

Communication between society and green areas and their sustainability

By

Hussein Hani Mohammed

Regional Planning the Center for University of Baghdad

E,mail: Hussainhani93@gmail.com

Ali Hussein Muhammad

Regional Planning the Center for University of Baghdad

E,mail: Dr.a.aljanabi@iurp.uobaghdad.edu.iq

Abstract

The importance of the research lies in the fact that it presents a study of one of the modern topics in the field of planning, to which we find a broad global trend, and that the human relationship with the natural environment and his desire to interact and communicate with it, was and still is one of the main reasons that prompted him to pay attention to it and its availability near his home, and based on these considerations, the designers tried Providing open outdoor spaces in residential neighborhoods that contribute to meeting the residents' needs and their desire to communicate with nature and interact with each other through activities in them. Therefore, the research aims to clarify the concept of sustainability and sustainable development in all its dimensions, strategies, principles, classifications, and concepts related to green cities and ways to achieve them. Therefore, the research included two main axes, the first axis concerned with discussing the general lines of sustainability, and the second axis relates to the concept of green cities Thus, the research will deal with the most important general vocabulary and their relationship with each other(Sustainability, sustainable development, green cities, green system, and connectivity in the green system

Introduction

Over the past few decades, the world has witnessed a clear change in the map of urban existence, represented by the increase in the number of cities' population, the expansion of their geographical area, the spread of lead road networks and electric power generation stations over natural spaces, causing many problems within cities and even on the outskirts of those cities. These changes have drawn the features of another world, a world that is racing with itself in the field of energy consumption and raw materials, forgetting the rights of future generations to a decent and fair life. Until the reaction and revolt of nature appeared, which began to send successive signals about its upcoming unprecedented anger at man and his lack of respect for its formative laws. Among the most important of these signs is the phenomenon of the increasing rise in the temperature of the atmospheric ocean and the associated phenomena of increased snow melting and a rise in sea levels, in addition to the increase in the phenomenon of desertification, and the increase in the number of storms, hurricanes and other different climatic phenomena that took place in the past century and the beginnings of the current century. These natural monuments helped some international agencies realize the danger threatening the human future. This realization called for the emergence of signs of adopting the principles of sustainability in human interaction with nature. And considering cities as the largest and most influential human products in nature, the emphasis came on changing the way they were established in the first place. Cities consist of complex systems in which human factors interact with affected natural factors. And when human activity and desires prevail, this leads to the depletion of natural energies faster than their ability to renew and regenerate.

Hence the research problem the rapid developments that cities are witnessing have negative effects on society. Current studies indicate that more than 54% of the world's population will live in urban areas, in addition to the population increase that will result in urban problems. Environmental, economic, social. It is accompanied by a weakness in human awareness in dealing with cities, which places a burden on cities that exceeds their absorptive capacity, and thus a decline in the quality of life. We see the need here for the responsibility of city planners in order to reduce these negative effects and move towards more sustainable cities for current and future generations.

Research hypothesis

The transition to green cities depends on creating an integrated urban structure based on a number of sustainability strategies.

Connectivity

Communication is the key to increasing the power and influence of the Green Network. Its elements represent the foundation or the ground on which the existence of any green network is based, by confirming that this structure is more effective and tender in providing services and benefits when it is integrated with or part of a continuous network across landscapes. And the desired result is to increase the rate of communication. The link between the components of the green network is to exploit as much as possible of the natural properties offered by these components. This is done through physical communication that works to give its maximum effect. And the creation of a network that encourages the movement of biodiversity and wildlife, as well as linking places with pedestrian paths and movement or sustainable bicycles. (Bull, 2013, p6). Where the components of the green network, whether land or water bodies, are planned in the form of a continuous and continuous system of elements, while avoiding the occurrence of interruption between these components as much as possible. The degree of connectivity in the network that connects all its components depends on the existence of rings or circles. The rings, circles and passages work side by side in distributing movement, whether it is for pedestrians or for the movement of animals between its parts in a balanced and equal manner. To create a green network at the level of landscapes, this requires identifying and studying the physical elements by means of which the connection and continuity takes place. (Barker, 1997, p.53).

Communication is classified according to its characteristics as follows

First: natural communication

Natural connectivity is the most important natural linking tool in the green network. It is represented by the natural elements that surround cities (Such as green belts and forest and blue linear paths of all kinds) Which is the main natural connecting artery in the urban and semi-urban area and organizes urban parks, which are in neighborhoods and residential areas, as well as on many other natural elements. (Sharma, 2014, p. 23).

Second: manufactured communication

These communicative elements are man-made which serve as traffic corridors and links for vehicles, pedestrians, etc. in suburban and denser urban areas, these multipurpose linear physical elements can be classified as, Examples include used and disused railway lines, manufactured aqueducts, and other man-made linear elements (Sharma, 2014, p. 25). And these manufactured linear elements function: as green paths or specific roads in the city designed according to the required planning level in an efficient manner that connects a mixture of land uses, and a range of open urban spaces, In addition, open areas in a way that provides high accessibility to the population instead of the usual means that are harmful to health and the environment in general, which encourages the community to use this type of transportation. It is: walking, cycling and other

sustainable means(Feldskou , 2012, p.3). It is clear from the foregoing that the feature of connectivity represents the backbone on which the structure and composition of the green network relies, as it involves achieving interdependence and continuity between the existing stable elements through two important axes: such as natural connectivity (Forest linear trails, blue and green belts) and manufactured (Used and neglected railway lines, manufactured water canals, and others)

The importance of communication and social interaction

It is noted that social processes are closely related to communication. Some scholars mention that communication is the axis around which these processes revolve. And the human need to communicate with others is a necessary need to continue interacting with others, and without him, it leads to isolation among the population. It is the basis of relationships between individuals, and this need increases in times when society is undergoing rapid transformations. Whereas, the human need for communication and interaction with others is basic and necessary for a person to interact with others, and without it, a person cannot form social relations with other residents of the urban environment and the continuity of life in this environment. (Shenzhen planning studio,2009, p4-5). Social interaction is one of the social needs that a person needs. Maslow divided human needs according to their importance into physical needs, safety and reassurance needs, Social needs, the need for a sense of self, the need for self-actualization, cognitive and aesthetic needs. What we notice from Maslow's classification of the hierarchy of human needs is that the need for belonging, love, social needs, and the existence of relationships that bind him to other individuals are among the important needs. Some of which can be achieved by the built environment and appropriate housing for a sense of place and safety, as shown in Figure (1-1). (alsayd,2017, p12)

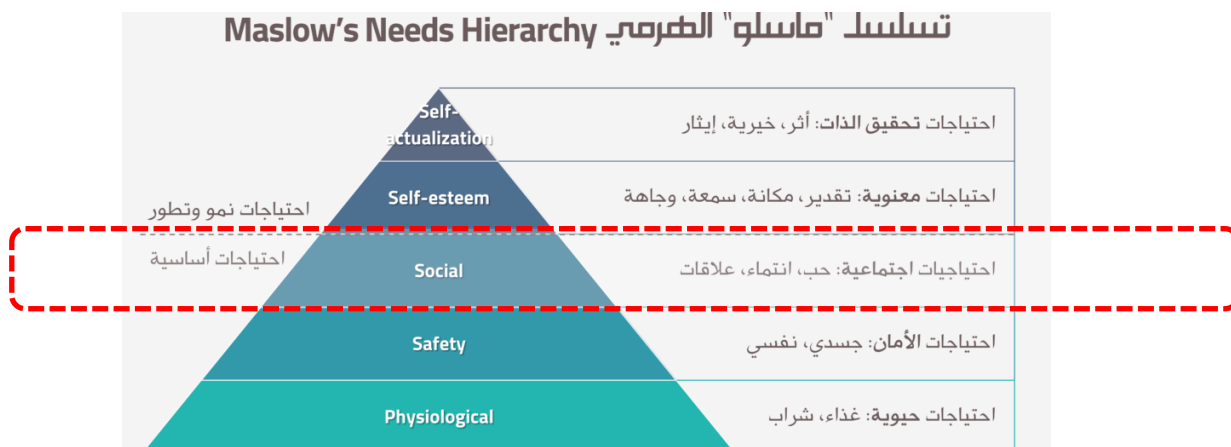


Figure (1-1) human needs in Maslow's hierarchy

Source: Researcher based on (Asma Mahmoud Mostafa Al-Sayed ,The interactive relationship between Maslow's needs and their impact on creativity ,Journal of the Faculty of Education in Mansour2017)

Relationship of communication with social relations

Sociologists linked the concept of communication to the fact that it organizes and shapes social relations, and some of them see it as a mechanism for social organization. Sociologists linked the concept of communication to the fact that it organizes and shapes social relations, and some of them see it as a mechanism for social organization. While others associated it with symbol and reference, in addition to being a way to convey ideas and meanings, Communication represents a link between individuals and society, and forms and structures social relations between residents. The social relations that are formed through communication and social interaction between individuals are affected by some things. As the mutual awareness between the parties of the society

is considered an important factor in the formation of social relations, and also that the more complex the society, the more diverse and multiplicity of the interactive relations, as well as when the members of the community in the urban environment are at one cultural level, then the interaction process is easier. Social relationships are of two types, primary and secondary. For primary relationships, they are characterized by privacy and continuity between individuals, while secondary relationships are characterized by generality and instability, and these relationships become clear as society expands. (Ali Madanipour, 2010 , p. 12-13) From the foregoing, we find that communication is the basis for the formation and structuring of social relations. In addition, communication represents the process of transferring and exchanging meanings between individuals, in addition to transferring information and skills, and works within a specific system affected by the culture of society. The process of interaction is the effect of one individual on another, and individuals usually influence each other as a result of their thinking. In fact, interaction aims to influence the power of thought on the opposite side, so the meaning of interaction in communication is the sender's ability to influence the future's thinking and directions based on logical and mental thinking. Interaction is an important process that guides the process of communication between the residents and is necessary to strengthen social relations between the residents. Therefore, communication is the basis for forming relationships between users of the urban environment and in continuous interaction.

Scholars have called social relations the name "communicative relations". Thus, contact or communication between people works as a structure for social relations between residents within the urban environment, as the spatial proximity that brings together these individuals has a great impact in pushing residents to interact with each other within the urban environment and its spaces. Factors affecting social interaction and the formation of communicative relations in the urban environment Social interaction is affected by three basic factors that give the possibility of strengthening or weakening social relations between the population in the urban environment, and these factors are the first / the person (the inhabitant) and the community, the second / the environment (the place) and the city, and the third / the time period (time) for interaction and communication, as shown in the figure (1-2)

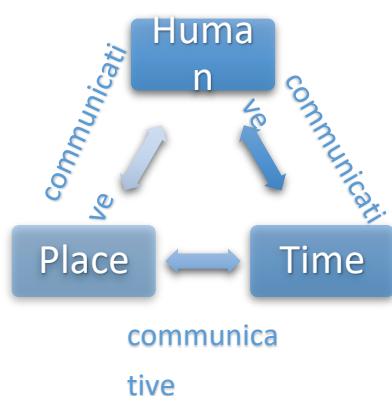


Figure (1-2) shows the communicative relationship between the factors influencing the urban environment

Sustainability

The origin of the term sustainability Sustainable to ecology Sustainability was used to express the formation and development of motor systems (dynamic). Which are subject - as a result of their movement - to structural changes that lead to a change in their properties, elements and the relationships of these elements to each other. In the developmental concept, the term sustainability was used to express the nature of the relationship between economics and ecology, given that the two sciences are derived from the same Greek origin, as each begins with a root. Eco (Ghoneim ' sustainable development, p23) This concept stems from a humanistic view that calls for concern for the future of man, and then preserving the environment that gives continuity to humanity. Sustainability refers to the quality of attribution or enhancement within the context of the human

environment, with the aim of achieving ecological sustainability, which jointly contributes to enhancing life in a way that allows others to meet their needs in the present and the future. (Journal of the second Jordanian Engineering Conference ‘1998·p273). Sustainability is not only one of the most important discoveries that took place in the twenty-first century, but also one of its most important challenges. It is a simplified idea to ensure a better quality of life for everyone now and for future generations, and this becomes possible when human systems are designed to work in a similar way to natural systems. Natural systems are characterized as being balanced and self-renewing so that there is no waste or loss. It also has the characteristic of circulation, as the materials act as nutrients that circulate through the system, and they are systems that are well adapted to local conditions. (<http://www.Sustainability and Design. Com>).

The concept of sustainability was mentioned at the World Conference on Development and the Environment when the Norwegian Minister was leading the conference (Groltarlen Brendtland 1987) It is in it that sustainability is formulated (It is meeting people's needs in the present without affecting future generations to meet their future needs) (Oxford university press, Network, P.4).

During the conference, some definitions of sustainability were approved, as follows

Sustain: Support that extends life, continue or keep.

Sustenance: It is the process of giving life or sustenance, food and nourishment.

Sustainable: It is an adjective that describes something that has been given support, comfort, food, or sustenance, and thus that thing has survived continuously or has been prolonged his age (A. Kremers, 2001,p,3).

Sustainability means the integration of natural systems with human patterns to give continuity and uniqueness to making a place (Katz, 1994, pp26-28).

It "means achieving the balance that allows economic prosperity and social justice to be achieved during the coming generations," It is also the development that provides real improvements to human life and at the same time preserves the vitality and diversification of the land through generations. It includes a set of aesthetic, environmental, social, political and ethical values by using one's imagination and technical knowledge to contribute to a major aspect of the profession of designing and building in a manner consistent with our environment. Encouraging the use of local natural materials and resources, avoiding the use of resources and materials harmful to the environment, and taking care of the cycle of matter in nature. strengthening the infrastructure, preserving and rehabilitating buildings, It represents the maximum exploitation of the development economy that preserves the quality and performance of natural resources. (Goodland and Ledee , 1987, p 36). It is an expression of a simple idea to ensure a better quality of human life in the present and for future generations, and this idea becomes possible when human systems are designed to work more in a manner similar to natural systems that are balanced and self-renewing, as there is no waste. It also requires taking appropriate changes to improve the quality of urban life, depending on the system that gives positive changes to obtain the best results. (Eisgruber , 1993, pp 4-8).

The historical development of the idea of sustainability

The concept of sustainability was historically formulated in the origins of forestry, where not harvesting from forests meant more than the forest yields on new growth, the word (Nachhaltigkeit) (German term for sustainability) It was first used with this meaning in 1731, which means caring for and preserving natural resources for the future, lasting, There may have been permanent views on the relationship between man and nature, some of which stress adaptation and harmony and another which sees nature as something to be conquered While this latter view may

be somewhat dominant in Western civilization at least in recent centuries (Kuhlman, Switzerland, Issue 2, 2010, p3437). For these reasons and as early as the United Nations Conference on the Human Environment that discussed progress towards environmental protection held in 1972, Some members of the international community in Stockholm announced progress in eradicating poverty around the world. In 1980 the International Union for Conservation of Nature adopted it International Union for the A conservation strategy is a scientist who advocates the sustainable use of species and ecosystems. In 1984, the United Nations established a group of members consisting of 22 people from both developing and developed countries. And I asked them to define the long-term environmental strategies of the international community. In 1987, the World Conference on Environment and Development published a report entitled (Our Common Future), often known as the Portland Report. The report used the term sustainable development widely and defined it as development that meets the needs of the present without compromising the ability of future generations. In order to meet their own needs, the report said that the term sustainable development must be placed firmly in political life in the arena of international development thought. It has been translated into more than 24 languages. Discuss the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in June 1992, the need to find a new way forward, Which can integrate economic growth and development with respect for the environment. They were representatives of 108 countries present at the conference. Produced Three major agreements are: Agenda 21, a plan of action for a sustainable global development; The Rio Declaration on Environment and Development, a series of principles outlining the rights and responsibilities of states, Defining our common future Several environmental trends threaten to fundamentally change the planet, and the many species on it, including the human race. Environmental degradation identified in the report includes: (1) rapid loss of productivity of dry lands being converted to desert, (2) rapid loss of forests, (3) global warming caused by the increase in greenhouse gases, (4) loss of the atmospheric protective ozone shield and (5) pollution Surface and ground water) (Lemons ,1995, p1).

Dimensions of Sustainability

Sustainability has three basic dimensions, as shown in Figure (1-3).

Economic dimensions

Economic sustainability refers to increasing the resources that are available locally without depleting them or causing environmental degradation. ([http://www.SWDesert Sustainability Project, Deming. Com](http://www.SWDesertSustainabilityProject.com)). creating new markets and opportunities for sales growth, as well as cost reduction through efficient improvements and reductions in energy and raw materials involved in building construction. That is, in the sense of lowering the cost through improving efficiency, reducing energy use, and introducing natural raw materials.

Environmental dimensions

The idea of environmental sustainability is to leave the earth better for future generations than it currently exists, and by this definition, human activity is only environmentally sustainable when it can be accomplished or remain indefinitely without depleting natural resources or spoiling the natural environment. Resource consumption will be less. Consumables will be made entirely (100%) from post-consumer recycled materials or from renewable sources (harvested without harming nature and without depleting or consuming the resource base) Recycling or recycling of waste by (100%). Energy conservation will be completely renewable and non-polluting (solar thermal and electric power, wind power, biomass, etc.).

(<http://www.SustainableDesign.com>)

Reducing waste or loss and reducing outputs towards the environment

Reducing the impact on human health.

Use of renewable raw materials.

Removal of toxic substances.

As for the environmental dimensions So you mean (Maintenance of natural capital , keeping natural capital intact)

Preserving nature mainly and intact, and a sound environmental system that is structurally and functionally accomplished. Protecting nature guarantees the main sustainability commodities of resources and raw materials from human needs and the preservation of nature from waste, Waste issuance is carried within the capacity of absorbing the environment without spoiling it (Goodland / Handmer 1992,p,4). Environmental sustainability can include design aspects that are smaller than the scale of urban space at the level of a specific location, such as:

Construction Sustainable.

Environmental Architecture.

Ecological Building.

Green Buildings.

Technology Sustainable.

Sustainable design.

The idea of environmental sustainability is the paradox of the Earth being created for people to look good and fit for future generations. By definition, it is clear to us that human activities are sustainable when they are accomplished in an indefinite manner without consuming natural resources or spoiling the natural environment through:

Consuming as few resources as possible.

Recycling of materials after they have been used up or consumption of renewable resources.

Waste recycling, especially solid materials by 100%.

Save energy and shed the renewable ones.

Social dimensions:

Social sustainability means (maintenance and protection of social and human capital).

Social (or moral) capital includes:

Social participation, a healthy civil society, equal rights, social cohesion, cultural identity, diversification, endurance, and it also includes moral matters such as fellowship, patience, brotherhood, discipline, pluralism, honesty, and laws. As for human capital, it is represented by investments in: education, nutrition, and health. Social capital requires the maintenance and renewal of common values in communities, religious and social groups. Social influences can be perceived internally for a specific organization or externally, as the internal factors focus on what is happening inside the organization or the building, as these influences affect the quality of work life, the rate of production, work processes, creativity, and labor relations, while the external factors focus on the public domain.

environmental sustainability

social sustainability

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economic system integration

1943
cultural identity

Life diversification

grant power

Figure (1-3) *dimensions of sustainability.*

From the foregoing, it can be concluded that the goal of sustainability is mainly to preserve society and people, that is, to preserve society and people in a sound manner. The main meaning of society is that it contains or includes identity, heritage, equality, social cohesion, diversity, endurance, pluralism, authenticity, order.

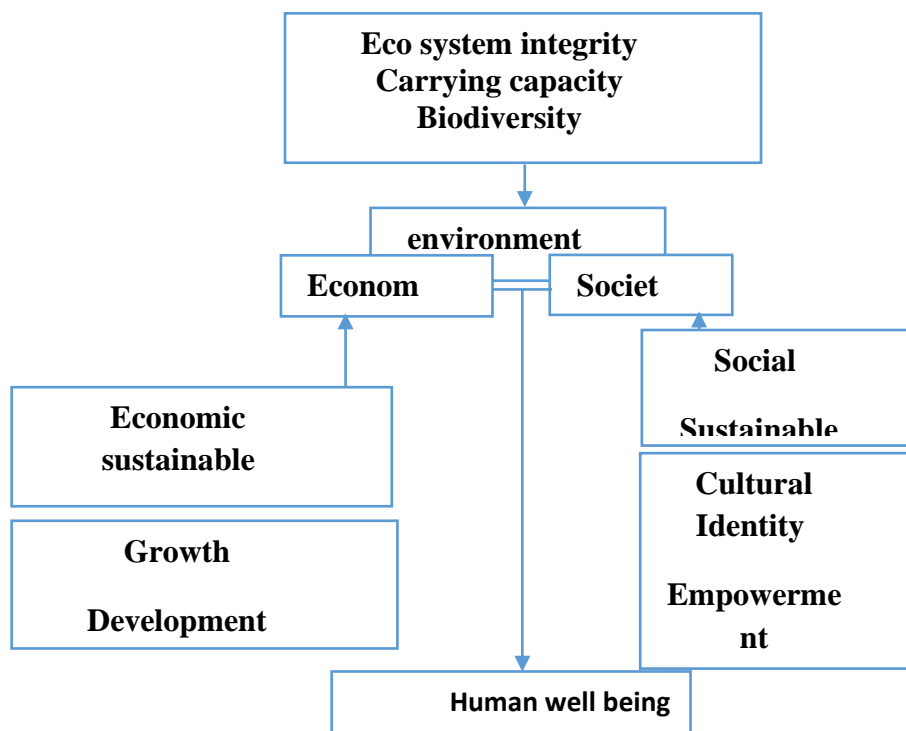


Figure (1-4) *The human position in the three dimensions of sustainability*
 Source Sam, 2002

Society believes that growth today should not be achieved at the expense of tomorrow. And that health and vitality must be long-term (social, economic, cultural, environmental), that

the deliberate effort to ensure social development is not only the improvement of the local economy but includes the local environment and quality of life. The development that links the environment, economy and society in fairness and that is used to meet the needs of the present without compromising generations. (Seattle indicators sustainable 1995)

Sustainable development

The roots of sustainable development are numerous and branch out and go back to 1974 AD, at the United Nations Conference or even further to the year 1962 in the United Nations Declaration on Natural Resources, Economic Development and Urban Environmental Issues and beyond at a conference. (Our Common Future - Portland Conference) (Wheeler, 2004, p.41). The emergence of sustainable development was associated with environmental pollution incidents due to factories and the occurrence of deaths due to gases and waste from factories, and depending on what happened in London in December (1952 AD) and in Los Angeles for the years (1962, 1964 and 1965 AD) and St. Louis (1969 AD) when thousands of citizens died due to Breathing difficulty, (Waziri, 2007, p.20) And as we have mentioned above from the proposals of writers, philosophers, environmental scientists and architects in the field of industrialization and attempts to adopt green, sustainable, organic and in line with nature designs, where a number of definitions of the term and concept of sustainable development emerged indicating its essence against the issue of industries polluting the environment and the recruitment of bodies and International regulations and conferences towards the principles of environmentally clean urban and urban design and planning, as shown in (Table 1-3). In the agenda of the 21st century (Agenda 21) There were some axes related to the urban dimensions and the major reference to the reality of attempts to activate sustainable development in the actions of countries, especially Paragraph (C), which states: (Encouraging sustainable land use, planning, management, development of national lands, financial development system, planning for land use with sound solutions for land use and adopting strategies Comprehensive use and encourage awareness of the problems of informal settlements in areas subject to planning, 1994). (almandel, 2008, p.5) As for the definitions closest to the concept, it was put forward by the Portland Committee, where reference was made to sustainable development with several definitions, including: It is a term that refers to development (economic, social and environmental) that meets the needs of the present without compromising the ability of future generations to meet their own needs. The term sustainable development involves setting up a social and economic system that guarantees the continuity and permanence of a set of goals over generations. These goals include, for example, a real increase in income, raising educational standards, improving public health, and raising the standard of life in general. (WCED, 1987, P:43) Sustainable development is concerned with the development of society where the costs of development are not passed on to future generations, or at least an attempt to compensate for these costs in advance. (Pearce, 1993, p:13) Thus, it can be said that sustainable development seeks to improve the quality of human life, but not at the expense of the environment, and in its general sense it does not deviate from being a process of using natural resources in a rational manner so that this use of resources does not exceed their natural rates of renewal, especially in the case of non-renewable resources, so rationalization must be made In using them (because they are economically expensive) and providing wider and less expensive options of alternative energies to use them in an attempt to keep them for the longest possible period of time. (ghanim wabw zant, 2010, p.26-25) From the foregoing, it is clear to us that sustainable development is that development process that is based on the idea of sustainability as a methodology, and achieves development goals by taking into account the goals and characteristics of sustainability, and ensures the achievement of those goals and the continuity of their effects until subsequent generations, as it is applicable in various scales, whether global, regional or Urban and even the scale of individual buildings, as it is called, for

example, when it is adopted for application in the urban context, sustainable urban development.

Sustainable Cities Policies

There is a wide range of planning concepts that can lead to sustainable urban development, but here we will focus on three approaches and associated policies:

Compact cities.

Healthy cities.

Green cities

The compact city tends towards the mixed use of land and enhances economic and financial efficiency while reducing negative environmental impacts. A healthy city leads to environmental quality from the user's point of view, while a green city works to integrate human and social aspects in ecological processes. (alanibariu 12-32 ,2011)

Green cities

What is meant by green cities or environmentally friendly or sustainable cities is one of the recent trends that are concerned with the relationship between buildings and the environment, or cities free of polluting elements, as this appears in reducing the impact of the building on the environment in addition to reducing construction and operational costs, which must meet the needs of the present without ignoring the right Future generations in their needs for a clean environment free of pollutants that affect the natural growth of man and to reduce, as much as possible, the devastating effects on the environment and natural wildlife that may affect the needs of future generations, which will have a great impact on the air pollution surrounding cities as a result of unhealthy emissions due to Unclean energy use.(hamuwd,2011,p3).

At the Second World Conference on the Environment of Cities 2010, I recognized

Green cities are a global concept that summarizes in its content environmental concepts and practices such as (green buildings, sustainable transportation, afforestation, renewable energy, green economy), which in turn achieve environmental balance in contemporary cities, as a result of what cities are witnessing today in terms of urban and industrial sprawl that has led to increased emissions of pollutants. air, increased waste production, lack of vegetation cover, disruption of biodiversity and other negative effects that threaten life on Earth. (The Second Dubai International Conference, 2011)

Green Cities Goals

Preserving as much as possible the available natural environment and increasing green spaces to be a lung and outlet for residential areas. Access to environmentally friendly cities that do not affect the health of the population. Work within an integrated system between governments and individuals to eliminate pollutants, with the goal of a clean environment.

The importance of working with green cities policy

- In the urban field: the availability of a good urban environment, the creation of a distinctive local urban character for the city through the urban environmental design of the city, the provision of open areas for the city's residents, the determination of building density at appropriate rates, the diversification of land uses and the availability of good means of transportation.

- In the field of architecture: Designing smart buildings based on technology for the comfort and well-being of its users in a way that suits their requirements, using local building materials and highlighting a local character specific to the city, while preserving the heritage and valuable buildings.

- In the economic field: the city's reliance on a self-economic base, the availability of job opportunities for its residents with appropriate wages, and the attraction of capital and investments that precede the environment.

- In the social field: Achieving population density at appropriate rates, availability of various educational services suitable for all age groups, achieving social justice for the city's citizens, through fair distribution of resources, services and job opportunities, and supporting the spirit of belonging to the city, while preserving the social and cultural characteristics of the city's residents.

- In the environmental field: preserving the local natural resources through the use of these resources in a rational manner that ensures that they are not depleted for the sake of future generations, raising the efficiency of their use, taking into account their absorptive capacity, taking into account local environmental systems and compatibility with them, achieving the minimum level of polluted outputs, and restoring Waste recycling, and the use of renewable energy in buildings and services.

- In the administrative field: the availability of independence and the foundations of good governance for the city, in order to achieve the standards of transparency, accountability, social justice, popular participation and combating corruption. (allaham,2011,p-3p4)

Thus, the economic, social and environmental indicators are not separate, but rather they are all linked to the indicators of sustainable cities. Therefore, sustainability requires a comprehensive vision and multidimensional indicators that clarify the relationship between the economic, social, cultural aspects, etc., and for sustainable cities and sustainable development, these indicators must set the path. It needs a specialized administrative structure that collects and analyzes information in the field of development and converts the information into a set of indicators that help decision-makers in setting policies that achieve sustainable development for the city through the establishment of urban observatories in the city, then the region and then the national level.

Planning and design characteristics of green cities:

These principles can be identified as follows

- A - The degree of limiting sprawl and growth (consolidation): the expansion of cities should be through site-specific controls for the purposes of future growth, effective planning of spatial variables, the use of mechanisms to locate urban growth sites, containing growth and the possibility of its occurrence, which helps the city to maintain compact size and avoid encroaching on Farmland.
- B - Achieving self-sufficiency: that the city is not only consuming, but also productive through the use of labor and energy.
- C- Achieving local autonomy: the ability of individuals and communities to shape and shape their environment through their needs and aspirations to achieve belonging and a sense of place, as well as the ability to manage their local environment.
- D - Achieving diversity and social mixing: the availability of safe housing and mixed and economically integrated housing.

- E - The possibility of applying diversity of uses: adjusting the priorities of land uses to form solid cities with a variety of vital uses.
- F - The possibility of applying the use of public transport: encouraging the use of public transport to increase access to services without relying on private transport, and then reduce congestion and pollution and reduce energy consumption and give priority to pedestrians, then bicycles, then public transport,
- G - The degree of vehicular traffic spread: Dispersal Of Vehicular Traffic Reducing the volumes of traffic and vehicles deployed for transportation as a result of the strength of the public transport system with the design of roads to avoid congestion within urban areas.
- H- Access To Services: Access To Services & Facilities The hierarchy of service centers at the various levels of city formation from the local level to the level of the city center with a high degree of accessibility and ease of movement helps increase freedom of choice and achieve self-sufficiency at the local level.
- I - The possibility of accessing green open areas: such as parks and natural areas, in addition to the use of hierarchical bases in the distribution of open spaces and green areas in the city, starting from the residential complex and the residential neighborhood to the largest level, while supporting local agricultural projects and green urban projects.
- J - Environmental impact (environmental conditions): Complete harmony and harmony with nature and the environment must be achieved, respected and confirmed so that an environment free of pollution, noise, congestion and crime is achieved, and polluted and deteriorating urban environments and polluting uses are also identified unless they are in accordance with the standard standards of the environment.
- K- Degree of Adaptability: Degree Of Adaptability The importance of flexibility in shaping the structure of the city to adapt to environmental, economic and social changes.
- L - The clarity of the image of the city as a whole: Image ability of The City As a whole
The importance of clarity of the image of the city as a whole on the micro level, as the city is a place to practice work and benefit from the cultural and recreational facilities, and it is necessary to achieve the aesthetic aspect and the clear visual image through the visual composition of the city's structure and compatibility with the urban formation model.
- M- Image ability of parts of the city: Image ability of Part Of The City
The image of the parts of the city must be clear at the micro level by using the hierarchy in the structure of the city, the distribution of services, open areas and spaces, and the distinction of neighborhoods by the concentration of uses.
- N - Sense of place and centrality: Sense of Place & Centrality

The sense of centrality and place differs within the city due to its urban formation and distance from the center. The sense of centrality is stronger in the central area of the city than in the outskirts of the city.

According to the above, the sustainable city is:

1. In its efficient use of resources.
2. That there be protection for natural diversity.
3. Meeting needs locally as much as possible.
4. There should be a job opportunity for every individual.
5. There shall be protection for health.
6. Easy access to facilities, services and goods.
7. That residents have the knowledge and information they need to play a role in the city.

8. To have access to education for all.
9. Places of rest and entertainment should be available in all residential areas.
10. There should be open and thoughtful spaces that combine beauty and utility.

There are a number of characteristics of good indicators that can be mentioned ([http://www. Sustainable measures .com](http://www.Sustainable measures .com)).

The ability to meet future needs: the community should not use natural resources at a rate faster than its renewal, it must be used at a rate that allows for a review of current needs with the ability to meet the future needs of future generations to achieve sustainable urban development.

- A- Long-term vision: Sustainability is a long-term goal, and therefore we need long-term indicators within the range of 25-50 years.
- B - The existence of interdependence: the traditional indicators are of a limited nature on society, as they focus on increasing job opportunities without considering any details such as the type of existing businesses and whether these are long-term businesses or not? Is it healthy or not? Hence an unequal society emerges.
- C- Suitable for the city: Sustainability varies from one city to another according to the economic, social and cultural conditions... It also differs from urban to rural areas, and therefore each city has appropriate indicators for it.
- D - Understandable for the city: Indicators that are understood by the population must be developed so that community members can know their responsibilities and the extent of their participation in achieving sustainable urban development.
- E - Used by the city: If the indicators are not used by the city, they will not have any effect. The use of indicators makes it possible to know the change in the behavior of individuals so that it can be harnessed to cause a positive impact to achieve sustainable development.

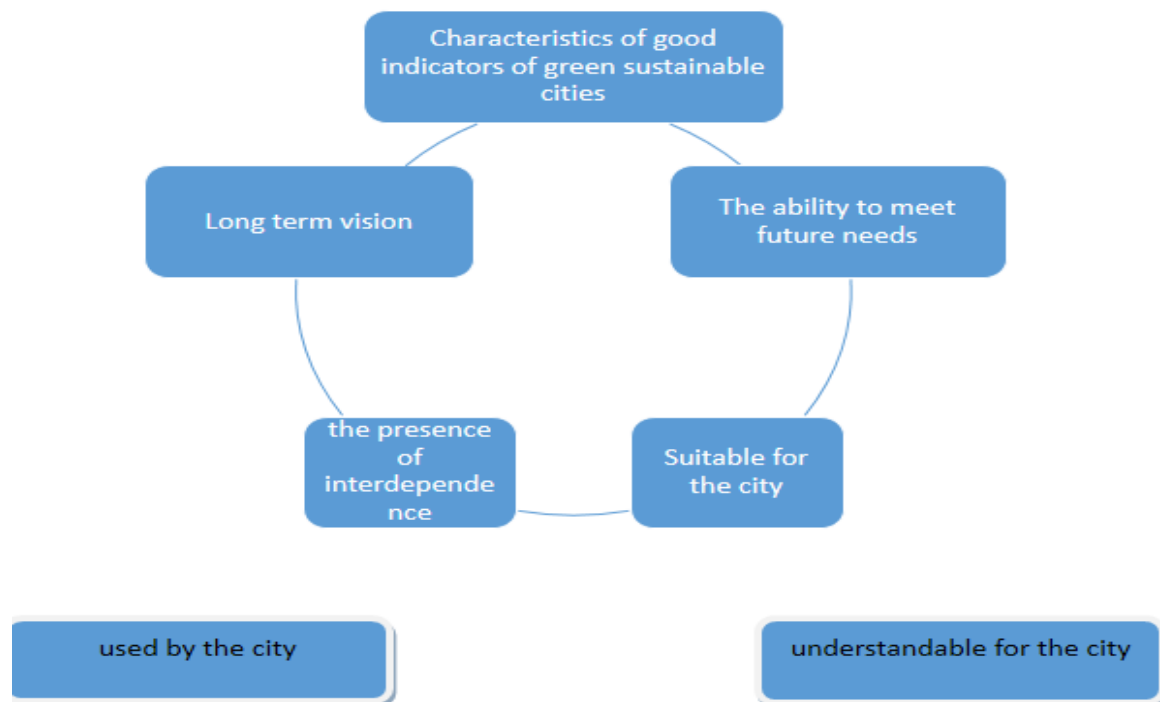


Figure (1-5) *Demonstrates the characteristics of good indicators of green sustainable cities*

Ways to achieve a green city

Site selection, integration of urban fabric planning, building orientation, energy and environmentally sustainable city planning, open spaces and green areas, road and street network, building materials, resource conservation, sustainable transportation.

Basic principles of working on green cities:

- 1- Using building materials that do not pollute the surrounding environment.
- 2- Using clean renewable energy and encouraging its use.
- 3- Use of foodstuffs that are not harmful to health or the environment.
- 4- Follow a scientific method to get rid of waste.
- 5- Gradually starting to develop means of transportation and communications using clean energy that does not pollute the surrounding atmosphere.
- 6- Rationalizing the consumption of natural resources and preserving them from depletion.
- 7 - Elimination of about 40% of pollutants.
- 8- Not to use excessive pesticides. (hamuwd,2011, p4)

Green sustainable city strategies

The sustainable city strategies are built on the basis of the five principles of sustainable development:

Precautionary Principle: The lack of scientific certainty should not be an excuse to delay acting to prevent or reduce potential harm.

Principle of complementarity: Environmental requirements should be integrated in all areas of policy making

The polluter pays principle: The cost of pollution must be borne by those responsible for causing it.

The precautionary measure principle: Activities that are supposed to cause serious damage to natural or urban capital should not have the support of society.

The principle of participation: The participation of the public in decision-making must be on the widest scale.

An action plan to implement the green sustainable city strategy Energy

Waste Reduction, Urban Design
Urban Nature, Transportation
Environmental Health, Water

Conclusions

1. The research concluded that the ways to transform into green cities depend mainly on (mixed use, high intensity of uses, sustainable design strategies, energy efficiency, and sustainable management of waste, water, and urban environment).
2. Sustainability in its general sense is still a broad concept and understanding it requires a lot of research and specialized studies.

3. Sustainability can be achieved through various planning mechanisms and tools, including the method of applying the mixed use of land.
4. The negligence and non-compliance with the laws and the lack of follow-up by the municipalities led to many environmental problems, including the exacerbation of the accumulation of waste in the squares inside the alleys randomly instead of being green areas, and this led to the formation of a polluted environment that helps the spread of germs and diseases in it.
5. To achieve the principles of sustainable development for cities at the local level, the principle of participation by community members must take a large part up to the stage of participation in decision-making and implementation.
6. Sustainable development has three economic, social and environmental aspects, and it is thus based on many mechanisms to achieve such development in those areas, and the participation of members of society in this process takes a large and important place.

Recommendations

1. The need to focus on studying and analyzing the concept of sustainability in the light of the factors specific to the different regions, and to develop general and detailed features of the ideas and mechanisms of sustainability affecting each geographical region independently.
2. Studying and revealing all aspects of sustainability and the possible planning tools to achieve them at various scales.
3. Emphasizing the role of the legislative and executive authorities in adopting the ideas of sustainability and the mechanisms for achieving them, because of this great impact that contributes to avoiding mistakes and preventing them from happening again in successive development plans.
4. Focusing when preparing projects on increasing the percentage of mixed use of land, especially when preparing detailed plans for future urban expansions, because of this's great impact in providing more spaces and housing units, and creating job opportunities for various segments and other implications related to protecting and improving the environment, as well as Improving and beautifying the urban environment of the city as a whole.
5. Conducting a comprehensive study of sustainability indicators and setting special standards for sustainability to work with.
6. The need to activate a law in Iraq, hold the negligent accountable, and pay fines by people who negatively affect the environment.

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