially (Smith, 2010; Sharifi, 2016). Many scholars claim that it is hard to define a neighbourhood precisely, but everyone knows it when they see it (Galster, 2001). Some scholars claim that a neighbourhood is subjective as it can be defined according

to several parameters, such as the residents' perception, the features of the place, the availability of facilities, population size and the social relations between the residents (Rappaport, 1977; Barton 2000). Yet, most definitions of the neighbourhood agree that two are the critical components of a neighbourhood; its physical design and the social context.

The first component defines the neighbourhood as a spatial/functional construct that is bound by its physical design (the built environment) and the availability of services, while the second component is an interpretation of the neighbourhood as a social construct, featuring the notion of community and social relations between neighbours (Barton, 2000; Briggs, 1997; Choguill, 2008; Forrest & Kearns, 2001; Galster, 2001; Hallman, 1984; Jenks & Dempsey, 2007; Martin, 2003; Meegan & Mitchell, 2001; Rohe, 2009; Sharifi, 2016; Smith, 2010; Suttles, 1972).

Neighbourhood and community are overlapping terms. The neighbourhood is defined as a spatial unit that contains residential or mixed-use areas, and the community refers to a network of people with overlapping interests and mutual support and solidarity (Barton, 2000; Jenks & Dempsey, 2007).

The emergence of the concept of sustainable development in 1987 stirred up approaches to achieve sustainability through planning at the neighbourhood level (Barton, 2000; Farr, 2008; Komeily & Srinivasan, 2015; Sharifi & Murayama, 2013; Rudlin & Falk, 1999; Wheeler, 2004). Sustainable development was developed following concerns over the impact of uncontrolled urban growth on the environment and social justice issues (Dempsey et al., 2011), from then on, the need for more sustainable urban forms has been sought (Marique & Reiter, 2011) aiming to enhance the quality of life of people while protecting the environment, improving the economy, ensuring social equity and preserving local culture (Deakin, 2001). The concept of sustainable development was defined in a report entitled "Our common future" also known as "the Brundtland Report" as "the development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). Sustainability is formed of three interrelated components, which are environmental protection, economic and social development (Drexhage & Murphy, 2010). Urban sustainability, which is a key component of a broader strategy for sustainable development, can be regarded as a course of actions that aim to create vibrant, safe, inclusive and socially cohesive communities, while protecting the environment and enhancing the socio-economic aspect of the neighbourhood (Dempsey et al., 2011; Hagen et al., 2017).

2.2. The concept of sustainable neighbourhood: principles and indicators

The concept of sustainable neighbourhood can be regarded as a continuation of urban planning approaches that sought to create better and liveable neighbourhoods from the early 20th century onwards. Following Ebenezer Howard's Garden City Movement in 1898, who inspired Clarence Perry to create the Neighbourhood Unit concept in 1923, Clarence Stein and Henry Wright picked up the concept and developed it further in the planning of Radburn in 1929. Later on, Mumford (1937, 1954) showed support for the neighbourhood unit as a concept to promote community feeling and social interaction among residents (Choguill, 2008; Rohe, 2009; Sharifi, 2016). In 1960s, Kevin Lynch, Jane Jacobs and Christopher Alexander among others also urged planners to revise the neighbourhood planning approaches used at the time, by stating some principles that provided a basis for creating better neighbourhoods (Fatani et al., 2017).

The neighbourhood is considered as an important element of the city fabric at which sustainability principles can be applied to form sustainable cities and ensure a sustainable lifestyle (Marique & Reiter, 2011; Sharifi, 2016; Sturgeon et al., 2016). The Sustainable urban neighbourhood is a combination of important factors (environmental, social and economic); the term sustainable indicates the ability of the neighbourhood to function while protecting the environment. The term urban relates to the location of the neighbourhood and its physical design, whereas the term neighbourhood refers to the built environment, and the economic and social aspects of the area (Rudlin & Falk, 1999).

Sustainable neighbourhood is also defined as a lively mixed used development that is both socially and environmentally friendly, based on locality and social interaction and aims to enhance the quality of life of residents by creating jobs and enhancing economic wellbeing (Barton, 2000; Carley & Kirk, 1998; Churchill & Baetz, 1999; Farr, 2008; Frey, 1999) describes the sustainable neighbourhood as a high dense area that allows sustainable mobility through walking, cycling and public transport and promote social interaction and vitality by providing necessary amenities and recreational facilities nearby, in addition to social and housing diversity.

Moreover, the sustainable neighbourhood remains the function of the traditional neighbourhood as an area where people practice their daily life and groups people around a common social and cultural identity. It has a socio-economic dimension as it promotes social interaction and environmental performance through an environmentally friendly planning (Wheeler, 2004). Farr (2008) based his definition on the Charter of the Congress for the New Urbanism, stating that a sustainable neighbourhood aims at satisfying people's needs in terms of housing, workplace and leisure through urban forms that are environmentally friendly, compact and connected in order to promote walkability and social interaction (Farr, 2008).

2.3. Principles and indicators of sustainable neighbourhood

Vast literature discussed the concept of sustainable neighbourhood (Barthel, 2010; Barton, 2000; Choguill, 2008; Condon, 2010; Coyle, 2011; Farr, 2008; Fraker, 2013; Frey, 1999; Friedman, 2014; Holden et al., 2015; Jabareen, 2006; Joss, 2011; Luderitz et al., 2013; Medved, 2017; Rudlin and Falk, 1999; Salheen et al., 2015; Sharifi, 2016; Wheeler, 2013). Additionally, various initiatives and planning approaches were developed as guidelines to create sustainable neighbourhoods such as New strategy of sustainable neighbourhood planning, the Charter of New Urbanism, urban smart growth, UN-Habitat, A Sustainable City of Neighborhoods Project, to name but few. In 2015, the General Assembly of the United Nations enacted the 2030 agenda that includes 17 goals of sustainable development (SDGs). Goal 11 promotes the building of sustainable cities and communities, table 1 shows the targets that can be applied to create sustainable neighbourhoods.

Table 1. UN goal to create sustainable cities and communities.

Goal 11: Sustainable Cities and Communities
Make cities and human settlements inclusive, safe, resilient and sustainable

By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums
By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons
By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
Strengthen efforts to protect and safeguard the world's cultural and natural heritage
By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations
By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities
Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning
By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels
Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials

The method used to develop the principles of sustainable neighbourhood in this paper is qualitative, key authors and several initiatives were reviewed, following that a thematic analysis has been designed in order to identify themes and recurring patterns. After an extensive review of the previously mentioned literature and initiatives, principles and indicators were grouped into clusters based on themes, and each cluster represents a specific dimension of sustainable neighbourhood. The chosen technique to group principles is to break down every single dimension of urban sustainability into manageable tasks to ease the development of a guideline to create sustainable neighbourhoods.

The following section aims to elaborate the principles and indicators of sustainability at the neighbourhood level within the limited breadth of the relevant and comprehensive literature.

The principles mentioned in this paper are highly interdependent; they derive from the global literature and are considered as generic key guiding ideas to be applied in different contexts, however they cannot have equal outcomes as they need to be contextualised. It is acknowledged that it is difficult to develop a comprehensive set of sustainable neighbourhood principles, given the various and repetitive definitions. The aim is to group the most commonly used and agreed upon principles, however, it is possible that the research have unintentionally missed out some principles.

Based on reviewing the previously mentioned literature and the initiatives, it is possible to conclude that the main sustainable neighbourhood principles can be clustered as follow:

- Sustainable urban metabolism
- Sustainable built environment
- Satisfaction of human needs
- Urban social sustainability
- Natural environment
- Economic sustainability

The following section gives more insight about each cluster and then it is presented in Table 2

2.3.1. Sustainable urban metabolism

Sustainable urban metabolism requires the reliance on a circular cycle of metabolism, through a reduction in resource input and the exploitation of the output as a source for the input, and the reliance on an on-site power generation system and the use of renewable energies. Exploitation of the natural resources such as rain, wind, sun and promotion of local food production (Barton, 2000; Rudin & Falk, 1999). Provision of clean water and a thorough water management system that ranges from rainwater collection to storm and flood management, and infrastructure for sewage recycling to use water for watering gardens and cleaning the streets (Barton, 2000; Farr, 2008; Luederitz et al., 2013). Segregation of waste and recycling all waste outputs to use them as productive inputs, this will reduce solid waste pollution, provide alternative to generate power and transform compost waste into fertilizer for local gardens and allotments (Fraker, 2013).

Apply bioclimatic design strategies to reduce heating and cooling demand, and water use, through the use of low embodied energy materials, recyclable materials, insulation, and taking into consideration orientation of the building and the local natural resources (Rudin & Falk, 1999).

2.3.2. Sustainable built environment

According to Jabareen (2006) six are the elements of sustainable urban form; compactness, sustainable transport, density, mixed land uses, diversity, passive solar design and greening. Compactness indicates urban continuity and connectivity, it can be achieved through an increase in the density of the area, and the development of previously existing buildings and urban lands. Compact urban forms reduce transport of energy, water and people, increase social interaction, liveliness and ease accessibility to services (Jabareen, 2006)

Mixed use land use refers to a variety of activities in a common area, such as residential, commercial, industrial, and institutional as well as transportation infrastructures (Frey, 1999; Jabareen, 2006). Mixed-use developments promote local economy by encouraging local farmers' markets, and providing necessary facilities within walkable distances from the housing units, in order to reduce the use of cars and encourage sustainable mobility through walking and cycling which in turn require appropriate paths equipped with trees for shading and resting areas (Farr, 2008). Mixed use areas create a viable and lively neighbourhood, the availability of local facilities increase the presence of people in the streets, and thus create focal points and public spaces which increase social interaction, safety and security (Barton, 2000).

Transport can be a serious issue for environmental sustainability of neighbourhoods, urban forms have a big impact on the travel patterns of residents, whereas they should provide opportunities for walking, cycling and efficient public transport. A sustainable urban transportation system is powered by renewable energy sources and limits emissions, it is efficient, affordable and accessible by all people (Jabareen, 2006). Create sustainable public transport that ensures connectivity to, from and within the neighbourhood to adjacent districts.

Sustainable mobility includes walking and cycling, through protected paths and well-connected streets, it also requires a high enough density, mix of uses with small physical separation between the different activities (Jabareen, 2006).

Density enables social interaction and liveliness within a neighbourhood, it also supports local economy and encourages sustainable mobility (Jabareen, 2006; Farr, 2008). In high density areas, urban buildings lose less energy than detached and semi-detached houses, whereas the exposed walls increase heating demand (Barton, 2000; Rudin & Falk, 1999). Density requires diversity in housing typologies, residents with different background, social class, age and culture, and necessary amenities (Truog, 2006)

Health must be considered in neighbourhood design by enabling all residents to have access to health services (McKenzie, 2004), designing a cycling and pedestrian friendly neighbourhood that increases physical activity and reducing the use of cars. Walking, cycling and physical activities must be encouraged by enhancing the quality of streets (vegetation along streets, high density, public lighting, and aesthetics). Parks must offer the possibility to residents to exercise (Farr 2008).

Connectivity aims at creating a well-connected street network that is safe from traffic and is pedestrian friendly, connectivity also offers different walking options and direct walking routes in order to reduce travel distances (Truog,

2006). Permeability of the neighbourhood not only encourages walkability, but also fosters solar access to houses and to public spaces, reducing the need of heating in winter time (Rudlin & Falk, 1999).

Flexible structures must be designed that responds to the current and future inhabitants' lifestyles and their changing behaviour. Local characteristics must be promoted to reflect the history and culture of the area, and consider place-making and sense of place (Frey, 1999, Rudlin & Falk, 1999).

2.3.3. Satisfaction of human needs

The basic human need is to have a shelter. Therefore, a variety of housing typology must be provided, with affordable prices and flexible layouts, for different income classes, and the needs of the elderly and disabled people must be considered. In turn, this may increase the sense of social cohesion and inclusion (Chiu, 2004; McKenzie, 2004).

Social justice is also achieved through enabling residents to have equal opportunities of mobility, participation in community services and tackling social exclusion.

Safety and security are also important principles of sustainable neighbourhood; they can be achieved through appropriate density, mix of uses, and a well-connected street network that fosters the presence of people in the streets while walking, cycling or using the local facilities (Jabareen, 2006).

Privacy is considered as an important factor of planning sustainable neighbourhood, however, it is mostly considered in Arab countries due to its social and cultural importance, achieving privacy requires a careful design of the street layout, the position of public spaces, and the hierarchy of spaces and housing plots (Ahmed, 2012)

2.3.4. Urban Social sustainability

A socially sustainable neighbourhood consists of a viable urban social unit aims to create a sense of community and belonging, common identity, solidarity, community stability, sense of pride, sense of place and place attachment, safety and security, social interaction, cohesion and inclusion and responds to people's lifestyle (Dempsey et al., 2012; Ghahramanpouri et al., 2013; Hemphill et al., 2004; Vallance et al., 2011; Yiftachael & Hedgcock, 1993). Which can be achieved through, urbanity, attractive public realm, affordable and diverse housing typologies, mix of uses, open public and green areas, and compact urban forms that encourage walkability (Dixon & Woodcraft, 2013).

Community cohesion can be achieved through an upgrade and a reanimation of public spaces, creating an inclusive public realm for social interaction, accessible by different categories of the society. This will also foster social relations and solidarity within a society, and encourage residential stability (Ahmed, 2012; Luederitz et al., 2013). Public open spaces can include parks, restaurants with outdoor seating, green spaces and playing areas.

Residents must participate in decision-making regarding the current and future challenges of their neighbourhood, which will increase their sense of belonging and social sustainability. Awareness about sustainable use of resources and environmental protection among the residents must be raised, through teaching programs, workshops and community activities.

2.3.5. Natural environment

Resilience must be embedded in the design by preparing infrastructures that can protect and adapt the neighbourhood to natural crises to maintain its functionality, for instance the provision of green areas to protect the area from flooding.

Urban green spaces not only encourage biodiversity, but also enhance psychological health of people and provide a comfortable microclimate (e.g. shade and protection from cold wind); they also improve air quality and provide leisure spaces (Ritchie & Thomas; 2008). Green spaces require a careful design with the right density, they should incorporate different areas for different activities and be part of the public realm, whereas large green spaces require maintenance and can be empty and isolated and thus can create safety problems (Barton, 2000)

2.3.6. Economic sustainability

Mixed-use developments must be created with the necessary facilities at walking distance. Opportunities for employment must be increased by creating local jobs. Local economy must be promoted by encouraging local food production, local markets and local craft activities in order to increase the diversity of economic activities in the neighbourhood.

Table2: Sustainable neighbourhood principles and indicators

Sustainable urban metabolism	Energy:	<ul style="list-style-type: none"> • Local ecological energy supply system • Renewable energies • On-site power generation • Local food production
	Transport	<ul style="list-style-type: none"> • Efficient and affordable public transport
	Waste management: Water management	<ul style="list-style-type: none"> • Reduction and conversion of residual waste to energy • Rainwater collection • Storm and flood management • Sewage recycling • Improve water quality
Sustainable built environment	Materials	<ul style="list-style-type: none"> • Recyclable materials • Ecological materials
	Sustainable urban forms	<ul style="list-style-type: none"> • Bioclimatic urban comfort • Adaptable urban form to the lifestyles of current and future residents • Urban design that fosters social interaction • Retain cultural characteristics that reflect residential history and consider place making dynamics of a community
		<ul style="list-style-type: none"> • Distinctiveness of the place • Aesthetic • Cultural built heritage • Density • Mix of uses • Permeability • Liveability • Diversity/Richness • Flexibility/Adaptability • Taming the car • Sustainable mobility (walking and cycling) • Open public spaces • Connectivity
	Land use	<ul style="list-style-type: none"> • Redevelop inefficient structures • Exploit bioclimatic features of the site

Satisfaction of human needs	<ul style="list-style-type: none"> • Affordable housing • Quality of life • Housing diversity • Social diversity • Social interaction • Safety • Design for the elderly and disabled people • Privacy • Local community facilities
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Natural environment	<ul style="list-style-type: none"> • Air quality • Land use • Biodiversity • Integration of nature • Low pollution • Neighbourhood resilience
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Social sustainability	<ul style="list-style-type: none"> • Social cohesiveness • Urban design that fosters social interaction • Access to green spaces • Cultural identity and social diversity • Participation in decision making
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Economic sustainability	<ul style="list-style-type: none"> • Neighbourhood retail, encourage local facilities and community markets • High density and mix of uses • Promote local jobs, local farmers' markets and local craft activities
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3. The drawbacks of Globalised concept of sustainable neighbourhood.

It is important to stress that this paper does not aim to criticise sustainable neighbourhood principles as presented in the literature, but to discuss how they were imported and implemented in different countries without contextualisation, highlighting the fact that no single approach fits everywhere. There are numerous projects and vast literature regarding urban sustainability, which allowed the design and implementation of remarkable and ambitious projects. By reviewing the relevant literature, this paper acknowledges that designing sustainable neighbourhoods in developing countries contributes positively to the development of cities. However, a lack of cross-cultural understanding and implementation of some principles of the concept of sustainable neighbourhood led to several failures. In order to demonstrate this, the implementation of three principles will be analysed, which have been mentioned in the introduction section.

Table 3 shows the case studies used to identify the failures of sustainable neighbourhood concept.

Name of the project	Country	Year	Developer
Bneguerir Green town	Morocco	2012	OCP, Moroccan Phosphates company (private)
Gated communities (Utopia, Qatamiya Height, Beverly Hills, Palm Hills, Jolie-VilleMena Garden City, Dreamland)	Egypt	1990s	Egyptian Private developers
Shaubat Al Wuttah	United Arab Emirates		Al Ain Municipality
Andalucia	Jordan	2012	Taameer Jordan Holdings
Greenland	Jordan	2006	Kurdi Group
Hummar Hills	Jordan		
the <i>Royal Village</i>	Jordan	2006	Bayan Holding Company
Luanda	Angola		Dar el Handasah Shair
Nova Vida	Angola	2016	Aurecon

3. 1. The importance of contextualisation: loss of locality and the degradation of the community

One of the aims of the concept of sustainable neighbourhood is to create vibrant, strong and cohesive communities, in order to do so, necessary facilities need to be locally available in pedestrian friendly neighbourhood, thus the presence of people in the streets while walking, cycling or using the local facilities will enhance the liveliness of the area and promote social interaction. Mix of uses and sustainable mobility are considered as important principles of sustainable neighbourhoods; however, their implementation needs to be critical. The following section demonstrates the negative results following a lack of contextualisation of the two principles.

Before designing a sustainable project, a study on the local context and people's preferences is fundamental in order to avoid generalisation and actions that are not in harmony with people's lifestyle. For instance; the use of local facilities and the sustainable mobility are important elements of a sustainable neighbourhood, however they cannot be implemented in all contexts. To highlight this point, in the past children used to walk to school, which allowed them to meet their friends and benefit from the physical activity of walking; also, their parents can meet on the way or at the school gates which fosters social interaction and creates a local network of mutual support. Nowadays, in some areas, parents drive their children to school, missing out the regular exercise of walking; also, the car drop-offs of children cause a loss of locality, unhealthy lifestyles, empty streets and social fragmentation, and an increase in traffic congestion and greenhouse gas emissions (Barton, 2000). Consequently, the streets are devoid of urban life and people are replaced with cars, which decreases the vitality of the streets and the use of local facilities, whereas people are dependent on their cars and tend to use the facilities near their workplace or in the big shopping malls located outside the city (Rudlin & Falk, 1999). This is also related to the design of the neighbourhood, its consideration for walking and cycling activities, the density, the mix of uses, the type and quality of the facilities available in the area and their distance to the housing units (Rudlin & Falk, 1999).

An example of the negative effects generated by applying uncritically some globalised principles of sustainable neighbourhood concept is the Benguerir green town in Morocco built in 2012 by a US-based consulting firm, with the ambition to design an eco-city, it followed the sustainable development approach outlined within the "ECO-TOOLKIT" LEED that is developed in the US for a global market. The mainstream eco-urbanism approach followed, led to design a town based on a top-down approach, mainly concerned with the global image of the city and the eco certification. The desire to be labelled as sustainable led the developers to design a green town according to the international standards of sustainable neighbourhood. Consequently, the project did not study the lifestyle of local population and designed public spaces that are not adequate to the local context and did not serve the residents eventually. The project also promoted walking and cycling, which are practices believed to be very sustainable within a global idea of sustainable neighbourhood. However, there is no evidence that this proposal was based on social

surveys or social demands, and in a hot arid region like Benguerir, it is unlikely that people would walk or cycle and abandon their cars (Barthel, 2014).

Similarly, in the UAE, the sustainable neighbourhood Shaubat Al Wuttah was assessed by Ahmed (2017) through a matrix of sustainable urban form principles based on the global literature of sustainable urbanism. The design of the neighbourhood incorporates several international standards. The analysis showed how the replication of the globalised principles of sustainable neighbourhood affects negatively the liveliness of the place. The blind conformity with international standards and the mediocre design, led to the inappropriate distribution of facilities. For instance, the primary and secondary schools and the only nursery in the neighbourhood are situated far from most of the houses, the lack of some important facilities like healthcare centres and low level of mix of uses do not encourage residents to walk or cycle or use local services, thus residents prefer to drive and shop outside their neighbourhood. Additionally, the facilities are not located within walking distances and the circulation paths do not offer comfortable environments for walking and cycling, thus, the use of car is predominant, and the lack of appropriate public spaces reduced social interaction significantly (Ahmed, 2017).

3.2 Social exclusion: social injustice and spatial segregation

The aim for low energy consumption, and creating sustainable buildings as part of sustainable neighbourhood paradigm, led to the incorporation of high technology to ensure environmental performance which denied housing and social diversity, social inclusion and equal accessibility, which are also important elements of a sustainable neighbourhood. Other important elements such as safety and security caused a social and spatial segregation through gated communities. This section illustrates the negative impact of bad interpretation of some sustainable neighbourhood principles like energy saving, high performant buildings, safety and security.

Sustainable neighbourhoods promote social equity by creating diverse and inclusive communities, however, the cost of green technologies makes most of the sustainable projects affordable only to wealthy elites (Saiu, 2017), as is the case in North Africa (Barthel, 2014), whereas according to Zhan and de Jong (2017), the literature on Eco-city suggests that “under the banner of green technology, inhabitants are forced to pay higher costs for their use of facilities in eco-cities”. Furthermore, most popular case studies show that sustainable neighbourhoods have been designed using high costly technologies and infrastructures to ensure environmental protection and energy savings, aiming for a better urban environment and quality of life, and they have been criticised for their high cost and social exclusion, because they are not accessible to all social classes (Holden et al., 2015), they penalize the poor who can not afford to buy or rent an apartment within, and unable to access new technologies. In developing countries, workers cannot afford to live in new sustainable neighbourhoods or eco-cities which, in the first place were designed to accommodate thousands of inhabitants, but end up often in unoccupied residential blocks resembling ghost towns (Caprotti, 2014)

The high costs of rental and purchase, are indicators of the specific social class that benefits from this sustainable urban developments, causing a social injustice within the society, between those who enjoy access to eco-innovations and well-designed neighbourhoods with abundant green spaces and mix of uses and those who remain within conventional neighbourhoods (Saiu, 2017). Social and residential segregation based on the level of income could cause a distrust within a society and a decrease in the overall social bond within communities. Such segregation could weaken social cohesion and cause social exclusion, and therefore compromise the creation of socially sustainable society (Myllylä & Kuvaja, 2005; Yigitcanlar et al., 2015).

Benguerir green town was designed in a largely dry area that has no real natural assets or buildings, and is located near a poor town. The design of the green town followed a global “eco-toolkit” aiming for a high level of performance that was assessed with LEED. The aim to achieve high performant buildings led the designers to use costly eco-technologies, rising the prices of the residential units to be accessible only by high-end class excluding other social classes. Ironically, it is doubtful that the in Arab countries, wealthy class will restrict the use of air conditioner and cars due to subsidised energy (Barthel, 2014). Additionally, the green town was not connected to the existing nearby poor town, a lack of social and housing diversity creates spatial and social segregation within the region (Barthel, 2014).

In Africa, Watson (2014) claims that the first eco-cities in sub-Saharan region are “urban fantasies” rather than authentic sustainable projects. They have been constructed in the image of Dubai, Shanghai and Singapore, reflecting green Neo-liberalism. The majority of the urban populations live in poverty and in informal settlements with poor urban services, and these fantasy projects are an extra boost for marginalisation and inequality within societies.

In the Angolan capital Luanda, a range of satellite cities including the well spread Chinese ghost towns have emerged; these cities comprise high end tower blocks of apartments that are worth between US\$ 150,000–200,000 each, whereas most Angolans live on less than US\$ 2 a day. These new urban fantasies are considered as a luxury development, built on a land that was occupied by low social class citizens, which were evicted and relocated, thus pushed to the outskirts of the city, far away from work opportunities and essential urban facilities. Nova Vida is another Luanda Satellite city

designed to accommodate 30,000 people, seems to be like a ghost town because it is financially unaffordable to most Angolans (Watson, 2014).

Several neighborhoods in Amman, Jordan, like Andalusia, Greenland, Hummar Hills and the Royal village represent gated communities and housing enclaves targeting very rich elites, promising them a paradise on earth through their marketing slogans (e.g. “the joy of living”, “provide distinctive homes that will redefine everyday life”), these self-proclaimed sustainable communities are exclusive and lack social and housing diversity (Daher, 2011). Gated communities have also been constructed in Cairo. Denis (2006) describes them as exclusive places to high-end elites, characterized by luxury and private lifestyles; the proliferation of this urban design trend, led to social exclusion and made urban spaces empty and lifeless. Daher (2013) considers gated communities in Arab countries as neoliberal city projects that led to urban geographies of inequality, and caused social displacement within a society. The open public spaces inside these gated communities are privatised and controlled leading to exclusion and spatial/social segregation (Daher, 2013).

3.3. Internationalisation: the desire for a global image and its impact on the local identity and sense of place

This section shows how the desire to contribute to environmental protection, energy performance, and exhibition of sustainability can result in a loss of identity and sense of place, where the main aim of developers is to receive certification from world leader rating systems, through the use of excessive high technology and international architectural styles.

Globalisation has led to a standardisation of architectural styles, building technologies and urban public spaces, which significantly affect the design of cities and neighbourhoods in developing world (Beynon, 2010; Zalloom & Aboutorabi, 2014; Zetter & Watson, 2006). The destruction of the local character and soul of the indigenously designed and developed neighbourhoods makes the residents feel disoriented, as they no longer recognise the place that was once culturally rooted and locally produced, and is now occupied by imported models that are often deficiently adapted to local needs (King 2004). Furthermore, the replication of imported models affect the place identity of urban spaces, interrupting the continuity with locality, and produce a globalised built environment (Zetter & Watson, 2006)

In Morocco, the implementation of the globally recognised sustainable neighbourhood principles to design Benguerir green town was aimed merely at receiving a certification and to be recognised internationally. A consultant in the project stated: “we have no experience of labels in Morocco, so for the moment we just accept them”. This explains the uncertainties and the failures of some objectives of the project (Barthel, 2014).

The gated communities Andalusia, Greenland, Hummar Hills, and the Royal Village in Amman, are an expression of globalized sustainable neighbourhoods, not only they target high-end clientele but also their design attempts to offer an American style way of life. The architecture is a poor understanding of the orient, illustrated through unsophisticated use of oriental architectonic elements attached to buildings representing an oriental vision of the American style, through a single family house with a front yard, a garage and a basketball ring (Daher, 2011).

The identity and sense of place of an area is made of an inclusive public realm that offers opportunities for people to socially interact and strengthen their social cohesion (Ahmed, 2012); also, the physical attributes of the city reflects the area's history.

With the proliferation of eco-technologies and sustainable neighbourhood principles, the replication of international architectural styles and urban designs has led to a degradation in the identity and a sense of a place. People feel disoriented and are dependent on the car, which reduce the degree of social interaction and social cohesion within communities (Chang, 2017)

Built environments have become places where local identity and way of life are obsolete in front of globalisation, Ralph states “the identity of something refers to a persistent sameness and unity which allows that thing to be differentiated from others” (Ralph, 1976). Kevin Lynch (1960) defines the identity of a place as that which creates its individuality and distinction from other places and creates a basis for its recognition as a different entity.

Therefore, designing buildings that all look the same diminishes the identity of a place and its cultural distinctiveness (Wheeler, 2004)

Losing a sense of a place can cause a degradation in the sense of community and the liveability of the area, whereas the absence of people in the streets as mentioned in the previous sections contribute significantly the loss of a sense of place. The interaction between people with similar interests in streets, buildings, public spaces and in other expressions of landscape send messages that serve to unite communities, and give the residents of the place the same identity as the place itself has, and vice versa (Ralph, 1976). The quality of the place is defined and enhanced by the presence of people in the streets, walking, cycling and meeting, it increases social interaction as well as creating a sense of belonging and vitality (Barton, 2000).

4. Conclusion and recommendations

In developing countries, the desire for rapid development led to the importation of foreign models; also, the desire to acquire a label of sustainability led to adopt a design that is not responsive to the region. In other words, neighbourhoods were built and labelled sustainable without meeting all the principles for a sustainable neighbourhood or being contextualised.

The negative impacts of the replication of the globalised concept of sustainable neighbourhood can also be related to the mediocre implementation of sustainability principles, as it was mentioned in previous sections, including the inappropriate density and the lack of certain facilities force residents to use their cars instead of walking. Also, the provision of walking and cycling is not enough if they are not appropriately designed to protect pedestrians from the harsh weather conditions, and if the facilities are not within walking distance. Thus, the negative impacts are not only related to globalisation but also to the way urban sustainability principles are implemented. Whereas providing few shops and offices does not mean mix of uses, some necessary facilities are important for a neighbourhood to be sustainable such as food shops, newsstands, open public spaces, parks, primary and secondary schools, post offices, supermarkets, restaurants and bars (Hagen et al., 2017). Furthermore, these facilities need to be accessible by walking or cycling, in which compact urban form is thought to be appropriate for that, thus increasing the presence of people in public spaces, whereas inclusive public spaces attract all categories of the society giving them equal access, which in turn create cohesive communities and increase social interaction, liveliness, identity and sense of place (Ahmed, 2012).

Another example of poorly interpreted sustainable neighbourhood principles are safety, security and low energy consumption, which resulted in the design of eco-neighbourhoods, affordable only for high-income groups. This results in pushing the poor to the outskirts, away from work opportunities, and a privatisation of public spaces. There are many strategies that can be used to reduce social inequalities and exclusion, for instance the design of affordable bioclimatic houses, and the accessibility of eco-technologies for all through specific policies.

The failures of sustainable projects in developing countries is due to lack of environmental, economic, social and cultural consideration in the design, projects do not seem to be based on social demands or include residents in the decision making process, there is a lack of local environmental policies and regulations, on the other hand excessive dependence on international standards and labels.

Despite some failures of certain sustainable neighbourhood in developing countries, they can be regarded as educational cases for future development. They are positive initiatives that help open up new research agenda about local sustainability and contribute to create responsive urban projects.

Criticism	Recommendations
Inappropriate strategy: “sustainable” projects targeting only environmental performance	Priority should be given to a qualitative philosophy: driven by the natural resources of the territory (“contextual” approach), and tackle social, economic and cultural issues.
The desire for rapid development led to the importation of foreign models	Sustainable projects should emerge from local context and be based on local features
The mediocre implementation of sustainability principles	Contextualisation of sustainable neighbourhood projects according to features of the place, lifestyle and culture of the residents.
Ambiguity and confusion of what “sustainable” means	“sustainable” is an eco-friendly method rather than an eco-bling gadgets or labels, encouraging low water-consumption and energy saving, reinvesting vernacular solutions in a contemporary approach
The inappropriate density and the lack of certain facilities	The provision of necessary facilities such as food shops, newsstands, open public spaces, parks, primary and secondary schools, post offices, supermarkets, restaurants and bars (Hagen et al., 2017) to encourage sustainable mobility and liveliness of the streets.
Dependence on car use	Provide shaded, comfortable, safe and secure paths

Empty and lifeless public spaces	Compact urban form with appropriate density and mix of uses promote the presence of people in the streets. inclusive public spaces promote social cohesion and social interaction, liveliness and sense of place
Gated communities and privatisation of public spaces	Housing and Social diversity strengthen the sense of community and create cohesive communities
Social exclusion	Thinking affordable and low-cost housing: priority given to low-tech suitable design
Lifestyles are not considered in the design process	The design approach should be based on social survey and work to embed a strong diagnosis of the uses of the targeted social groups in order to design spaces that respond to their needs instead of imposing new urban spaces to a different lifestyle

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