

## Historical Trees within the Framework of Urbanization (a Case Study of the Maryam Tree, Matariya District)

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### Abstract:

Heritage trees are considered among the distinctive and documented features of the geological history of the development of the region and a witness to historical events and a record of the memory of the place. Some of these trees have been documented and preserved, but there were a lot of these trees that were neglected and erased, which made the area lose its natural historical character. This was caused by a combination of factors, including natural factors and factors resulting from haphazard urban development. The study aims to know the criteria for documenting heritage trees and monitoring their impact on the surrounding urban areas. The study followed the descriptive approach through literary review through books and research and the analytical approach by studying similar models of heritage trees and extracting the elements of choosing the heritage tree and the methods of urbanization dealing with the heritage tree and applying these elements to the study area (Maryam's tree) in the Matariya area. Through a documentation form showing the impact of Maryam's tree on the change of uses within the surrounding urban environment. This study concluded by highlighting the importance of protecting these heritage trees from extinction by linking them within the surrounding urban space in proportion to their historical importance. And enacting laws to document the heritage trees to protect them by making a comprehensive map to heritage trees in the Arab Republic of Egypt as a natural heritage that must be preserved.

### Keywords:

Urban heritage trees, documentation, urban space, public awareness, Trees conservation

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### Introduction:

Despite the diversity of documentation standards and heritage agreements that help in taking the necessary precautions to enhance the urban heritage, heritage trees that are threatened with extinction are considered as symbols of archaeological value that require protection from threats.

Some trees witnessed important events, such as the tree of the mole (the tree of our master Adam, peace be upon him) and the tree of al-Hudaybiyya (the tree under which the pledge of allegiance was held).

### Research Problem:

Heritage trees are exposed to extinction as a result of urban development, population increase, weather conditions and neglect. Heritage trees must be preserved according to specific standards that are incorporated into natural heritage conservation programs, this issue must be taken into account in city development projects and construction processes. And provide decision-makers for these urban development projects with heritage stories related to those trees.

### Research Objective:

- 1- What are the indicators and standard criteria that can be deduced from the value of the tree?
- 2- To what extent are the heritage trees related to the urban development, in terms of its

association with historical events, beliefs and rituals?

- 3- What is the added value of heritage trees on urban space?

### Research Aim

- 1- Inventorying heritage trees and making a map at the level of the governorates of the Republic
- 2- The study aims to document the Mary tree and monitor the cultural and urban impact by determining the added value on the urban space.

### Research Importance

The sustainable protection to heritage trees requires finding an updated documentary record, monitoring the cultural and urban dimensions place where trees are located, to study the optimal distribution of urban uses and in decision-making.

### Research Methodology

- 1- The theoretical part of the research relied on the inductive approach by reviewing documents and data using books, references, research and internet that.
- 2- The practical part of the research relied on the analytical method in analyzing data and statistics from field survey surveys in accurate details and dropping them in tables and maps, as an attempt to answer the research questions from study sample. In order to describe the current situation, find solutions, conclusions and recommendations.

## 1. Historical Trees Definitions

### 1.1 Heritage trees international conventions

Natural heritage is defined in the 1972 World Heritage Convention [1]. as natural features with geological and physiographic formations and natural sites of exceptional universal value from an aesthetic or artistic point of view, which is any significant interactions between people and the natural environment that have been recognized as natural and cultural landscapes.

Historic heritage trees are those associated with a notable historical event such as a ruler's tour or a commemoration celebration, trees planted by visiting or local personalities on special occasions, and trees recognized as distinctive features in the history of a region are considered trees with unique characteristics in their kind or with genetic mutations and hybrids or by virtue of their remarkable size or age [2].

These trees have been recognized to be identified and included in the database of heritage trees, and accordingly, laws are enacted that the tree only removed if it is dead or posing a danger.

In the Egyptian law [3], Environment Law No. 4 of 1994, amended by Law No. 9 of 2009, provides for the punishment of anyone who trespasses on trees by cutting down, with imprisonment and a fine of no less than 5,000 pounds and no more than 50,000 pounds, and the confiscation of tools and equipment used in committing the violation.

### 1.2 Heritage Tree Morphology

Tree morphology [4] is the science of studying the physical shape, external structure of tree, their development and biological growth. It determines the value of studying the history of environmental and climatic change that has gone through the tree. In some countries, the heritage tree is classified as any tree whose trunk diameter and circumference exceed 1.3meter and the trunk is larger of 0.6 meter in the case of multi-stemmed trees, and the circumference of each trunk is to be added together to obtain the total circumference of the tree and its vegetative assembly exceeding 5 meters in

diameter.

### 1.3 Conservation Management Measures

**1.3.1 Protection:** includes conservation management measures that are either direct or indirect (protection area), the goal of protection is to prevent or reduce the impacts that may harm the heritage tree, any change in the physical environment of the tree. Protection on all aspects of the tree's natural growing environment or adjacent infrastructure [5].

**1.3.2 Conservation:** Means all operations related to the management of a single tree or group of trees or tree paths to maintain its urban cultural significance Conservation is based on respecting the existing situation [6].

## 2. International Experience

A heritage tree is a large, individual tree with unique value, which is considered irreplaceable. The major criteria for heritage tree designation are age, rarity, and size, as well as aesthetic, botanical, ecological, and historical value. heritage tree laws are developed to put limits against the removal of these trees.

- In Portland city, a database of trees designated as heritage trees
- Chicago heritage trees are protected by law of Heritage Trees, the first heritage tree program began in 1995.
- Notre Dame heritage tree in Paris.
- Kyoto heritage trees.
- Heritage trees in turkey
- Heritage trees in Gaza sector.

### 2.1 Portland's Heritage Tree

Portland's Heritage Tree program [7] determine heritage trees for their unique size, age, and historical or significance chosen by City Council, these trees are protected by City law and cannot be removed without the consent of the Urban Forestry Commission and the Portland City Council.

Portland uses this map to explore more than 300 Heritage Trees across the areas provide recreational activities surrounding urban area and provide some services necessary for uses and activities.



Figure 1 Portland's Heritage Tree Map

Table 1 Portland's Heritage Tree

Trees name	Tree history and importance	Tree photo	Morphology
Conifer Grove	- coniferous trees in this grove, associated with the Great Army of the Republic in 1937, are classified as heritage trees.		(Diameter at chest height): 45 inches Height: 80 feet Spread: 50 feet Venue: Esther Short Park
Black Locust	-The tree was planted in the historic schoolyard as an Arbor Day project circa 1910. - In 1982, the tree was determined to be removed for parking spaces. the tree was preserved and eventually received a Heritage Tree designation.		Height: 44 inches Height: 55 feet Spread: 60 feet Location: Primary Normal Mill
London Planetree	-Designated a heritage tree in 2002, this tree serves the residents of the Lincoln neighborhood as a reminder of the value of preserving the urban canopy and the legacy that the old trees represent.		(Diameter at chest height): 47 inches Height: 80 feet Spread: 70 feet Location: 200 H Street 38
Western White Pine	-This tree is more than 150 years old. -This was threatened with removal years ago so a jogging track could be built, but the efforts of local citizens the tree has been saved and will be preserved.		(Diameter at chest height): 54 inches Height: 175 feet Spread: 50 feet Location: 11418 SE Evergreen Hwy

### 2.1.1 Risks exposed to the heritage tree

- These trees were chosen to be removed for urban development works such as car parks and jogging paths.
- Natural disasters such as lightning strikes that affected parts of the tree.

### 2.1.2 Criteria for selecting heritage trees in the urban area

- Unique size.
- Age.
- Historical significance.

### 2.1.3 Portland council precautions to deal with heritage trees

An inventory of the City's Heritage Trees has been established through the Urban Forestry Commission and develop a program to give official

recognition to those trees because of their historical significance, age, beauty or size

### 2.1.4 The added value of the urban space surrounding the heritage tree

A social memory for the residents of the region to infer the features in the region, so the urban space surrounding the tree was preserved during the urban development.

### 2.2 Chicago Heritage Trees in U.S.A

Chicago Region Trees Initiative (CRTI) [8] project is enlisting public help to locate "witness trees" that were noted as landmarks by surveyors. Scientists already have used the survey records to map out the natural landscape that existed in the Chicago region. Now, the project is trying to find out how many of those landmark trees still exist.

Table 2 Chicago’s Heritage Tree

Trees name	Tree history and importance	Tree photo	Morphology
Chicago Heritage Trees (oak tree)	- Heritage trees suffer, especially in compact cities, in land uses changes. Oaks are a critical part of the Chicago region’s ecology. However, only 17% of the region’s original oak ecosystems remain.		(Diameter at chest height): 40 inches Height:70 feet

**2.1.1 Risks exposed to the heritage tree**

- The remaining ecosystems are often fragmented, which makes the oak trees more likely to be invaded by exotic species.

**2.2.2 Criteria for choosing heritage trees in the urban area**

- physical features and condition
- Symbolic or emotional meanings

**2.2.3 Chicago council precautions to deal with heritage trees**

- Chicago council designate criteria and process for evaluating the ecological, cultural and historical significance of outstanding trees in cities. These have been developed through local research and field studies.
- The city of Chicago has conducted an exercise called the ‘Tremendous Tree Program’ [9]. The project also studied the roles and values offered by citizens in making the nominations. Other countries adopted similar system such as Scotland and Ireland which developed a

similar system based on tree size in documenting heritage trees.

- the Chicago Region Trees Initiative and Chicago Wilderness have identified the most important oak ecosystems and with the help of The Field Museum, mapped hubs that buffer them and corridors to connect them.

**2.2.4 The added value of the urban space surrounding the heritage tree**

- The urban space surrounding the tree was preserved and not encroached upon during the urban development.

**2.3 Notre Dame heritage tree in Paris**

This ancient heritage tree near the Notre Dame in Paris has an inclined trunk [10], truncated branches, wood decay, cavities and other veteran features. Supported by props that emulate natural trunks, the Robinia pseudoacacia planted in 1601 has been protected as an ‘arbre remarquable’ by the municipal authority.

Table 3 Notre Dame Heritage Tree

Trees name	Tree history and importance	Tree photo	Morphology
Notre Dame heritage trees in Paris	historical-cultural significance transmitted through generations as folklores and stories. These oaks were planted during Louis XIV’s reign (1643–1715), when the famed Sun King was working to expand his navy and needed wood for his ships’ masts.		The trunk 45 inches Height 60 feet tall Tree condition: good Age: 150-200 years

**2.3.1 Risks exposed to the heritage tree**

French authorities cut down some 1,000 historic oaks as part of the Paris cathedral’s ambitious reconstruction process.

**2.3.2 Criteria for choosing heritage trees in the urban area**

- Tree dimensions.
- Historical significance.

**2.3.3 Notre Dame council precautions to deal with heritage trees**

The (Robinia pseudo acacia) planted in 1601 has been protected as an ‘arbre remarquable’ by the

municipal authority.

**2.3.4 The added value of the urban space surrounding the heritage tree**

The urban space surrounding the tree was preserved and not encroached upon during the urban development.

**2.4 Kyoto heritage tree (the grounds of the Nishi Hong wan Temple).**

This tree designated as heritage trees using diverse criteria, such as size, tree form, historical-cultural associations, and sacred-mythical connotations [11].

Table 4 Kyoto heritage tree

Trees name	Tree history and importance	Tree photo	Morphology
Kyoto heritage tree	Elaborate protective measures including wooden fences and many wooden props have been installed to sustain an ancient heritage tree in the grounds of the Nishi Hong wan Temple in Kyoto.		The trunk: 0.8 m Height 10-12 m Widespread:8m Tree condition: good Age: more than 400 years

#### 2.4.1 Risks exposed to the heritage tree

The tree has an inclined trunk, truncated branches, wood decay, cavities and other veteran features as a result of weather factors.

#### 2.4.2 Hong wan council precautions to deal with heritage trees

Heritage-tree designation can trigger consequential improvements in their management. It may raise awareness among public and decision makers to better monitoring and protection. These trees can attract donations.

The knowledge and data gleaned by tree researchers could be fed into the management decisions. The detailed tree inventory, compiled in the form of reports, books and websites, could inform nature conservation and property development, promoted as an educational resource to strengthen teaching and learning endeavors about nature. The same resource base can develop ecotourism activities, to be merged with interests on local history and culture.

#### 2.4.3 Criteria for choosing heritage trees

Variables have been classified into eight groups:

- Paramountcy of tree dimensions.
- Advanced age traversing human generations.
- Superlative performance amongst peers of the species.
- Special ecological functions.
- Emphasis on visual or scenic.
- Association with prominent personalities or historical events.
- Natural or cultural bequests.

- Spiritual or mythical connotations.

#### 2.4.4 The added value of the urban space surrounding the heritage tree

- It has a religious dimension as it is located inside the precincts of a temple that has religious and sacred value
- The urban space of the tree was respected and a wooden fence was built to protect the tree.

#### 2.5 Heritage trees in turkey

Turkey pays great attention to cultural heritage and prominent landmarks. Among all these interests, Turkey is interested in heritage trees that spread throughout the country. This interest comes according to several reasons. First, these trees are considered a historical and cultural heritage. It also expresses beauty and value in the tourism sector, as well as its benefits on the environmental level. For this reason, the Turkish government always adds new perennial trees to its environmental archive. For example, in the state of Elazig, northeastern Turkey [12], the city directorate is keen to protect nature in a way and perennial trees in particular, which are estimated at 29 perennial trees ranging in age from 200 to 700 years, and they are taken care of through cleaning and pruning periodically according to the annual seasons in a way that protects them from perishing Insects and diseases that may gnaw at its core. The authorities are also working to protect the ancient trees from crowding, so they have worked to reduce wandering around them.

Table 5 Turkey heritage tree

Trees name	Tree history and importance	Tree photo	Morphology
Sarayer tree	The oldest tree in Istanbul is 1,300 years old, and is currently under protection in a forest in the "Sarayer" area, north of the city. It is reported that the perennial tree is 12 meters tall and 4.5 meters in diameter. And it witnessed all the historical events. the trees began to lose the inner parts of their trunks. The trunk of the tree is hollowed out.		-12 meters tall and 4.5 meters in diameter -1,300 years old

Trees name	Tree history and importance	Tree photo	Morphology
(Yew berry) tree	the oldest archaeological tree in the country is the 4115-year-old yew tree located in the Gumeli Forest in Zonguldak Province on the Black Sea. It is the oldest yew tree in the world and one of the five oldest living trees in the world as well.		-12 meters tall and 4.5 meters in diameter -4115 years old
"Incaia" tree Tarihi Çınar Ağacı	- located west of Istanbul, it contains the largest perennial pine tree in the city of Bursa, which tourists come from all over, and it is a huge tree. This tree has become a famous symbol of the city of Bursa [13]. The tree is surrounded by famous cafes, historical markets and archaeological museums. Iron pillars were installed to support some huge branches due to their heavy weight, and for fear that they might break or fall to the ground. The shade of the tree covers approximately 1,000 square meters. -The giant "Nicaea" tree receives thousands of local and foreign visitors every year, making it an economic engine for the residents of the region.		-The tree is over 600 years old -37 m tall - 53 m crown diameter, and has a 10 m circumference

**2.5.1 Risks exposed to the heritage tree**

The trees began to lose the inner parts of their trunks. The trunk of the tree is hollowed out.

**2.5.2 Turkey council precautions to deal with heritage trees**

It is taken care of trees by cleaning and pruning periodically, according to the annual seasons, in a way that protects it from destruction, insects and diseases that may gnaw at its core. The authorities are also working to protect the ancient trees from crowding, so they have worked to reduce wandering around these heritage trees.

**2.5.3 Criteria for choosing heritage trees**

- Tree dimensions.
- Age.
- Emphasis on visual or scenic.
- Historical events.

**2.5.4 The added value of the urban space**

**surrounding the heritage tree**

- The tree is surrounded by a famous cafe, historical markets and archaeological museums.
- The giant "Incaia" tree receives thousands of local and foreign visitors every year, making it an economic engine for the residents of the region

**2.6 Heritage trees in Gaza sector**

Gaza is one of the oldest cities in the world, founded by the Canaanite Arabs around the third millennium BC, although it includes a limited number of natural resources, with special nature components of heritage and historical value, and number of perennial trees such as olive trees in the Gaza Sector, Tel Al-Muntar, Rafah Swafi, Tel Al-Sakan and Tel Umm Amer [14].

Table 6 Gaza Heritage Tree

Trees name	Tree history and importance	Tree photo	Morphology
Al-Sidra Carob tree (Gaza)	“Al-Sidra neighborhood” became a famous place attributed to the tree, as it sits over an archaeological area dating back to the Mamluk and Bronze Age eras, it was found during extending the water networks on the street in 2009. There are different narrations about it, some of which state that the tomb adjacent to it is for Wali Saleh. and the tree has therapeutic and medicinal benefits.		The trunk: 0.8 m Height 10-12 m Widespread:8m Tree condition: good Age: more than 100 years

Trees name	Tree history and importance	Tree photo	Morphology
Umm Amer Tree (Khan Yunis)	Inside a private land, whose age is estimated to 1460. It is said that commercial caravans passed by, they rest under that tree, which became known to all merchants and became a place for their acquaintance. And if any one tries to harm this tree, something happens to him that leads to death		The trunk: 1.2 m Height 12 m Widespread 15m Tree condition: good Age: more than 100 years
Kenya tree (Khan Yunis)	the Kenya tree more than 300 years old, extending on the axis of Salah El-Din, which is believed to have been planted by Salah El-Din to determine the commercial and military hubs of the convoys passing from Egypt, but it was removed during the development of Salah El-Din Street in 2017.		-The trunk: 80 cm -Height 10-12 m -Widespread: 8m -Tree condition: Most of the tree was removed during operations Expansion of Salah El-Din Street -Age: more than 100 years

**2.6.1 Risks exposed to the heritage tree**

- The tree was determined to be removed during the development of Saladin axis
- Weather factors

**2.6.2 Gaza council precautions to deal with heritage trees**

- Paramountcy of tree dimensions
- Advanced age traversing human generations
- Superlative performance amongst peers of the species
- Special ecological functions
- Emphasis on visual or scenic
- Association with prominent personalities or historical events
- Natural or cultural bequests
- Spiritual or mythical connotations

**2.6.3 Criteria for choosing heritage trees**

- Tree dimensions.
- Age.
- visual scenic.
- Association with prominent personalities or historical events.
- Spiritual or mythical connotations.

**2.6.4 The added value of the urban space surrounding the heritage tree**

- Al-Mentar Hill is a tourist attraction overlooking the city of Gaza. Al-Mentar Park was established near it. Religious manifestations and social traditions of Khamis al-Mantar are held in its surroundings. Aesthetically and historically symbolic of the old entrance to Gaza.
- Kenya tree (Khan Yunis), is away to determine the location and directions. It is located in a crowded urban area in Gaza, and is surrounded by archaeological landmarks.
- Umm Amer Tree (Khan Yunis), is agricultural housing within private property, whose owner takes care of and exploits it as a tourist attraction.

**3. The criteria summarized by the researcher through international and local experiences to choose the heritage tree**

Through the study of international examples of cities that contain heritage trees, the criteria for the heritage tree were extracted to identify how each experiment deals with the surrounding urbanization.

Table 7 criteria for identify the heritage trees

Factors	Variables
Physical Variables	Sheer size (a common rule of thumb is >1 m trunk diameter) Advanced age Impressive or exemplary tree form for the species Uncommon or rare species Notable botanical interest
Social Variables	Unusual or rare habitat Social values Sentimental and emotional attachment of the community Documented important cultural, traditional or folklore connotations
Historical Variables	Documented association with notable historical event, personality, building or monument



Religious Variables	Considered to have sacred, mythical, idolatrous or spiritual significance
Economic Variables	Economic values (Important economical contributions)
Landscape Variables	Landscape contribution to the locality Landmark or sense of place icon Exceptional aesthetic interest Functional or aesthetic association with natural features (such as a riverbank or a ridgeline)

**4. Case Study Mary's Tree (History of the Mary's Tree)**

- This region became famous in the past, were exclusive to the Egyptian priests, who became famous in teaching all aspects of science and knowledge, and the fame of this region rose again due to the coming of the Holy Family to Egypt through that region.
- During the French campaign against Egypt, the French soldiers limped on their way to visit the Virgin's tree and many of them wrote their names on its branches.



Figure 2 Church of the Virgin Mary in Matareya

**4.1 Historical Background**

The Islamic historian Al-Maqrizi, who lived around the middle of the fifteenth century AD, mentioned that the Holy Family landed near Ain Shams in the direction of Al-Matareya, and they rested next to a source of water, and Mary washed the clothes of Christ and poured the washing water into those

lands. It was shrine for many tourists and pilgrims from different parts of the world, and the Egyptian Coptic Church still celebrates that blessed anniversary in June of each year, which is the memorial of Christ's entry into the land of Egypt [13].



Figure 3 Virgin Mary Tree before development

**4.2 Mary Tree's Current Situation**

It is mentioned that the original tree of the Mary tree, where the Holy Family rested, became weak and fell in 1656 AD. This tree was planted adjacent to the original ancient tree. The tree was neglected until it reached a great degree of badness. the Ministry of Tourism developed a project to preserve historical places and reviving the path of the Holy Family, the Mary tree area and its surroundings were developed to match its historical value.

Table 8 Criteria for designating the Mary tree as a heritage tree

Heritage Tree Registration Form (Maryam's Tree).										
Special considerations	Health status	Location	Tree morphology			Age	Type	Name	Mary's Tree	General information about trees
			green gathering	Height	the trunk					
-	exhausted	Al-Matareya District	Wide-spread	Not defined	Not defined	More than 2000 years	sycamore fruit tree	Mary tree		
The growth environment is stressful due to the increased intensity of development and pollution. The tree has an inclined trunk, truncated branches, wood decay, cavities Aging									Is the tree exposed to risk	
The heritage values of the tree: Physical Value-Social Value-Historical Value-Religious Value-Economic Value-Landscape value										
The tree has an inclined trunk, truncated branches, wood decay, cavities Dimension not defined because the tree Because the tree went through three stages of cultivation									Physical value	

Pilgrims from all over the world flock to it to be blessed by the tree and the well, it considered as a gathering point.	societal value
It is more than 2000 years old. During the French campaign in Egypt, French soldiers limped on their way to visit the Tree of the Virgin and many of them wrote their names on its branches with the blades of their swords. We can see it clearly on the old tree.	Historical value
The tree has a sacred value The Maryam tree area is one of the most important archaeological areas located on the path of the Holy Family's journey, where the Holy Family rested under those trees and next to the water well located next to it. Some religious and spiritual rites are practiced around it	Religious value
Some commercial, recreational and service activities have been established to provide services near the church, which have an economic return.	Economic Value
The tree has an aesthetic shape inside the church, and it was developed and preserved by constructing a wooden fence surrounding the tree.	Landscape value
<b>The added value to the urban space surrounding the tree</b>	
<p>Urban features: such as (location, area, and landscapes): A detailed plan has been prepared for the development of Mary's Tree. Commensurate with the prevailing activities and functions such as (religious manifestations and various social traditions). Meanings and symbols: such as: memorial objects, places of historical events, archaeological sites, and spiritual and religious places.</p> <p>Determine the change in usual practice as a result of one of the following variables: Urban development and environmental change Neglecting the area and damaging the tree</p>	(Urban identity) The development of activities surrounding the tree
figure (5) Detailed plan for the Maryam Tree area, Ministry of Tourism	
<b>Conservation Management Measures</b>	
<p>Implementation of the protection zone in order to prevent or reduce the effects that may harm the heritage tree, such as:</p> <ul style="list-style-type: none"> <li>Prohibit any change to the tree's physical environment.</li> <li>Building an external fence to protect and preserve the tree.</li> <li>Protection from the tree's natural growing environment.</li> <li>Protection from infrastructure change.</li> </ul>	Conservation
<p>Sustainability in the development process in the vicinity of the church and the Maryam Tree area, which was initiated by the Cairo Governorate and the Ministry of Tourism and Antiquities, restoring the tree and constructing walls around the area with the same architectural identity.</p> <p>Completion of all the works of operating the waterfalls located in the vicinity of the tree as an aesthetic view of the area, and the works of water-raising services.</p> <p>Establishing cafeteria area.</p> <p>Developing lighting and security systems in the urban area.</p> <p>Raising the efficiency of the public park.</p> <p>Establishing visitors center.</p> <p>Establishing halls for permanent exhibitions in the region, to inform visitors about the history of the Holy Family in Egypt, and the history of Mary's tree, by showing documentaries.</p> <p>The project includes painting and beautifying the properties adjacent to Maryam's tree, this point is one of the most important family points in Cairo.</p>	maintain



figure (5) Painting the properties adjacent to the Maryam Tree area



figure (6) wooden fence surrounding Mary tree



figure (7) Establishment of two permanent exhibition halls in the region, to introduce visitors to the history of the Holy Family's journey in Egypt, and the history of Mary's tree, by showing documentaries.



figure (8) Completion of all the work of the well next to the tree as an aesthetic view of the area, and the work of water raising services.

## 5. Result and conclusion

Conservation of heritage trees is a concern worldwide. Therefore, many countries have taken the initiative to raise awareness to the public regarding the importance of heritage trees and enact laws or declared policies to authorize the heritage trees conservation as part of the culture of the city. Heritage tree provide benefits and aesthetic value to the urban community. heritage trees also have the same ecological-landscaping roles such as reduce air pollution and increase property values in an area. heritage tree conservation can be said as a new term. The heritage trees conservation efforts are deeply needed in law or policies and public awareness.

### 1- Criteria for rehabilitating trees and adopting them as heritage trees.

Heritage trees stand out through their physical (morphological) characteristics or intangible values (such as the symbolic or aesthetic meaning), and the heritage trees selected for the study were according to:

- Tree morphology: type, dimension, structure, condition, location, and special considerations
- Heritage values: historical value - social value- Economic value - aesthetic value - religious value -Urban value

### 2- Heritage trees impact on the surrounding urban space

Identity Locational: The characteristics of a spatial identity are defined as:

- Authentic as it relates to the place.
- Familiar and understandable as it relates to prevailing norms.
- Identical in its characteristics and distinct from others.

It is therefore defined by elements include memorials, places of historical events, urban areas, archaeological sites, spiritual and religious places and various social traditions.

## 6. Recommendations

1- Expanding the scope of the search by create a data base that includes the heritage trees at the level of the Republic. Through the study, many heritage trees were found, which are witnesses to many historical events. Such as:

- The Bengal fig type in Egypt is considered historical and archaeological trees and are classified among the largest perennial trees in the world, because they are the type of trees that send their roots to deep distances in the soil. It also branches out in a variety of ways, making each branch look like an independent tree. The age of one tree exceeds 100 years. The Bengal fig tree is native to India, where the seeds were brought from and

cultivated in Egypt. It reaches a length of more than 25 m. In 1868, Khedive Ismail brought Bengal fig seeds from India and planted them in Giza, Cairo and Ismailia for example:

a) Royal palm which located In Front of Cairo university in Giza. Palm trees were planted at the request of university officials in 1928, about a hundred years ago, as its seedlings were taken from the Orman Garden. It was called the Royal because Princess Fatima Ismail was the most contributor to the work of the Egyptian University. The palm trees are sponsored by the Faculty of Agriculture at Cairo University under the supervision of the Governor of Giza.



Figure 9 Royal palm, Cairo university

b) The first tree is located in the Zamalek neighborhood in Cairo, near the Cairo Tower. It is more than 150 years old, so it is considered historic labels. It is under the supervision of the Hygiene and Beautification Authority of the Cairo Governorate Office.



Figure 10 Zamalek Heritage Tree

c) The second tree is located on Muhammad Ali Street in Ismailia Governorate. It is more than 150 years old, so it is considered historical, in addition to the fact that General Charles de Gaulle, the French politician, stood by her and said his sermon to the French during his visit to Ismailia in 1940 after Hitler's occupation of France. President Sadat also recommended paying attention to it and not cutting it off. It is under the supervision of the Ismailia Museum.



Figure 11 Ismailia Heritage Tree

2- Legislative initiatives can be launched.

3- Heritage trees can attract donations

4- The knowledge and data obtained by researchers can be fed into management and decision-making.

5- Detailed tree inventory, compiled in the form of reports, books and websites, can inform nature conservation and property development, which can take appropriate measures to protect damaged trees from harm.

6- Tree appreciation can be promoted as an educational resource to strengthen teaching and learning endeavors.

7- Develop ecotourism activities, to be combined with interests around local history and culture.

8- The social and cultural benefits of heritage trees can be promoted more seriously to arouse community interest in their living landmarks. By emphasizing human-related values, the traditional conservation issue can be supplemented with a new dimension.

9- The data collected can be benefitted to support the integrated heritage database system in order to effectively manage the resource, develop policy and set priorities for heritage site conservation.

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