

Rapid Urbanization and the Challenge of Sustainable Urban Development in Palestinian Cities

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Abstract—Palestinian cities face the challenges of land scarcity, high population growth rates, rapid urbanization, uneven development and territorial fragmentation. Due to geopolitical constraints and the absence of an effective Palestinian planning institution, urban development in Palestinian cities has not followed any discernable planning scheme. This has led to a number of internal contradictions in the structure of cities, and adversely affected land use, the provision of urban services, and the quality of the living environment.

This paper explores these challenges, and the potential that exists for introducing a more sustainable urban development pattern in Palestinian cities. It assesses alternative development approaches with a particular focus on sustainable development, promoting eco-development imperatives, limiting random urbanization, and meeting present and future challenges, including fulfilling the needs of the people and conserving the scarce land and limited natural resources. This paper concludes by offering conceptual proposals and guidelines for promoting sustainable physical development in Palestinian cities.

Keywords—Palestinian Cities, Rapid urbanization, Sustainable urban development.

I. INTRODUCTION

RAPID urbanization and high population growth rates are problems that face many countries in the developing world. Cities are expanding and urban populations are increasing as more people are moving to the cities looking for job opportunities and better living conditions. In Palestine, cities face a number of additional challenges alongside high population growth rates and rapid urbanization, including land scarcity and territorial fragmentation due to Israel's occupation of the Palestinian territories.

To gain a fuller understanding of the complexities facing Palestinian cities as well as planning in Palestine, it is essential to include the political and socio-economic context created by Israel's occupation, as well as physical development and urbanization processes in Palestine.

The particularity of the Palestinian context relates to its political complexity. As a result of over four decades of occupation, issues relating to planning, urban development and demographics in Palestine are all deeply politicized.

Settler colonialism has created obvious adverse physical, political, economic, social and cultural effects, which have negatively impacted Palestinian society and affected every single aspect of the development process. Understanding the

broader context of Palestinian cities is the starting point in looking to the future and exploring opportunities for more sustainable urban development. In order to be able to introduce sustainable urban development in the Palestinian cities, it is essential to highlight the main challenges facing the Palestinian urban environment and hindering its sustainability.

II. CHALLENGES FACING PALESTINIAN CITIES

In cities, a range of economic, demographic, social, political and natural factors commonly affect the urban environment and shape current and future patterns of development. Moreover, lack of regulations, laws, public awareness, information and professional capacity, as well as institutional gaps, are common factors negatively affecting the local environment, especially in developing countries [1]. Most of these problems can also be found in Palestine; however, the Palestinian case exhibits a unique case that differs from other cases because Palestinians do not have full sovereignty over their land, natural resources or economy. Following is a list of these challenges as well as their present impacts and future consequences.

A. Demographic Growth and Rapid Urbanization

Demographic growth and high population growth rates are one of the main challenges affecting the urban environment in Palestinian cities. The fertility rate in the Palestinian Territories (PT) is estimated to be 4.6, which is among the highest in the world. In 2011, the population of the PT was estimated to be 4.2 million people and expected to reach 4.7 million in 2015, which indicates rapid population growth rates in comparison with other regions in the world [2], [3].

This high population growth rate is accompanied by rapid urbanization, creating growing pressure on land availability, as well as infrastructure and resources, and increasing the need for more job opportunities and housing. As a result, random and uncontrolled developments have expanded in the cities and around the fringes of towns, encroaching on surrounding agricultural land, and putting additional pressure on already inadequate and ailing infrastructure [4], [5].

B. Geo-Political Conflict and Geographical Fragmentation

The political instability and territorial fragmentation caused by Israel's occupation and illegal confiscation of Palestinian land is the main challenge affecting urban development in Palestinian cities. In addition to internal restrictions on the movement of people as well as goods and services, and external restrictions on crossing borders, Israeli policies in the Palestinian Occupied Territories have many physical

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consequences that affect Palestinian urban environment, and in many cases change its original character. Israel has adopted a policy of land confiscation in the Palestinian Territories, using the confiscated land to build colonies, military areas and bypasses. This policy has cut up the Palestinian areas and disturbed their continuity, creating small cantons separated by Israeli colonies and military areas, which makes any national or regional planning impossible. This policy also has other consequences, including limiting and restricting the physical expansion of the Palestinian cities, towns and villages [6].

Moreover, the geographical division of the occupied West Bank into areas A, B, and C as part of the Oslo Accords negotiated between Israel and the PLO in 1993, resulted in Israel retaining full control over area C, which comprises 61% of the West Bank. Palestinians are left with control over areas A and partial control over areas B, which are mainly urban areas surrounded by a small amount of agricultural land. This restriction has negatively impacted the Palestinian physical environment and led to sprawl on agricultural land.

C. Institutional Deficiencies and Outdated Laws and Regulations

Lack of updated laws and regulations, as well as poor inter-sectoral coordination, are also significant problems facing Palestinian planning. Up until now, there is still no clear mandate and no clear distribution of responsibilities among stakeholders in the planning sector, which often results in effort duplication, waste of resources and confusion. The institutional deficiency hinders the development of comprehensive strategies, policies and national plans for future sustainable development, and even if these plans have been developed, implementation and enforcement are still major problems. The legislative and executive authorities do not have sufficient power or the financial resources for enforcement and implementation. Moreover, existing laws and regulations inherited from before are outdated and insufficient to address the principles of sustainable development, and correspond to the actual needs and challenges of the Palestinian people.

Overcoming these constraints is not impossible; however, it needs time and requires a collective effort from governmental institutions, as well as from the community. From the discussion above, it should be evident that some of these constraints will be overcome in the event that a just and lasting settlement be reached between Palestinians and Israel that ends Israel's occupation and restores full Palestinian sovereignty over their land, borders and natural resources. Nevertheless, other constraints call for planning and better

education on the different levels in order to increase institutional capacity and public awareness.

III. HOW CAN THE CONCEPT OF SUSTAINABLE DEVELOPMENT BE DEFINED IN THE CONTEXT OF THE PALESTINIAN CITIES?

Existing literature does not provide one agreed definition for sustainability and sustainable development; therefore, and to establish a common ground, we take sustainable development here to be a process that enhances well-being by means of improvements in economic and social conditions allied to protection and enhancement of environmental quality, while minimizing environmental impacts elsewhere.

According to [7], context is critical when attempting to define what "sustainability" or "sustainable development" means in a planning environment. Furthermore, sustainability may be easier to define in certain contexts than in others, and the indigenous stakeholders may be able to develop the most appropriate definition [8].

The Palestinian context is considered a unique one given – as mentioned above - the distinct political, geographical, economic, and demographic conditions affecting it. However, it still has many common features that can also be found in other contexts.

Methodologically, the derivation of such a definition is based on two main supporting elements: the first are the theoretical debates surrounding the concept of sustainable development. The second is comprehensive knowledge of the state of Palestinian cities and their specific context. The combination of these two elements forms the backbone for challenging and introducing the sustainable development concept in Palestinian cities, (see Fig. 1).

In order to be able to develop the intended definition, it is important to analyze the driving forces affecting the urban environment in the Palestinian cities. According to [9], a number of factors shape the urban environment in cities and influence its existing and future situation. Therefore, the first step was to determine the driving forces affecting the Palestinian urban environment, their current impacts and future consequences.

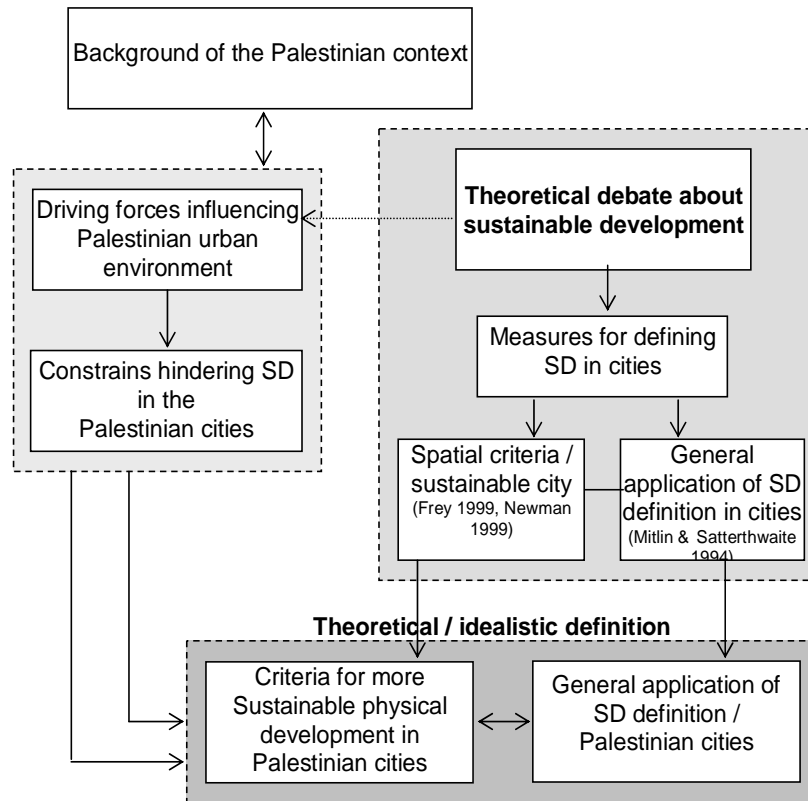


Fig.1 Defining sustainable development in the Palestinian cities. Source, Author with reference to [10]-[12]

The designation of the driving forces is based on a combination between the general driving forces often discussed in planning literature, for instance in [9] and [10], and the analysis of the Palestinian context. The second step was to elaborate a definition which is derived from the theoretical debate of defining sustainable development in cities and corresponds to the challenges of the designated driving forces and needs of the Palestinian community. Thereupon, the approach of [12] in applying the commonly used Brundtland Report's definition of sustainable development in cities was followed and applied to the Palestinian cities [13]. It is important to clarify here that the application of the definition was developed on two levels; a general one overviewed the different aspects of the sustainable development concept and its general application in cities; in addition, a more exhaustive level investigated the prospects of physical sustainability in the Palestinian cities. In turn, after the development of a general conception about what sustainable development can mean in the Palestinian cities, the third step was to see what are the constraints hindering the promotion and achievement of sustainability in Palestine.

IV. ELABORATING A SUSTAINABLE DEVELOPMENT DEFINITION FOR PALESTINIAN CITIES

Nowadays there is an increasing global recognition by

environmentalists, governments and industries of the need to promote and apply the principles of sustainable development to the cities. Relying on the different international attempts to develop sustainable cities programs – like those done by the Organization for Economic and Cultural Development (OECD), the European Community, the UN Habitat programs and the World Bank – a conceptual elaboration of what sustainable development means in the Palestinian cities context has been developed, [14],[15]. The followed methodology is based on the multiple goals of sustainable development as applied to cities' theoretical approach used by [12] in breaking down and applying the Brundtland Commission's commonly used definition of sustainable development in cities. Reference [12] have followed the two main ideas in the Brundtland Commission's definition – meeting the needs of the present, and inter-generational equity in meeting these needs. Subsequently, they have added flesh to the bones by listing and classifying what the basic needs of the present generation can be, and what can be done to guarantee that future generations will have an equal chance to fulfill their own needs. Following the same approach, a conceptual elaboration to define sustainable development in the Palestinian cities has been produced. Nevertheless, the theoretical approach was supported by a factual empirical analysis reflecting the context of the Palestinian cities and the Palestinian people.

A. What Are the Needs of the Palestinian People?

Internationally, there is a common agreement and understanding that shelter, clothing, nutrition, basic education, safety and health care are basic human needs that should be fulfilled and satisfied [16]. However, the type and level of needs in each country and community may vary and range from very fundamental ones, like those mentioned above, to more complementary and luxurious ones. In order to be able to proceed in defining sustainable development in the Palestinian context, the basic needs should be identified; however, an accurate determination of these needs will require more in-depth psychological and socio-economic studies, which are beyond the limitations of this paper. To overcome this obstacle and since the discussion here is on a conceptual level, general information about what are the basic needs of the Palestinian people are attained through, firstly,

using recent statistics produced by the PCBS on the perception of the Palestinian population towards the socio-economic conditions and the basic needs of households and the community; secondly, by extracting indications from the general analysis for the Palestinian context and the driving forces and their impacts and consequences on the Palestinian urban environment.

The different information sources indicate that economic needs, like job opportunities and secure incomes, are on the top of the priorities ladder for the Palestinian people; then come the need for an adequate infrastructure, such as water supply, sewage disposal, roads and transportations networks, health care and schools [17]. The following (Table I) shows the rank of the most important needs for Palestinian households:

TABLE I
PALESTINIAN HOUSEHOLDS' MOST IMPORTANT NEEDS DISTRIBUTED BY REGION, SOURCE: [17]

The Most Important Needs	Gaza Strip %	West Bank %	Palestinian Territories %
Create Jobs	75.7	47.2	58.0
Health Services	3.1	8.7	6.6
Food Assistances	3.9	5.6	4.9
Education Services	1.4	5.2	3.7
Infrastructure Projects	13.9	18.0	16.5
No Need	1.8	12.3	8.3
Don't Know	0.2	0.3	2.0
Total	100.0	100.0	100.0

Nevertheless, it is important to bear in mind that the basic needs of the Palestinian people are not only materialistic and physical ones, but there are also other social, cultural and political needs. For instance, sovereignty, freedom, accessibility, expression and participation which are essential for the well-being and development of the community. It is argued that a society with a welfare deficit is likely to be characterized by unrest, and therefore will not be sustainable [18].

B. Putting It Together

After having developed a general idea about the Palestinian

context and the basic needs of the Palestinian people, it is now possible to proceed with [12] approach and apply the sustainable development definition to the Palestinian cities. As is made clear in the following (Table II), Reference [12] have classified 'the needs of the present' into main 'key' needs, the economic, social, cultural and health needs, as well as political needs. From this they have sub-derived more concrete and specific sub-needs. The same key classification, as a general framework, has been followed in the Palestinian cities context; however, the specific sub-needs are drawn from the discussion above and based on the analysis of the Palestinian context.

TABLE II

APPLICATION OF SUSTAINABLE DEVELOPMENT DEFINITION TO THE PALESTINIAN CITIES BASED ON BRUNDTLAND REPORT AND FOLLOWING MITLIN AND SATTERWAITE APPROACH. SOURCE: ELABORATED BY AUTHOR BASED ON [12]

Application of definition to cities, as introduced by [12]	Application of definition to the Palestinian cities
Meeting the needs of the present...	
<p>Economic needs</p> <ul style="list-style-type: none"> - Access to an adequate livelihood or productive assets - Economic security when unemployed, ill, disabled or unable to secure a livelihood 	<p>Economic needs</p> <p>(At household level):</p> <ul style="list-style-type: none"> - Secure employment that guarantees adequate living and sustenance <p>(At national level):</p> <ul style="list-style-type: none"> - Independent economy - Secure labour market - Balanced (inter-regional, environmental) economic development and growth - Productive economic activities - Free market (import & export)
<p>Social, cultural & health needs</p> <ul style="list-style-type: none"> - Shelter which is healthy, safe, affordable and secure - Provision for piped water, sanitation, drainage, transport, health care, education and child care - Living environment protected from environmental hazards and pollution - Meeting the needs related to people's choice and control, including neighbourhoods which they value and social and cultural priorities which are met - Shelter and services must meet the needs of children and adults - More equitable distribution of income between nations and within nations 	<p>Social, cultural & health needs</p> <ul style="list-style-type: none"> - Affordable housing which is healthy, safe and secure - Development and updating of existing infrastructure (water, sanitation, drainage, transport, education, health care, etc.) - Living environment protected from environmental hazards and pollution - Access to clean water - Protection of people's culture and identity - Provision of housing, services and open spaces must meet the social, cultural, religious and recreational needs of the community - Stable employment and more equitable distribution of income within population
<p>Political needs</p> <ul style="list-style-type: none"> - Freedom to participate in national and local politics - Participation in decisions regarding management and development of one's home and neighbourhood within a broader framework - Respect for civil and political rights and implementation of environmental legislation 	<p>Political needs</p> <ul style="list-style-type: none"> - Independence and freedom from occupation - Freedom to participate in national and local politics - Participation in decisions regarding management and development of one's home and neighbourhood within a broader framework - Respect for civil and political rights - Implementation and enforcement of laws and legislation (including environmental) - Good governance, and effective, powerful and transparent institutions - Sovereignty over land, resources, borders and national economy.

Application of definition to cities, as introduced by [12]	Application of definition to the Palestinian cities
... Without compromising the ability of future generation to meet their own needs	
<p>Minimizing use or waste of non-renewable resources:</p> <ul style="list-style-type: none"> - Minimizing consumption of fossil fuels in housing, commerce, industry and transport <p>Substitute renewable resources where feasible</p> <ul style="list-style-type: none"> - Minimize waste of scarce mineral resources - Protect the cultural, historical and natural assets within cities, which are irreplaceable and thus non-renewable, such as historical districts and natural landscapes 	<p>Minimizing use or waste of non-renewable resources:</p> <ul style="list-style-type: none"> - Minimize the use of land and encourage more compact land-uses - Minimize consumption of fossil fuels in housing, commerce, industry and transport - Minimize the misuse and depletion of agricultural and sensitive land - Substitute renewable resources where feasible - Minimize waste of scarce mineral resources - Reduce the destruction of cultural heritage sites, old cities cores and cultural and natural landscapes (e.g. olive terraces) - Minimize depletion and polluting water resources - Control the destruction and cutting of trees and forests - Protect the biodiversity and indigenous flora and fauna
<p>Sustainable use of finite renewable resources:</p> <ul style="list-style-type: none"> - Use the fresh water resources sustainably (by promoting recycling and re-use) - Keep to a sustainable ecological footprint in terms of land area on which city-based producers and consumers draw for agricultural and forest products and biomass fuels 	<p>Sustainable use of finite renewable resources:</p> <ul style="list-style-type: none"> - Use the fresh water resources sustainably (by promoting recycling and re-use); and protection of ground water aquifers and springs, the main sources of consumed water - Minimize overgrazing - Encourage sustainable tourism in natural areas - Encourage more water-efficient micro- irrigation technologies - Keep to a sustainable ecological footprint in terms of land area on which city-based producers and consumers draw for agricultural and forest products and biomass fuels
<p>Biodegradable wastes not overtaxing capacities of renewable sinks:</p> <ul style="list-style-type: none"> - Example, capacity of a river to break down biodegradable wastes without ecological degradation 	<p>Biodegradable wastes not overtaxing capacities of renewable sinks:</p> <ul style="list-style-type: none"> - Control the disposal and leakage of biodegradable wastes into groundwater, rivers, ravines and valleys
<p>Non-biodegradable wastes/emissions not overtaxing (finite) capacity of local and global sinks to absorb and dilute them without adverse effects:</p> <ul style="list-style-type: none"> - Such as, persistent pesticides, greenhouse gases and stratospheric ozone-depleting chemicals 	<p>Non-biodegradable wastes/emissions not overtaxing (finite) capacity of local and global sinks to absorb and dilute them without adverse effects:</p> <ul style="list-style-type: none"> - Control and minimize the use of agro- chemicals (fertilizers and pesticides) - Control disposal of solid wastes and provide proper municipal landfills - Control the waste-water treatment plants and the sludge in landfills to limit leaching to groundwater and soil - Upgrade and develop the existing sewer system and treatment plants - Restrict and control the polluting industries

The previous application of the definition of sustainable development to the Palestinian cities covers the wide, inter-related dimensions of the concept. Moreover, it sets up a general framework for an optimal situation that secures inter- and intra-generational equity, as well as economic prosperity and development, without depleting the natural resources and jeopardizing the living environment in the country. Moreover, Sustainable development in Palestinian cities means developing the ability to fulfill basic human needs and improve living conditions for the people, in spite of the Israeli Occupation and its practices.

V. PROMOTING SUSTAINABLE URBAN DEVELOPMENT IN THE PALESTINIAN CITIES

Moving towards sustainable development in the Palestinian cities presents a tremendous challenge, where a great variety of dimensions has to be integrated and balanced in order to

steer the development process in the direction of sustainability. This paper has illustrated the different challenges facing the Palestinian cities, and discussed what sustainable development means in the context of the Palestinian cities. In order to move forward towards sustainability, important structural changes are needed to the way in which the Palestinian institutions and society manage their economic, social and environmental affairs. Thus, the success of these changes greatly depends on three main determinants:

- First, the institutional factors (structure, organization, management, modes of cooperation, etc.)
 - Second, the attitude and behaviour of citizens (life-style, mobility patterns, environmental awareness, etc.)
 - Third, the urban structure and morphology (population density, urban form, transportation modes, etc.).
- Therefore, there is a need for a radical shift, a new way of

thinking and new tools to bend the existing urban developments and planning system towards a more sustainable approach. There is also a need to find practical and efficient mechanisms which can improve the basis of planning judgments at both the technical and the political levels. Correspondingly, achieving sustainable development is therefore essentially a task of transforming governance [19].

Consequently, from the analysis of the Palestinian context, it became clear that promoting sustainable urban development in the Palestinian cities requires substantive reforms and rearrangements based on the comprehensive restructuring of the planning institutions, development of a national sustainable development strategy, modification of planning policies and regulations, the adoption of a more integrated planning approach, the development of new mechanisms for implementation and monitoring, as well as the involvement of the private sector and local communities. These are practical steps with tangible actions which have to be pursued in order to effect a systematic change towards sustainability.

Therefore, in order to have an efficient sustainable development strategy which guides developments towards more sustainable city development, this strategy should be practically reflected in:

- Legislation (policies and regulations),
- Mechanism (tools and instruments),
- Integration (cross sectoral and cross regional),
- Enforcement (implementation), and
- Commitment (continuity), which operate on the national as well as on the regional and local levels.

For instance, policies addressing the sustainable development of cities should cover multiple fields like urban rehabilitation, urban land use, urban transport systems, urban energy management, urban architecture and conservation policy, and urban cultural policy. In due course, measurable indicators, including minimum performance levels and critical threshold levels, will then have to be defined, estimated and used as forecasting tools to improve awareness of sustainable development issues in cities. Subsequently, local authorities will have to share their tasks with all other actors in the urban space, including the private sector, in imposing and maintaining these critical thresholds [20]. Eventually, an effective national sustainable development strategy should be based on timely action, and should recognize and reconcile necessary trade-offs, while constantly seeking win-win outcomes.

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