



Lest the green disappear



Trees and parks in Egypt's cities
from an environmental justice perspective



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Introduction

In recent years, the clearing of trees has frequently accompanied the construction and development of utilities and infrastructure. This approach fails to consider the environmental function of trees and green spaces, especially in cities, as an intuitive, low-cost, and effective means to address air and noise pollution, provide shade, and cool the streets amid record temperature increases in recent decades.

In cities, particularly Greater Cairo, cutting down the trees on the shoulders and median strips of roadways has become the first step taken when streets are widened to improve traffic flow and provide parking for cars. This simplistic algorithmic relationship, used to take the greatest advantage of the few meters of pavement and trees lining every street, is not grounded in any engineering study or advance planning that integrates environmental and social factors and which could have led us to radical solutions to the problems of congestion. Those problems have not been—and will not be—solved in the long term by a simple calculation that increases the number of meters given over to cars and vehicles at the expense of pedestrians. Nor have trees in rural areas been spared from development projects. At least thousands of trees were uprooted during

the implementation of the canal lining and drainage project absent the announcement of any studies assessing the environmental impact of tree removal or a clear methodology for removal and the minimization of trees cut down.

The priority in centralized development policies has been the rapid completion of construction works, and this accelerated approach has resulted in the marginalization of stakeholders in areas under development. In the Heliopolis neighborhood, for example, where the construction of bridges and road expansion required the removal of trees and the razing of about 90 acres of green space, there was no community dialogue on which to base planning decisions. Neighborhood administrations also saw green spaces as an investment opportunity. Space under flyovers and bridges was often commercially exploited, and several green spaces were “developed” by leasing parts of public parks or gardens out to restaurants and cafes, as in Abdin Square.¹

At the same time, the Ministry of Environment says that increasing vehicle speed and building flyovers reduces traffic idling times in streets, thus reducing carbon pollution loads,² as if tree

1 Sayyed al-Khalfawi (2022), Abdin Square As You've Never Seen It Before (Arabic), Youm7.

2 BBC Arabic (2022), Interview with Egyptian environment minister in advance of COP27 (Arabic).

removal is wholly isolated from the context of sustainable development that takes into account the environmental dimension in an integrated manner, including the reduction of temperatures, heat islands, and various air pollutants in concrete cities, not only the reduction of carbon emissions. Even if these areas are replanted, cutting down mature trees is a waste and a loss of decades of care and maintenance. Mature trees also absorb more carbon dioxide and provide more shade for pedestrians than the trees that are slated to be planted.

Trees and public spaces are not yet a major component of public health and environmental protection policies in Egypt. There are sporadic efforts and initiatives, such as the Ministry of Environment's initiative to plant trees in the most polluted areas, the "Prepare for Green" initiative, and the ministry's unsuccessful attempts to build a green belt around Greater Cairo. These initiatives are nevertheless conceived of as discrete government interventions separate from public policies; they are unsustainable and incomplete unless integrated into specific health objectives and a specific environment, with coordination between multiple actors in the neighborhoods and the ministries that manage parks, streetside trees, or waterways and forests.

Although the government has included the goal of preserving and expanding green spaces in

almost all environmental reports, most recently the National Climate Change Strategy 2050 and the first report on nationally determined contributions, it does not specify a per capita target for public green spaces; the establishment of open parks of 5–20 acres has been named as a target in new cities only.

At the present moment, as the central government is ostensibly developing various sector strategies to achieve sustainable development and adapt to the impacts of climate change, while hosting the climate conference (COP 27), the government should set well-defined, realistic targets for per capita green space in cities and invest in tree planting and the provision of green spaces as feasible, low-cost measures to reduce temperatures and air pollution in cities.

This paper offers frequently asked questions and answers about trees and public spaces in an attempt to shed light on issues such as the number of trees, the proportions of green areas, and their importance to the environment and the health of Egyptians, and to clarify aspects of legal protection for trees, government plans, and the roles of various entities in the management of green spaces.

1. Why are trees and green spaces important?³

Given record temperature increases in recent decades, trees are not a luxury. In cities, trees and green spaces are an obvious, low-cost solution that is effective in addressing problems of air and noise pollution, shading and cooling city streets, and providing a buffer against dust storms, not to mention the psychological impact of green spaces and trees. They are also home to birds and a source of biodiversity within our concrete jungles. In the countryside, trees on the banks of waterways play a central role in the daily work of farmers. Their shade is a place to eat and rest from the afternoon sun, a warehouse for tools and equipment, and shelter for animals. Trees are often a source of wood and fruit as well.

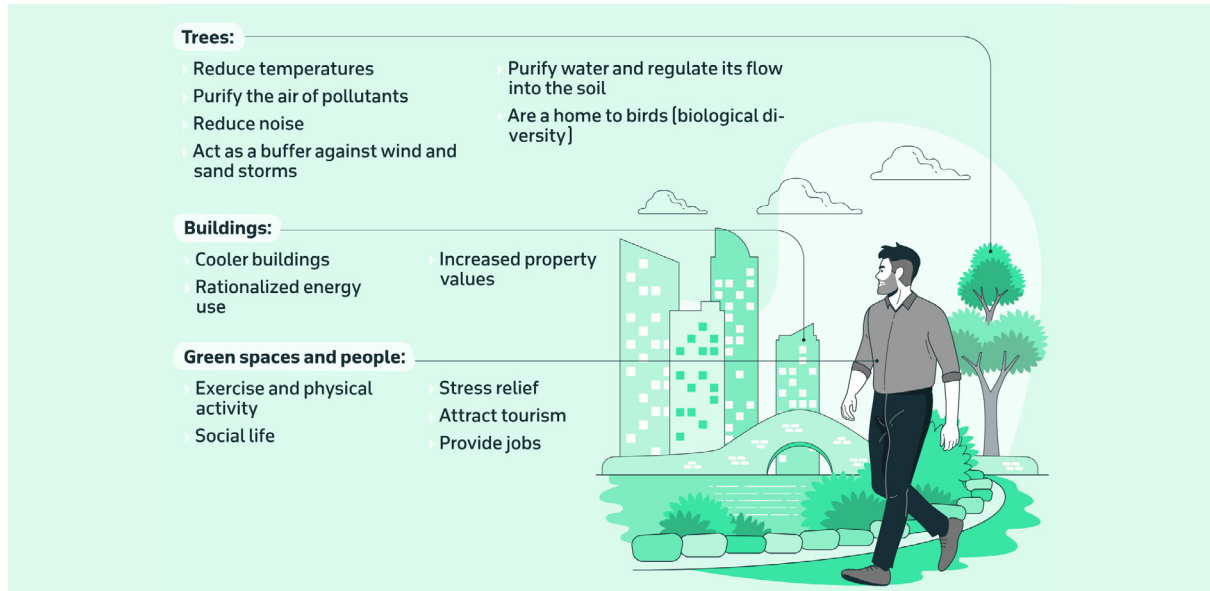
The diverse, natural benefits of trees include:

- Trees cool the air and can lower the temperature by 2–8°C, which helps rationalize the use of air conditioners, thus reducing our energy consumption and spending on the electricity bill, while also saving the burning of fuel in power plants, which means rationalizing the use of our natural resources.

³ Food and Agriculture Organization, Benefits of Urban Trees.

- Trees purify the air of pollutants by absorbing polluting gases from the air and ozone such as carbon monoxide, nitrogen, and sulfur oxides. Their leaves filter out fine particulate matter in the air, such as car exhaust fumes and dust, by trapping these particulates.
- Mature trees absorb 150 kg of carbon dioxide annually, helping to mitigate the effects of climate change.
- Tree planting as part of city planning can raise property values by up to 20 percent and attract tourism and businesses.
- Mature trees purify water and regulate its flow; they can intercept more than 15,000 liters of water annually, relieving pressure on local drainage networks.
- Green spaces in cities offer better opportunities for physical activity, social life, and stress reduction, as green views reduce hypertension and stress.
- Trees lower street noise levels within cities and act as buffers for wind and dust storms around them.
- Trees are home to birds and a source of food for them, increasing biodiversity within cities.

Figure 1: The importance of trees and green spaces in our lives



Source: United Nations Development Program⁴

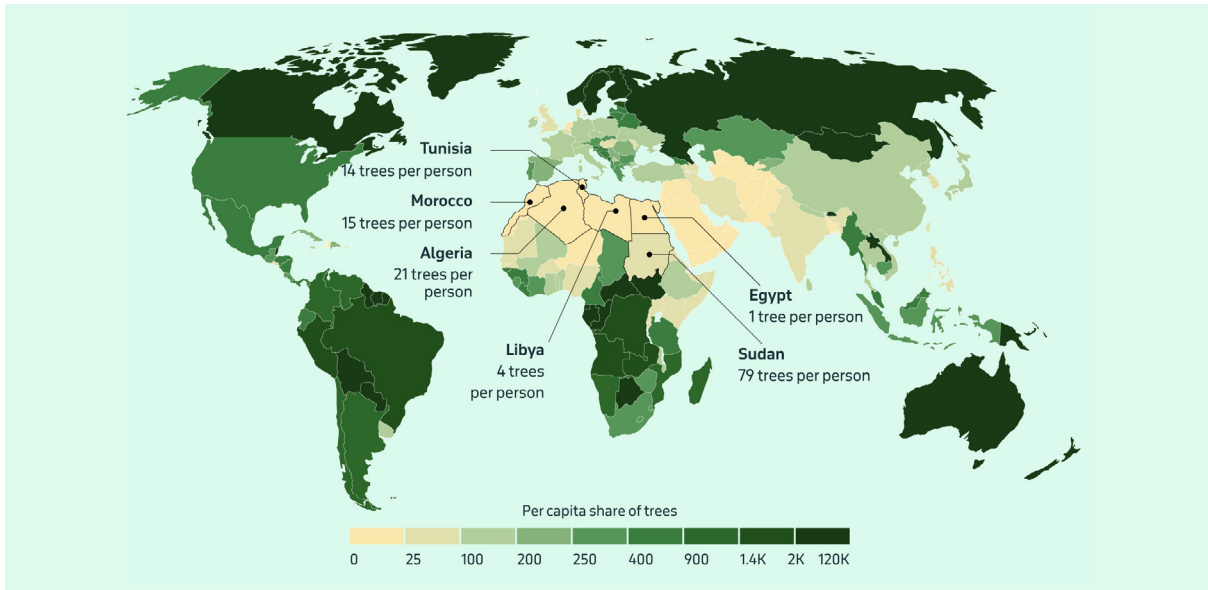
4 UNDP. Smart, Sustainable and Resilient Cities: The Power of Nature-Based Solutions.

2. What is the per capita share of trees in Egypt?

Egypt has only one tree per person, the lowest per capita share in North Africa. Tree density reached 69 trees per square kilometer in 2015, according to the Washington Post, reporting on a scientific study of global tree density in Nature.⁵

⁵ T.W. Crowther, H.B. Glick, K.R. Covey et al. (2015), Mapping Tree Density at a Global Scale, Nature; Chris Mooney (2015), The World's 3 Trillion Trees, Mapped, Washington Post.

Figure 2: Per capita share of trees



Source: Nature magazine

3. What is the per capita share of green space in Egypt?

The 2020 Annual Bulletin of Public Utilities Statistics at the City and Neighborhood Council Level, issued by the Central Agency for Public Mobilization and Statistics (CAPMAS), indicates that total green space, parks and gardens, including zoos and fish gardens, in 28 Egyptian governorates, covers about 17,000 km² (Appendix 1):

- On average, Egyptians enjoy just 17 cm of green space per capita.
- The largest per capita share of green space was 161 cm, in the governorate of South Sinai, while per capita share dropped to just 2 cm in the Qalyoubiya, Gharbiya, Fayyoun, Qena, and Matrouh governorates.
- In the urban governorates of Cairo, Alexandria, Suez, and Port Said, average per capita share was about 39 cm of green space.
- The average per capita share of green space in the Delta, Upper Egypt, and border governorates was 15.5, 10.7, and 66.6 cm respectively.

4. What neighborhoods are the most harmed by heat waves and need more green spaces?

A scientific paper by two researchers at Cairo University, which looked at which neighborhoods in Cairo most needed to increase the green space to mitigate the impact of heat waves, found that all neighborhoods in Cairo lack a minimum of green cover. After studying extreme temperatures, population density, the most vulnerable groups (population over 65, children under 5 years), and poverty levels in each neighborhood, the researchers concluded that 13 of 46 districts in Cairo were at high or very high risk of heat wave exposure.⁶

⁶ Mohsen Aboulnaqa and Mona Mostafa (2019), Mitigating Heat Islands Effect in Mega Cities through Districts' Prioritisation for Urban Green Coverage Applications: Cairo – Egypt as a Case Study, Renewable Energy and Environmental Sustainability.

5. What are the government's targets for increased green space?

In 2008, per capita green space in Greater Cairo stood at 1.5 meters and about 30 cm within the Ring Road—one of the lowest ratios in the world—compared to 12–18 m per capita globally, according to Cairo Vision 2050, issued in 2008.⁷

However, at the time of the launch of the strategic plan for Greater Cairo, it appeared that per capita green space in Greater Cairo was up to 3 m, at a time when the population was only 15.8 million.⁸

The following table shows Egyptian standards and targets for green areas in Egyptian cities, based on the foundations and standards of urban harmony for open areas and green spaces, approved by the Supreme Council for Planning and Urban Development, in accordance with Law 119/2008 and its implementing regulations.⁹

⁷ General Organization for Physical Planning, Presentation of Cairo Future Vision 2050.

⁸ Ministry of Housing (2012), Greater Cairo Urban Development Strategy, Part I: Future Vision and Strategic Directions.

⁹ National Organization for Urban Harmony (2010), Foundations and Standards of Urban Harmony for Open and Green Areas (Arabic), Ministry of Culture.

Table 1: Planning ratios for open areas in Egypt

Type of settlement	Ratio of open areas in cities and the Nile Valley		Ratio of open areas in desert regions		Current status m ² /capita
	Minimum space (m ²) per capita	Targeted ratio of m ² /capita	Minimum space m ² per capita	Targeted ratio of m ² /capita	
Existing cities	7	10	5	7	-0.5 1.5
New cities	15	20	10	15	-7.0 13
Villages (more than 50 feddans)	5	10	5	10	
Villages (less than 50 feddans)	3	5	3	5	

Source: National Organization for Urban Harmony, Ministry of Culture

6. Does the law protect the right to green space?

The Egyptian legislator has established a legal basis for the right to green spaces, and their expansion and development in the country, as necessary to improve the quality of life and public health. The Egyptian constitution stipulates that the role of the state is not limited to the protection of green spaces in urban areas, but also extends to the development and enlargement of this space. Article 45 of the constitution states: “The state shall protect its seas, coasts, lakes, waterways, and natural reserves. It is prohibited to encroach on or pollute them and to use them in a manner incompatible with their nature. The right of every citizen to enjoy them is guaranteed. The state shall guarantee the protection and development of green space in urban areas; the preservation of plant, animal, and fish resources and the protection of those vulnerable to extinction or threat; and the welfare of animals, all as regulated by law.” Article 46 states, “Every person has the right to a sound, healthy environment, and protecting it is a national duty. The state shall take measures necessary to preserve it and ensure no harm to it, and to ensure a rational use of natural resources so as to achieve sustainable development and guarantee the rights of future generations thereto.”

The Egyptian environment law of 1994 shows concern with green spaces, stating in Article 27: “Every neighborhood and village shall be designated at least 1,000 m of state land for the establishment of a nursery for the production of trees, provided that the products of these nurseries shall be made available to individuals and agencies at cost. The competent administrative authorities to which these nurseries are subordinate shall prepare guidelines for the cultivation and care of these trees, and the Environmental Affairs Agency shall contribute to financing the establishment of these nurseries.” This article also ensures that there are numerous green spaces in every neighborhood and village, which helps to increase such spaces within cities.

These provisions affirm that the law guarantees the right to green space, and its development and expansion, within cities.

Encroachment on trees is criminalized

In the Penal Code, the Egyptian legislator has given great importance to the protection of trees and green spaces in cities by criminalizing encroachment on green spaces. Article 162 of the Penal Code states, “Anyone who deliberately demolishes or damages any building, public prop-

erty, or facility intended for public benefit, or decorative works of memorial or artistic value, and anyone who cuts or damages trees planted in places intended for worship or in the streets, parks, markets, or public squares, shall be punished by imprisonment and a fine of no less than LE100 and no more than LE500.”

Moreover, Article 367 of the Penal Code provides for imprisonment with labor for:

1. Anyone who cuts or damages an unharvested crop, a sapling or tree, or other plants.
2. Anyone who damages a sown field or sows in a field a harmful grass or plant.
3. Anyone who uproots one or more trees or any other plant, or prunes or strips it to kill it, and anyone who damages a tree graft.

Offenders may be placed under police probation for a minimum of one year and a maximum of two years.

When it is necessary to cut down trees or raze public parks, whether for the development of green spaces and public parks or any other project, the environment law requires an environmental impact assessment study to be conducted, which in turn necessitates two public hearings as a form of community participation.

7. How does Egyptian law regulate the treatment of trees? Which bodies are tasked with issuing permits to cut down trees?

The law has long established a legal protection for trees and a mechanism for dealing with them. Like any living organism, trees need constant maintenance in order to grow strong and live as long as possible; they may grow sick or diseased and die, which may result in great damage, as for example when a large, mature tree falls on passersby and harms them or damages property. Such justifications may also be falsely invoked to remove more trees in cities.

In view of the seriousness of this matter, the law regulates procedures for tree cutting in necessary cases, the permits required, and the authorities competent to issue such permits, and it sets a penalty for violating these procedures.

Here we review the nature of existing public parks to understand the authority competent to issue permits for their development.

a. Specialized parks

Such parks are subordinate to the governorate. For example, the project to establish specialized parks of the governorate of Cairo, which includes 31 parks with a total area of 249 feddans, 8 qirats, and 10 sahms all over the governorate, fall under the jurisdiction of the governorate¹⁰ in follow-up, supervision, oversight, and permitting related to park development and tree cutting.

b. Distinguished parks

These are parks subordinate to the Cairo Cleaning and Beautification Authority. The Authority supervises the follow-up and care of trees and green areas in some 300 parks, in coordination with various administrative departments and units in the Cairo governorate.¹¹

The Cairo Cleaning and Beautification Authority (or any of the equivalent administrative authorities in different governorates) oversees the care of public parks and the planting trees in

¹⁰ Cairo governorate, Specialized Parks Project (Arabic).

¹¹ Cairo governorate, Distinguished Parks in the Cairo Governorate 2018 (Arabic).

squares, streets, and roads,¹² but it does not have the authority to issue permits to cut down trees. It is only authorized to care for public parks and trees and plant trees in public squares and main streets, for distinguished, specialized, and other public parks located in Greater Cairo.

In addition, each smaller local unit (neighborhood, or city or district council) has a forestry management department whose task is to care for and prune (for solely aesthetic purposes) the trees located within the local unit. This department issues all licenses for the cutting and removal of trees after reviewing all other conditions and regulations, in cooperation with the Cairo Cleaning and Beautification Authority (or the equivalent body in each governorate). In the case of very old trees, the forestry management department at the Ministry of Environment is consulted.

c. Historic (heritage) parks and gardens

Such spaces are one of the urban legacies in which Egypt abounds. They are an integral part of the local heritage and represents a type of science and knowledge that reflects the culture of

¹² The authority was established pursuant to Decree 284/1983. Article 2 of the decree sets forth the competencies of the authority, including the care of public parks and the planting of trees on streets.

society.¹³ Heritage parks, which include the Zoological Gardens in Giza, the Fish Garden, and the Orman Garden, are defined as parks established before the middle of the twentieth century and representing an asset of the urban heritage.¹⁴

Law 144/2006 on the regulation of buildings and installations not vulnerable to collapse and the preservation of architectural heritage regulates the treatment of heritage areas and sites. Article 2 of the law states, “It is prohibited to license the demolition or expansion of buildings and facilities of a distinguished architectural style related to national history or a historical personality or that represent a historical era or that are considered tourist attractions, without prejudice to legally entitled compensation. The demolition or attempted demolition of other buildings and installations may be carried out only with a license issued in accordance with the provisions of this law. The prime minister shall issue a decree containing the standards and specifications of the buildings and facilities referred to in the first paragraph, based on the proposal of the minis-

13 Hossam Fathi and Yasmin Nabil (2019), Standards of Identification and Registration of Historic Parks in Egypt (Arabic), Journal of Urban Research, Faculty of Urban and Regional Planning, Cairo University.

14 This definition is found in the Guide to the Foundations and Standards of Urban Harmony for Heritage Buildings and Areas of Exceptional Value (2010).

ter of culture, in agreement with the competent ministers and after the approval of the cabinet. These buildings and installations shall be designated a decree of the prime minister...”

Prime Ministerial Decree 2276/2006 was subsequently issued to define the standards and specifications of the buildings and facilities referenced in Article 2 of Law 144/2006. Historic (heritage) gardens were among the “buildings and facilities of a distinguished architectural style”:

These include buildings or facilities, complexes or standalone, or parks that are distinguished by their artistic value, building materials, or construction methods and to which one of the following standards and specifications apply:

- a. It was constructed in accordance with architectural concepts or a school.
- b. It reflects the characteristics of a particular historical era.
- c. Its ornamentation is rare and unique and has value.
- d. It is a spontaneous structure expressive of a local environment.

Under the law, the competent authority to issue permits for the development of historic gardens or the removal of trees in them is the committee to inventory the buildings and facilities defined

in Article 1 of the implementing regulations of Law 144/2006.¹⁵

d. Parks located on public properties related to water resources

Law 147/2021 on water resources and irrigation, issued in October 2021, states in Article 8, “Trees and palms that have been planted or are planted on public properties related to water resources and irrigation may not be disposed of by cutting or uprooting except with a license from the competent public administration.¹⁶ This administration may institute a system for planting trees and palms on these properties and determine the reasons and methods for their removal in accordance with the rules set forth in the implementing regulations.”

¹⁵ Article 1 of the implementing regulations also states, “The committee to inventory the buildings and facilities covered by a decree of the competent governor shall undertake to inventory buildings and facilities of a distinguished architectural style related to national history or a historical personality or that represent a historical era or that are considered tourist attractions, in order to determine their conformity with the standards and specifications of buildings and facilities covered by a decree of the prime minister. In accomplishing its tasks, the committee may review the documentary information and the databases on these buildings held by relevant bodies.”

¹⁶ The definition of “competent public administration” given by the law is a public administration with relevance to water resources and their facilities in the ministry’s sectors, departments, and agencies.

e. Trees on the streets

These trees are overseen by the neighborhood or local unit in which they are located. Every local unit has a department of parks and forestry that assumes care for trees in cooperation with the Cairo Cleaning and Beautification Authority (or the equivalent body in other governorates). That department issues all permits for cutting trees located in the geographical area of each local unit.

8. Are trees on the streets and main roads considered public assets?

In 1967, the minister of transport issued Decree 93 on the regulation of traffic on main roads. Article 1 of the law states:

The following works may not be carried out on the main roads (highways) except with the permission of the General Egyptian Institution for Roads and Bridges:

- a. The planting of trees on the shoulders of the road or the central median; trees already planted on both sides of roadways are considered public property...

This decree, which is still in force according to the latest updates on the website of the Amiriya Press, means that these trees—which were planted after studies and research on their suitability for each city and their importance to the area in which they were planted, and whose maintenance costs were borne by the state until they reached their present conditions—are public property. This is in line with Article 32 of the constitution, which states, “The state’s natural resources belong to the people. The state shall preserve and properly exploit them, shall not deplete them, and shall respect the rights of future generations therein.” It also comports with Article 45, which states, “The state shall guarantee the protection and development of green space in urban areas; the preservation of plant, animal, and fish resources and the protection of those vulnerable to extinction or threat; and the welfare of animals, all as regulated by law.”

This has a very important consequence—namely, that accountability for the crime of encroachment on trees is not limited to penalties set forth in the Penal Code and other laws. In accordance with the discussion above mentioned, encroachment on trees must be treated like crimes covered by Chapter 4 of the Penal Code (crimes of transgression against public monies and property), which carry heavy penalties.

9. Are there international practices that we can draw on to improve the status of green spaces and government policy on trees in Egyptian cities?

With rising urban growth globally and ever-increasing population density, the loss of urban green spaces has become a recurring problem, not only the Third World but also in Australia, Asia, and, to a lesser extent, Europe and North America.¹⁷ Certainly some of these cities start from a situation quite different from that of Egyptian cities. Green spaces already cover about 30 percent of the area of 38 European capitals; at their maximum, in the Norwegian capital of Oslo they cover an estimated 72 percent of the city.¹⁸

Despite the relative advancement of these cities compared to Egyptian cities, air pollution nevertheless remains a major hazard, with one study estimating that one-third of residents in Euro-

17 Alession Russo and Giuseppe T. Cirella (2018), Modern Compact Cities: How Much Greenery Do We Need? International Journal of Environmental Research and Public Health.

18 World Economic Forum (2022), Which European Capitals Have the Most Green Spaces?

pean cities suffer from air pollution.¹⁹ UN Sustainable Development Goal 11 refers to fair and equitable access to urban green spaces, noting that by 2030 unconditional access to public green spaces must be provided, especially for older people, women, and people with disabilities.²⁰ Accessibility is defined by three criteria: the opportunity to see the urban nature, specifically trees and green spaces; exposure to green spaces between trees; and opportunities to access parks and use them for recreational purposes. On this basis, increasing numbers of cities are adopting the 3-30-300 standard: each residential building (or school or workplace) must overlook 3 trees; green density must constitute no less than 30 percent of the area in which it is located; and the nearest public park should be no more than 300 meters away.²¹

Other cities, typically led by elected local government, are beginning to address forestation, because of its importance for quality of life and sustainability, based on the principle of preserving and protecting existing green cover. Many cities have taken steps and announced timebound

19 Cecil C. Konijnendijk (2022), Evidence-Based Guidelines for Greener, Healthier, More Resilient Neighbourhoods: Introducing the 3-30-300 Rule, *Journal of Forestry Research*.

20 Ibid.

21 Ibid.

plans to increase, improve, and link green spaces to all other urban elements, such as public spaces in general, which have been eroded by years of austerity policies. Years ago, the Canadian city of Vancouver launched a plan for 2020 based on the 3-30-300 rule.²² The plan included ten different goals related to access to green spaces and the addition of 150,000 new trees to reach the goal that no residence or workplace should be more than a five-minute walk from a green space.

The plan also sought to reduce waste and double green jobs. Over the years, the plan has been so successful in transforming the city into one of the most livable in the world that we now speak of the “Vancouverization” of green space planning. There are many other success stories in cities like Bogotá, Canberra, Melbourne, Osaka, Rotterdam, and others, but the key lesson is the need for an integrated approach to green cover based on the identification of local opportunities, state institutional support, and vital community participation.

22 Baharash Bagherian, Liveable Cities: How Much Green Space Does Your City Have?

10. Is it our right to participate in the development of green spaces and public parks?

Citizen participation in environmental decision-making has become imperative at the current moment to ensure the sustainability of decisions in general. Green spaces and public parks, given their environmental sensitivity due to their linkage to biodiversity, their ability to absorb greenhouse gases and reduce the destructive effects of climate change, and their critical impact on the presence of nature within cities, require the involvement of citizens in decision-making, not only to sustain those projects, but also to enhance citizens' sense of connection to green spaces and public parks, help in their preservation and development, and monitor encroachments on them.

In regulating environmental impact assessment studies, the Egyptian environment law takes up the issue of community participation, its forms, and public hearings. Article 19 of the law states, "Every natural or legal person, public or private, shall submit an environmental impact assessment study of the facility or project to the competent administrative authority or the licensing authority before starting implementation. The study shall be conducted according to the elements, designs, specifications, foundations, and specific loads issued by the Environmental

Affairs Agency in coordination with the competent administrative authorities..”

In order to further regulate this, the Ministry of State for Environmental Affairs and the Environmental Affairs Agency issued a guide to the principles and procedures of environmental impact assessment, which is the controlling regulation for all environmental impact assessment rules contained in Article 19 of the environment law and Article 10 of its implementing regulations. The guide defined special cases entailing strict treatment as projects established in, overlooking, or close to “a site that must be protected and preserved, either because of its environmental importance...”²³ This provision applies the clearing and removal of trees or the reduction in the area of parks and green spaces.

²³ For example, if a proposed project is categorized as B, its location in an environmentally sensitive area would up its categorization to C due to its planned location in this area.