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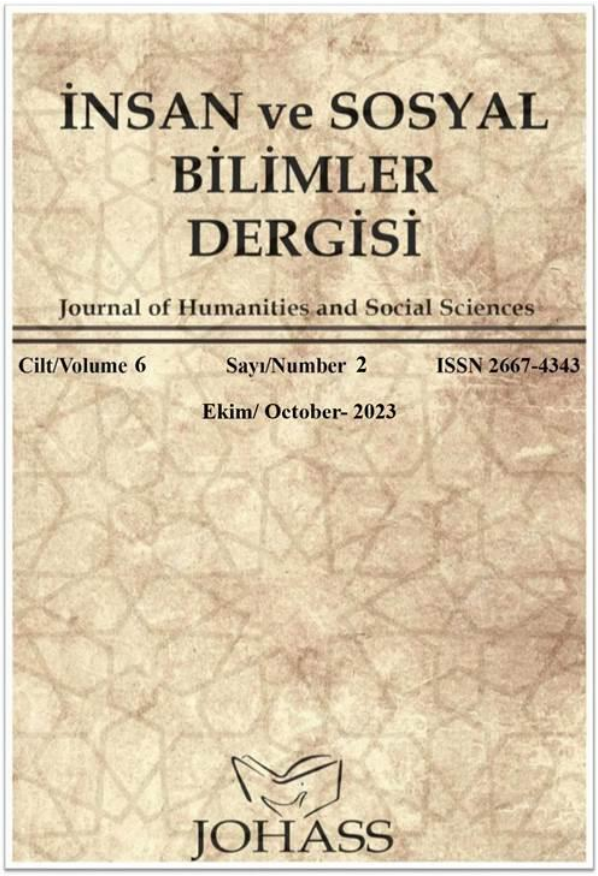

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The Effect of a Cultural Landscape Area on Urban Green Spaces: Case Study of Diyarbakir Fortress and Hevsel Gardens

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The Effect of a Cultural Landscape Area on Urban Green Spaces: Case Study of Diyarbakir Fortress and Hevsel Gardens

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Abstract

The Diyarbakır Fortress and Hevsel Gardens are an example of combining cultural landscapes and urban green spaces. These types of areas preserve historical and cultural richness while meeting the green and social space needs of modern cities. The aim of this study is to reveal the impact of these two important heritages, which have cultural and historical value, on urban green spaces in the Diyarbakır Sur District. The presence of green areas in the Sur district has been determined in line with this objective. Field observations, Master Development plans, planning annotations, the "management plan", land registry records, cadastral procedures, urban guidebooks, and digital mapping platforms were employed as methodologies. Inclusive and exclusive quantifications of the designated cultural landscape area were conducted. The study quantitatively reveals the presence of active green areas in two heritage areas intertwined with culture, nature and historical built environment. The fields of heritage and nearby environmental arrangements affect the amount of green space in the Sur district. These landscaping enhancements substantially elevated the per capita functional green space in the district, increasing it from 18.22 square meters to 37.75 square meters. Similarly, they increased the availability of parking spaces, with the per person spacedetermined as 16.64 square meters. This study thus recommends increasing the regulations in buffer zones that reflect the unity of traditional and modern elements, with sustainable approaches that are compatible with ecological balance and planned for the long term.

Keywords: Cultural landscape, urban green spaces, Diyarbakır Fortress (Castle), Hevsel Gardens.

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Introduction

Diyarbakır Fortress and Hevsel Gardens represent a unique cultural landscape located in southeastern Turkey. “Diyarbakır Fortress and Hevsel Gardens Cultural Landscape Area” was registered on the UNESCO World Heritage List at the 39th term meeting held in Bonn, Germany, in 2015 (Turkish National Commission of UNESCO, 2015). This area is among one of the rare examples in the world where the location is integrated into the historical settlement fabric and ongoing agricultural activities. Diyarbakır Castle has an impressive structure with a history of thousands of years, and bears the traces of various civilizations. This castle is situated in the city center, and integrates with the city. The castle is a part of Diyarbakır's identity and an important element that forms the cultural landscape of the city. Hevsel Gardens consist of historical irrigation canals and agricultural areas located around Diyarbakır Castle. While these green areas preserve the urban balance of the city, they simultaneously offer productive agricultural areas. At the same time, its visual landscape allows city residents to experience natural beauty. Urban green spaces play a critical role for the livability of cities and the quality of life of their residents. These areas contribute towards preserving the natural environment, improving air quality, reducing people's stress and providing opportunities for physical activity (Bucaklı, 1999). Urban green spaces are also important for the sustainability of cities. In this context, Diyarbakır Fortress and Hevsel Gardens offer a unique urban green area to city residents. These spaces bring a balance to the complexity and pace of city life. They simultaneously protect the historical and cultural heritage, and contribute to the sustainability of urban life.

The aim of this study is to reveal the impact of these two important heritages, which have cultural and historical value, on urban green areas. For this purpose, the green area presence of Sur district was determined. A comparison was made to quantitatively explain the effect of the cultural landscape area. The comparison measured active green areas, including and excluding the cultural landscape area. There are many studies in the literature about the structures of the Suriçi region, which examine the texture of historical settlements in the city, and the cultural landscape areas included in the World Heritage List. It is important to bring such areas to the agenda from different angles, due to the increase in awareness and environmental planning works since its inclusion in the World Heritage List, the desire to develop tourism and trade, and the traditional cultural elements being forgotten. This study aims to draw attention to the historical and natural structure of the area and its immediate

surroundings by revealing their direct contribution to the needs of the city, rather than a visual landscape. The study data will hopefully contribute to public space planning. The originality of the study is that it quantitatively reveals the structure of two rare heritage areas integrated with the city, intertwined with culture, nature and historical built environment, which directs the existence of active green areas.

Conceptual Framework

Urban Green Spaces

The establishment of healthy and ordered urban environments hinges upon the arrangement, quantitative attributes, functional attributes, and aesthetic attributes of accessible green spaces conceived within the scope of methodical planning (Kiper et al., 1991). Public parks situated within urban open green spaces serve notable social and cultural roles, particularly in the 21st century (Thompson, 2002) . The open spaces into two categories: (1) those that are actively utilized, observed, and experienced by individuals; and (2) those that, although not actively utilized, fulfill urban roles and influence urban evolution (Tankel, 2011). Some studies delineate green spaces as "surface expanses of extant open spaces adorned or integrated with vegetative components encompassing both woody and herbaceous plants" (Öztan (1968) and Özbilen (1991), as cited in Önder et al., 2012). As per the prevailing legislative framework in Turkey, green spaces consist of those designated for public benefit, including playgrounds, recreational zones, picnic spots, leisure venues, amusement areas, and similar recreational facilities (Official Gazette, 2017). Within inclusive of fairs, botanical and zoological gardens, as well as metropolitan-scale regional parks (Official Gazette, 2017).

According to the same regulatory provision, green spaces which include functions and construction conditions are delineated as encompassing playgrounds, parks, picnic spots, and recreational areas (Official Gazette, 2017). In Turkey, as reported in Annex-2 of the Spatial Plans Construction Regulation, published in the Official Gazette of 14 June 2014 designated as number 29,030, a guideline has avocate a norm of 10 square meters of open and green space per person (Official Gazette, 2014). However, Özdede et al. (2021), suggested 54 m^2 of green space per person in the model they developed, while determining the need for more green space after the pandemic, stating that even this was below the standards in some countries (Table 1) (Özdede et al., 2021).

Table 1

Green Space Standards Recommended İn Different Countries (Ersoy 2009, cited in Özdede et al., 2021; p.371).

	Settlement Size	**Ratio to Urban Area (%)**	**m2/Person**
USA	Province		10.5
	25,000+	40.24	106.4
	250,000+	39.97	123.5
Germany	Province		15
	600,000+		27.3
England	Province		14–21
	10,000+	21.5	63
France	Province		25
	100,000+		23
Netherlands	Province		20.5
Sweden	City (Stockholm)		77
Canada	2,000,000 (Toronto)	24.2	
Russia	Province		50
Italy	Rome		22
	Small- and Medium-Sized Cities		12.5
Australia	Province		10
	Sydney		19.2
	80,000+	9.7	40

Green spaces are indicators of social development, comfort levels, and the importance given to healthy living, and they have economic, ecological, social, and physical functions. emphasize the biological, meteorological–climatic, physical, psychological, social, and economic functions of green spaces (Atabay (1994), Şener (1987), and Sümer (1988) as cited in Bucaklı, 1999). Green spaces play an important role in improving physical and psychological well-being (Bedimo-Rung et al., 2005; Romagosa, 2018). Open and green spaces are pivotal to ensuring the robust sustenance of urban areas, serving multifarious functions encompassing recreation, ecological balance, and land organization (Gökalp &Yazgan, 2013).

Cultural Landscape

The term “cultural landscape” was initially introduced in Germany during the latter part of the 19th century, subsequently evolving into a foundational concept within the realm of geography (Jones, 2003). In 1895, Ratzel characterized the cultural landscape as a territory altered by human intervention, and in 1903, Schluter underscored the impact of human actions on the configuration of the landscape as a responsive measure to determinism (Jones, 2003). In 1922, Krebs characterized it as a locality transfigured by human conduct (Jones

2003). In 1925, Sauer introduced this German-origin definition to the global discourse, defining a cultural landscape as "a region sequentially transformed by human agency via cultural undertakings, and molded by distinct cultural collectives from the antecedent natural landscape preceding human engagement" (Jones, 2003). Jones (2003) stresses that scholars in geography and ethnology rigorously engaged with the construct of the "cultural landscape" within the context of Scandinavian nations in the interwar period. From the 1960s onwards, the notion "cultural landscape" began to further permeate diverse academic disciplines, and was subsequently integrated into the nomenclature of environmental management (Jones, 2003). From the 1970s onwards, this view changed with different debates (Mitchell, 1994). The term "cultural landscape" has been diversely understood across disciplines, influenced by distinct academic traditions and specific pedagogical and socialization processes inherent to each discipline (Jones, 1988). Despite the diminishing focus on cultural landscapes within the evolving discipline of geography, fields like anthropology, ecology, architecture, and landscape architecture have demonstrated a burgeoning interest in this concept, integrating it into their academic inquiries during this period (Aplin, 2007; Jacques, 1995).

Cultural landscape as a concept, was used by the "World Heritage Committee" in 1987 (Aplin, 2007). Three decades after the acceptance of the Venice Charter, and with the rise of various discussion platforms and global organizations centered on heritage, there is a pressing imperative to revisit and recalibrate notions of heritage, particularly in terms of the demarcation between cultural and natural values (Jacques, 1995). For example, cultural landscapes emerged as a topic of great interest for the international conservation community in the 1990s, and were then adopted as a conservation category (Jones, 2003; Jacques, 1995). In 1992, the "World Heritage Committee" initiated the inclusion of cultural landscapes into the World Heritage list, marking it as the inaugural international legal instrument for their protection (Rössler, 2006). Since 1992, there have been a series of statements on cultural landscapes that are aimed at an international audience (Jacques, 1995). Cultural landscapes are categorized into three distinct classes of outstanding universal value for World Heritage purposes: clearly defined landscapes designed and intentionally created by humans, organically evolved landscapes, and relational cultural landscapes (Taylor & Lennon, 2011).

In 1995, the Committee of Ministers of the Council of Europe endorsed the Recommendation on the Integrated Protection of Cultural Landscapes as an integral component of Landscape Policy (Jones, 2003). Consequently, the domain of cultural heritage management experienced a swift expansion in the fields of planning and execution (Jacques,

1995; Taylor, 2009). As articulated in Robert Z. Melnick (1984), the cultural landscape serves as a tangible reflection of human endeavors and beliefs in conjunction with the natural landscape (Fowler, 2003). Wagner and Mikesell assert that a cultural landscape is a discernible and emblematic outcome resulting from the interplay between a distinct human community, encompassing particular cultural inclinations and capabilities, and a unique assortment of natural conditions. Cultural landscapes stand as a testament to numerous epochs of natural evolution and the cumulative efforts of countless human generations (Fowler, 2003). The International Union for Conservation of Nature (IUCN) formally delineates the term "cultural landscape" as "a geographically designated region linked with historical occurrences, endeavors, or individuals, encompassing cultural or aesthetic merits, inclusive of both cultural and natural resources, as well as fauna, be they wild or domesticated" (Architecture interview, 2011). For an area to be recognized as "cultural landscape", the synergy between nature and human influence must yield significant outcomes over a period, and these outcomes must exist in equilibrium (Özsüle, 2005). Cultural landscape types are classified in different ways, depending on "the function of the landscape, the origin of the landscape, the International Union for Conservation of Nature (IUCN), and the World Heritage List" (Table 2) (Erdoğan, 2022).

Table 2

Types of Cultural Landscapes (Erdoğan, 2022)

	Classification
According to the function of the landscape	Agricultural Industrial Recreational landscape
According to the formation of the landscape	Natural Areas Unaffected by Humans Areas Shaped Jointly by Humans And Nature Areas Completely Shaped by Humans
Classification of the International Union for Conservation of Nature (IUCN)	Clearly Identifiable Landscape Areas Organically Developed Landscape Areas -Geological Heritage -Residual Landscape Areas -Landscape Areas with Continuity Complementary cultural landscape areas
Classification in the World Heritage List	Consciously Human-Made Landscape Areas Organically Shaped Landscape Areas Combined Cultural Landscape Areas

The UNESCO World Heritage List has an important role in protecting historical, natural and cultural heritage elements and transferring them to future generations. It provides

a universal platform for the protection and sustainability of listed works. Thanks to heritage sites with increased brand value, the tourism industry develops and contributes to the economy.

A nominated property must (i) be a representation of a magnum opus of human inventive brilliance; (ii) signify a substantial shift in human values, either within a specific period or a particular cultural zone, especially in relation to advancements in architecture, technology, monumental arts, urban organization, or landscape architecture; or (iii) provide a unique, or at the very least, exceptional record of a thriving or disappearing cultural tradition or civilization. Furthermore, it should (iv) present a superlative example of a structure, or architectural or technological ensemble, that denotes significant stages—a term that is frequently misconstrued—in human history. The property might also (v) typify traditional human settlement or land use that serves as a symbol of a culture, or several cultures, especially when such cultures are under threat. Last, the nominated site should have (vi) a clear and tangible association with momentous events, ongoing traditions, ideologies, or with artistic and literary masterpieces of unmatched global stature (Fowler, 2003).

The UNESCO World Heritage List includes cultural, natural, and mixed heritage sites recognized by the World Heritage Committee as being of outstanding universal value. As of September 2023, there were 1199 World Heritage sites, 933 of which were categorized as cultural, 237 as natural, and 39 as mixed (UNESCO, 2023).

Diyarbakır Fortress and Hevsel Gardens Cultural Landscape Area

The Diyarbakır Fortress and Hevsel Gardens, acknowledged as a cultural landscape area by the UNESCO, are situated adjacent to the historical city walls, along the banks of the Tigris River. This area, rich in unique flora and fauna, is a hub for agricultural activities and embodies local cultural and production traditions (Figure 1).

Hevsel Gardens, seamlessly intertwined with both the Tigris Valley and the city, occupies a paramount position as the city's most significant landscape area. Simultaneously, its central position within the city and its utilization as agricultural terrain makes it an uncommon example of a cultural landscape. Within this framework, initiatives for the area's development began in 2012, and a Management Plan was drafted in 2013.

Figure 1

Diyarbakır Fortress and Hevsel Gardens ((a): (Photo Gallery, n.d), (b): (Demirören News Agency,2023), (c): (Soyukaya, 2015))

(**a**) (**b**) (**c**)

In 2015, during the 39th session of the UNESCO World Heritage Organization in Bonn, Germany, the Diyarbakır Fortress and Hevsel Gardens Cultural Landscape Area was added to the UNESCO World Heritage List. This decision was based on the criterion (iv): "The rare and impressive Diyarbakır Fortress and associated Hevsel Gardens, with its extensive masonry walls and gates (including many repairs and additions) and landscape setting of inscriptions, gardens/fields, and the Tigris River, which bear witness to a number of important historical periods in this region from Roman times to the present day". Between 2016 and 2021, conservation status reports were drafted at regular intervals. The ICOMOS World Heritage Committee also included the Cultural Landscape of Diyarbakır Fortress and Hevsel Gardens, Turkey in their World Heritage List as a cultural landscape area. This was further underscored in the tentative Declaration of Outstanding Universal Value (UNESCO, 2015). The factors rendering the Diyarbakır Fortress and Cultural Landscape as exceptional can be summarized as follows:

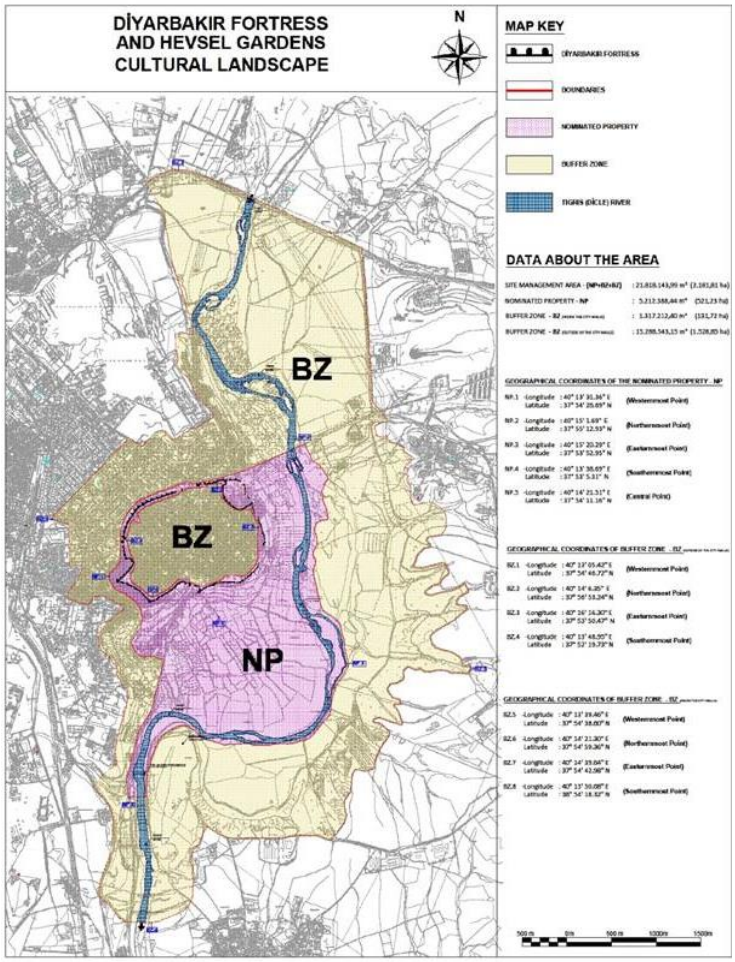
- It stands as a representation of a frontier. It encapsulates the geographic planning, construction methodologies, and material utilization of diverse civilizations.
- The site boasts of unique architectural elements, including inscriptions, doors, and distinctive decoration styles.
- It occupies a strategic bridging or junction position, linking Mesopotamia and Anatolia.
- Historically, it has been a habitation center for civilizations with varied socio-cultural backgrounds, such as the Hurrians, ancient Byzantium, medieval civilizations, Byzantine, and Ottoman empires.

- The site features a fertile valley, the navigable Tigris River, a diverse array of horticultural plants, and plentiful water resources.
- In this region, the springs, castles, and cities exemplify some of the most adept applications of water-integration techniques, serving as a significant model for various civilizations (UNESCO, 2015).

The Diyarbakır Fortress and Hevsel Gardens Cultural Landscape Area has two basic components: Nominated Area (NP) and Buffer Zone Area (BZ) (Soyukaya, 2015). The aggregate expanse of the management area is 1942.66 hectares. In this area, the NP encompasses 520.76 hectares, the Walled BZ is 132.20 hectares, and the Non-Walled BZ spans 1289.69 hectares, as illustrated in Figure 2.

Figure 2

Diyarbakır Fortress and Hevsel Gardens Cultural Landscape Area (Dıyarbakır Fortress and Hevsel Gardens Cultural Landscape Area Management Plan, 2013)

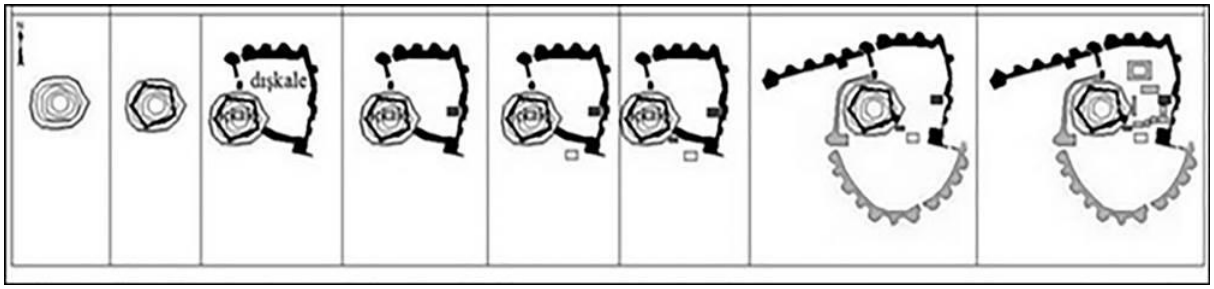


Diyarbakır Castle and Walls

The Diyarbakır Castle consists of two parts: The Inner Castle and the Outer Castle. Diyarbakır has been a significant hub since ancient times, playing host to various civilizations. Situated at the intersection of major trade routes, it has consistently served as the administrative, commercial, scientific, and artistic epicenter of the region (Dalkılıç & Halifeoğlu, 2009). Beysanoğlu (1996) narrates the city's evolutionary timeline as follows. The initial settlement is believed to have taken root on a rocky hill known as Fiskaya, referred to as the mound (Amida), before 3000 BC. From 3000 BC to 1260 BC, during the Subartu-Hurrian period, a castle was constructed encompassing the mound (Beysanoğlu,1996). As time progressed, the castle expanded, leading to the development of an Inner Castle and Outer Castle arrangement (Kakdaş Ateş & Payaslı Oğuz, 2019) (Figure 3).

Figure 3

Inner Castle Development Map (Kakdaş Ateş & Payaslı Oğuz, 2019)

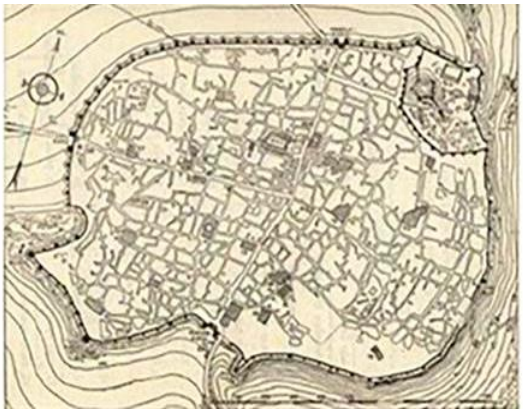


The city walls (Figure 4) continued with the Outer Castle surrounding the city after the construction of the Inner Castle. There are 82 bastions in the outer walls, and 19 in the Inner Castle (Halifeoğlu & Dalkılıç, 2005). The city walls open outward with four main gates (Dağ Gate, Urfa Gate, Mardin Gate, Yeni Gate). The Inner Castle section in the northeast of the city walls opens into the city with the Saray Gate and Küpeli Gate, and out of the city walls with Fetih Gate and Oğrun Gate (Beysanoğlu, 1996). The perimeter length of the Diyarbakır city walls in the protection area is approximately 5200 m. The walls of the Inner Castle within Suriçi extend to a length of 599 m (Nabikoğlu & Dalkılıç, 2013). When combined with the Inner Castle, the overall length of the city walls is approximately 5800 m. The total area enclosed by these city walls, inclusive of the Inner Castle, is roughly 1.57 square kilometers or 157 hectares (Nabikoğlu & Dalkılıç, 2013).

Figure 4

(a): Map of the first urban texture of historical Suriçi (Kakdaş Ateş & Payaslı Oğuz, 2019),

(b): A photo of the city walls (Soyukaya, 2015)



(a)

(b)

The Inner Castle houses the Hazrat Suleiman Mosque and Sahabeler Tomb, Old Prison Building, Saint George's Church, Courthouse A Building, Courthouse B Building, Gendarmerie Intelligence (Cavalry Regiment Union), Atatürk Command Building, Artuklu Palace, Lion Fountain, Artuklu Arch, Old Corps Building, Armory Building, and Police Station Building (Figure 5). In addition to the significant historical administrative edifices located within the Inner Castle, the Hazrat Suleiman Mosque serves as another notable landmark within the city. Prior to the restoration efforts, the dilapidated structures surrounding the mosque were removed and the area subsequently underwent landscaping improvements (Figure 6) (Demir & Kakdaş Ateş, 2020).

Figure 5

Structures in the Inner Castle Museum complex (with the new functions of the buildings): (a). Museum administration building, (b). Archaeology-2 Museum, (c). Courthouse B building, (d). Museum artifact storage, (e). Saint George's Church art gallery, (f). cafeteria building, (g). Courthouse A building, (h). Ataturk Museum, (i). Archaeological Museum administrative building (Demir & Kakdaş Ateş, 2020).

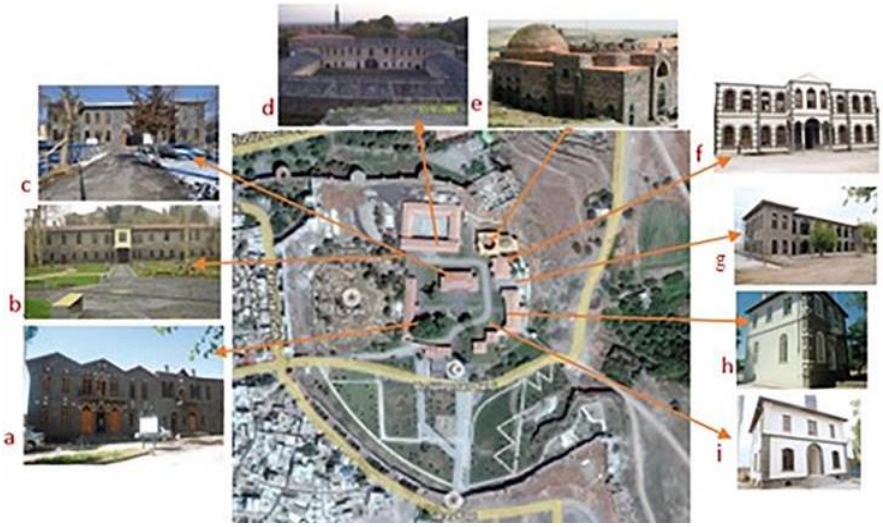


Figure 6

Slum Area Which was Converted into a Park During the Restoration of The Inner Castle (Demir & Kakdaş Ateş, 2020).

Hevsel Gardens

The borders of the Hevsel Gardens, which cover an area of 103.5 hectares today, extend from the walls of Diyarbakır to the Tigris River (Dıyarbakır Fortress and Hevsel Gardens Cultural Landscape Area Management Plan, 2013) (Figure 7). Today, agricultural activities are carried out in the Hevsel Gardens. Approximately 30 hectares of the area designated as the Hevsel Gardens are utilized for poplar groves, while 83 hectares are allocated for vegetable and fruit cultivation. These fertile agricultural lands hsot plant species specific to the region: "Delibardağan, Mint, Goosegrass, Dill, Ağbandır, Acice, Tolık (Mallow), Pırpırım (Purslane)" (Dıyarbakır Fortress and Hevsel Gardens Cultural Landscape Area Management Plan, 2013). The Hevsel Gardens are irrigated using the Anzele and Prophet Süleyman water sources. The Gardens also contain heritage items such as Diyarbakır

Watermelon, Borani, keleks, mills, sand peach, hülle, traditional agricultural tools (water traps, plows, sickles) which are included in the multicultural, multi-layered unique culture of Diyarbakır. (Diyarbakır Fortress and Hevsel Gardens Cultural Landscape Area Management Plan, 2013). In addition, the banks of the Tigris River, which is the most important water source in Mesopotamia flowing into the Persian Gulf, is adjacent to Hevsel Gardens. There are 189 bird species in Hevsel Gardens, and many mammals such as otters, foxes, squirrels, martens and hedgehogs live in them.

Figure 7

Hevsel Gardens (Soyukaya 2015)

Study Area and Method

The study area is the Sur district of Diyarbakır city center. Situated along the Tigris River, Diyarbakır occupies a position within the Mesopotamian region, renowned as the Fertile Crescent (Figure 8). The city of Diyarbakır carries the imprints of numerous civilizations, owing to its geographical positioning, fertile terrain, and pivotal location at the crossroads of primary transportation roads (Demir Kayan, 2023). The oldest known settlement is Amida Höyük (Gabriel, 1940) (Virankale, Virantepe, or Top Tepe), which is the administrative center in Suriçi, and according to research, it dates back to 4000 BC (Ökse 2015). Currently, the urban landscape encompasses 17 districts, with 4 of them serving as central hubs. The entire population of the city lived in Suriçi until 1945 (Arslan, 1999). Following the proclamation of the Republic, habitation persisted within the historical enclave of Suriçi. However, in the 1950s, because of a burgeoning population and evolving needs, urban expansion stretched beyond the city's encircling fortifications (Beysanoğlu, 2001). Subsequently, this expansion continued, marked by the inclusion of the Yenişehir district during the 1970s and the Bağlar district during the 1980s. This was followed by the

Huzurevleri and Peyas neighborhoods in the 1990s. The 2000s witnessed a pronounced wave of settlement activity within the Kayapınar district (Biçen & Vural, 2022). The contemporary urban tapestry remains in a state of ongoing evolution.

Figure 8

Fertile Crescent (a) (Ay, 2021), Diyarbakır (b) (Şehirsorgula, n.d)

The district of Sur, which constitutes one of the four central districts of Diyarbakır, is home to a population of 100,613 people, and encompasses a residential expanse spanning 119,537.49 hectares. The central neighborhoods of the district, which consists of villages and neighborhoods, were included in this study, while rural areas were excluded. The study area, confined to the vicinities of Diyarbakır Fortress and Hevsel Gardens, along with their immediate environs, encompassed an area of 7907.14 hectares, accommodating a populace of 56,349 (Table 3). A total of 20 neighborhoods in the Sur district were studied (Table 4).

Table 3

Population and Settlement Size of The District of Sur and The Study Area (KEOS, 2023; TKGM, 2023; TURKSTAT, 2022)

Database	Data
Population (TURKSTAT 2022)	100,613
Settlement Area Size (ha) (KEOS- Urban Automation System 2022)	119,537.49
Study Area Population (2022) (persons)*	56,349
Study Area Settlement Area Size (ha)* (KEOS, TKGM- Land Registry and Cadaster)	7907.14

* The author gauged this parameter employing the supplementary tools available within the online application.

Table 4

Characteristics of the Neighborhoods Studied in The District of Sur (KEOS, 2023; TKGM, 2023; TURKSTAT, 2022)

Neighborhoods	Population (Persons) *	Settlement Area Size (ha) **
Alipaşa * (including Hevsel)	1225	281.16
Cevat Paşa	2336	39.73
Bağıvar (Dicle)	8741	2067.56
Fatihpaşa	1827	178.50
İskenderpaşa	5360	10.99
Fetih (Kıtılbıl) and Yiğitçavuş	6713	2094.56
Melikahmet	4926	14.76
Yukarıkılıçtaşı	1878	1862.30
Abdaldede	763	3.00
Kebir Mosque	1400	5.48
Nebi Mosque	3046	10.25
Cemal Yılmaz	925	7.73
Dabanoğlu	2589	10.28
Hasırlı	2004	20.62
Lalebey	1661	8.81
Savaş	1354	6.23
Süleyman Nazif	562	3.18
Çarıklı (Yeşilvadi, Çaruği)	6514	1273.47
Ziya Gökalp	2525	8.53

* TURKSTAT 2022 Population Data. ** KEOS Data.

In this study, per capita of green sapces within the borders of Sur district. It is aimed at determining the amount of active green and park areas, and to determine the effect of the works carried out in the field of cultural landscape at this amount. Information about active open green areas and Hevsel Gardens was obtained by using the implementation plans, master planning notes and "Diyarbakır Fortress and Hevsel Gardens Cultural Landscape Area Management Plan" received from the Metropolitan Municipality and Sur Municipality. Development plans, on-site observation, land registry and cadastral applications, city guides and online maps were used as methods to determine the area sizes of existing active green areas in the neighborhoods of Sur Municipality. Obtaining the area sizes revealed the total presence of active green areas and their distribution according to neighborhoods. Measurements were made by including and excluding the cultural landscape area, and determine the per capita amounts of active open green areas and park areas. Thus, the

contribution of the Hevsel Gardens landscape area, which is considered an active green area, to the city is expressed quantitatively in this study.

Findings

A significant part of the active open green areas in the Sur district of Diyarbakır is in the urban historical texture and cultural landscape area. The urban green areas consists of practices aimed at protecting the urban historical texture. Thus, in the association of quantitative quantities, applications/processes need to be defined. Therefore, the findings consist of large-scale studies carried out within the district borders to increase the presence of green areas, and data revealed by on-site observations and calculations.

Active Green Areas: Sur District

The historical settlement area of Sur district consists of villages/neighbourhoods located outside the castle walls, new residential areas and the university campus. The existence of urban active open green areas in Sur district include:

- Parks located in the historical urban fabric,
- Parks and picnic areas located on the university campus,
- Urban forest,
- Cemeteries,
- Green areas built and being constructed in the protection and buffer zones of the tissue that is considered a cultural landscape area today.

The most important part of active open green areas is the arrangements made in the protection and buffer zones of the historical texture. These arrangements are around the walls and on the banks of the Tigris River, the most valuable water source of Mesopotamia, adjacent to the Hevsel Gardens.

Within the scope of the protection of Diyarbakır Castle and Walls, the green areas were arranged around the walls. In the year 2002, the Diyarbakır Metropolitan Municipality embarked on a comprehensive project with the objective of expropriating and relocating structures adjacent to the city walls. Within the scope of this project, an area around the city walls spanning 3.5 km in length and covering 12.3 hectares has been transformed into a functional green space, accompanied by the establishment of parks running parallel to the walls (Diyarbakır Fortress and Hevsel Gardens Cultural Landscape Area Management Plan,

2013) (Figure 9). Additionally, the Mass Housing Administration executed an urban renewal and development project aimed at expanding the green spaces within and in the vicinity of the Inner Castle. Executed within the cultural landscape area of the Inner Castle in Sur, Diyarbakır, this project led to the redevelopment of a 154,877 m2 area (Figure 10). The area around the city walls between Ben u Sen and the Yedi Kardeş Bastions was designated as a green area after 2015.

Figure 9

Functional Green Space Arrangements Along the City Walls (Mücadele Gazette, 2023; Soyukaya, 2015)

Figure 10

Inner Castle Landscape Arrangements (YouTube;2019; Anatolian Agency, 2017)

Landscaping works are also being carried out along the Tigris Valley in the buffer zone. Within the sequence of planned green spaces, the first stage project has been successfully concluded, while construction activities continue. Stages 2, 3, and 4 involve the deliberate planning of actions. A project has been formulated with the aim of addressing the

issue of insufficient open green spaces within the city and harnessing the untapped potential of the Dicle Valley and its environs for the urban area (Ministry of Environment, Urbanization and Climate Change, 2023). A comprehensive Master Plan and Urban Design Project was meticulously developed for the expansive 1098.55-hectare expanse encompassing the Dicle Valley. The "Diyarbakır Province Dicle Valley Kırklar Hill Recreation Area Master Plan, Urban Design, and Landscape Implementation Project" was meticulously devised and executed within the designated project area of 32.28 hectares. This area is bordered by the Hevsel Gardens to the north, the Ongözlü Bridge to the south, the Ovabağ-Diyarbakır road to the west, and Kırklar Hill to the east. This marks the initial phase, referred to as the first Stage implementation area, as demarcated by the General Directorate of Spatial Planning (Ministry of Environment, Urbanization and Climate Change, 2023) (Figure 11). Phase 1 encompasses the vicinity of the Ongözlü Bridge, a historical and cultural heritage element of significance. The recreational space surrounding the Ongözlü Bridge holds vital importance as a focal area for ensuring the preservation of the bridge itself and its inheritance for generations to come. The historical settings surrounding the bridge has been meticulously repurposed, transforming it into a vibrant space that not only preserves intangible cultural heritage, but that has also emerged as a popular destination for both city residents and tourists alike. Following the closure of the bridge to traffic, the bridge and its adjacent surroundings have undergone a complete transformation into an area dedicated to the preservation of intangible cultural heritage (Demir Kayan, 2021).

Figure 11

Diyarbakır Province Tigris Valley Kırklar Hill Recreation Area (Tigris News, 2023)

As a response to this issue, a protocol titled "Diyarbakır Alipaşa and Lalebey Neighborhood Urban Renewal (Shantytown Transformation) Project" was signed in 2008, through collaboration between Diyarbakır Governorship, TOKİ, Diyarbakır Metropolitan Municipality, and Sur Municipality. Through the ongoing urban regeneration project carried out jointly by TOKİ, Diyarbakır Metropolitan Municipality, Sur Municipality, and Diyarbakır Governorship, the aim is to "clear the Historic Wall Protection Band and Suriçi, which have been destroyed, deteriorated, and heavily worn out in the face of the intense migration that Diyarbakır has received, from shanty and/or illegal structures that do not comply with the historical texture, and to bring the historical texture back to the city in a way befitting Diyarbakır Province, which has hosted civilizations for centuries" (Çatalbaş 2012). In 2015, operations were carried out in Suriçi due to regional problems. In this process, 61% of the Cevatpaşa, Fatihpaşa, Dabanoğlu, Hasırlı, Cemal Yılmaz, and Savaş neighborhoods were demolished in terms of area and 72% of the structures (Soyukaya, 2017; Sur Report, 2018). Upon the conclusion of the operations, a decision for expropriation was enacted for 6292 out of the 7714 plots (Soyukaya, 2017). Within this framework, new construction and enhancements to green spaces were carried out within the conservation and buffer zones (Figure 12).

Figure 12

Urban Transformation Green Spaces in Suriçi: (a): 10 May 2016, (b): 4 April 2017, (c): 20 August 2023 ((a,b): (Soyukaya, 2017), (c): (Google Earth, 2023))

(a) (b) (c)

Green areas in Sur district

In this study, the composition of functional green spaces in the district of Sur includes one urban forest, two cemeteries, one nation garden, two picnic areas, and twelve established parks, and strip parks built parallel to the city wall (Figure 13 and Table 5).

Table 5

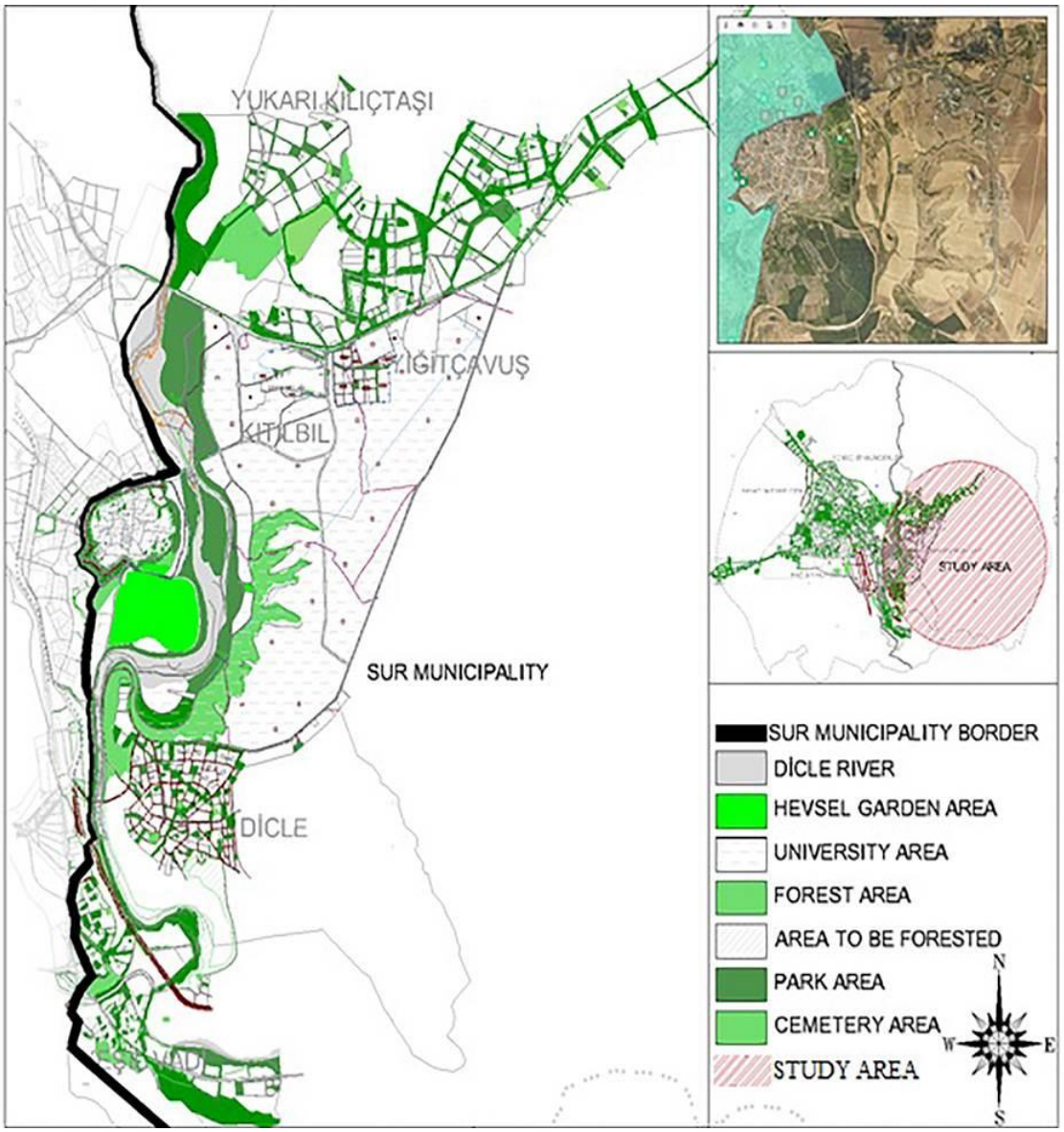
List of Extant Functional Outdoor Green Spaces in The District of Sur (Prepared by the Researcher Using the Master Development Plan, KEOS and TKGM)

Public Park Name	Address	Neighborhood	Block/Plot No.	Surface Area (m2)
Hatun Kastal Playground	In Hatun Kastal, Old Mardin Highway	Alipaşa	-	617.00
Mardinkapı Tea Garden	Adjacent to Mardinkapı Cemetery, 288–208. Sok.	Alipaşa	-	25,511.76
Hevsel Gardens (UNESCO)		Alipaşa	-	1,035,000.00
Strip parks around the city walls (123,000 m2)		Alipaşa	-	36,615.72
		Nebi Mosque	-	3514.28
		İskenderpaşa	-	15,252.00
		Melikahmet	-	49,168.00
		Lalebey	-	18,450.00
Hazrat Suleiman—Inner Castle Park (Inner Castle Local Cultural Landscape Area in Sur, Diyarbakır) (Including the Nation Garden)		Cevatpaşa	35-5.9 33-8.5.10 34-11 57-16,26,31,34,28	154,877.00
Kırklar Mountain Tigris Valley, Phase 1		Bağıvar (Dicle)	block: 0 plot: 2	322,800.00
Şahide Ana Playground	Direkhane, Kaya-Elçi St.	Fatihpaşa	Next to 57-5	4712.00
Urban Transformation green bands (ongoing)		Fatihpaşa		24,500.00
Derelict Cemetery	Bardakci 2. st. behind	Fatihpaşa	within 545/2, 62/5-6-4 and 62-9	38,950,00
Urban Transformation green bands (ongoing)		Hasırlı		38,400.00
Hacı Mehmet Cantürk Park	-	İskenderpaşa	133-7	1262.70
Hevsel Gardens Cemetery		Kıtılbıl (Fetih + Yiğitçavuş)	-	26,500.00
University picnic area	Dicle University	Kıtılbıl (Fetih + Yiğitçavuş)	in 7567-32	298,600,00

Anzele Park	İnönü boulevard Kesmeli St.	Melikahmet	621-5 318-1 318-31 621-6	189.24
Kervansaray family picnic area		Kıtılbıl (Fetih + Yiğitçavuş)	-	52,400.00
Playground		Yukarıkılıçtaşı	-	3500.00
Urban Forest	Behind of the Agricultural Equipment Institution	Yukarıkılıçtaşı	7011-4	15,000.00

Figure 13

Green Spaces (Prepared by the Researcher Using the Master Development Plan) (DBB,2009)



This study determined that there is a total of 212.74 hectares of green areas in Sur district. Subsequently, the proportion of developed urban land to functional green spaces was

calculated to be 2.69%. When historical cultural landscapes were excluded from the calculation, this ratio diminished to 1.29%. The amount of active green areas available per capita in Sur district is 37.75 m². When Hevsel Gardens and the Inner Fortress, both of which are categorized as historical cultural landscape areas, are removed from the total of functional green spaces in the district of Sur, the per capita allocation of functional green space reduces to 18.22 square meters (Table 6).

Table 6

Data of functional green spaces in the district of Sur in Diyarbakır

		Cultural Landscape Area Included	Cultural Landscape Area Excluded
Functional green space	(m2)	2,127,419.70	1,026,369.70
	(ha)	212.74	102.63
Proportion of functional green spaces to the settlement area (%)		2.69	1.29
Functional green space per capita (m2)		37.75	18.22
Number of functional green spaces		21	19

When the presence of public parks in the district of Sur is taken into account, the proportion of such areas relative to the overall urban land is 1.18%. The ratio of existing public parks outside the historical cultural landscape is 1.10% (Table 7). Public parks which are considered as urban green spaces were typically constructed as part of the city's makeover of the protected zone.

Table 7

Data of Public Parks in Sur, Diyarbakır

		Cultural Landscape Area Included	Cultural Landscape Area Excluded
Public park	(m2)	937,542.70	872,092.70
	(ha)	93.75	87.20
Ratio of public parks to residential areas (%)		1.18	1.10
Public park per capita (m2)		16.64	15.47

Number of public parks	16	15

A total of 20 neighborhoods were studied in the district of Sur. Of these neighborhoods, only 10 have public parks (Table 8) The parks are distributed in different areas of the city, depending on their function and location. Urban-scale parks covering areas over 5000 m² are the majority. When looking at the distribution of parks:

- In recreation areas organized parallel to the Tigris Valley,
- Around the walls, in the protection band, in strips,
- In the buffer zone along the Tigris valley and
- It is seen that there are parcel arrangements in the conservation area that include urban transformation practices.

These park areas contain children's playgrounds and walking paths. When analysed from a neighborhood scale, these parks were seen as unevenly distributed. There are large differences in the amount of park areas per person. One neighborhood is home to four public parks, three neighborhoods each contain two public parks, and six neighborhoods each feature a single public park (Table 8). These public parks include children’s playgrounds and walking paths. At the neighborhood level, it is evident that public parks are not evenly distributed, and there are large differences in the amount of park space per capita. In the district of Sur, 10 out of 20 central neighborhoods have zero park space per capita. Meanwhile, three neighborhoods boast of more than 35 square meters of park space per capita. The park space per capita is between 10–15 m^2 in four neighborhoods, and between 1–3 m^2 in three neighborhoods (Table 8). In the Cevatpaşa and Fatihpaşa neighborhoods, the ratio of park space per capita has seen a notable increase, owing to the presence of cultural landscape areas. The impact of urban transformation efforts is particularly noticeable in neighborhoods adjacent to the city walls, most notably in Hasırlı and Fatihpaşa.

Table 8

Public Parks in Sur

Neighborhoods	Number of Public Parks Identified	Public Park Area (m^2)	Public Park Area per Capita (m^2)
Nebi Mosque	1	3514.28	1.15
Cevatpaşa	1	154,877.00	66.30

Bağıvar (Dicle)	1	322,800.00	36.93
Fatihpaşa	2	29,212.00	15.99
Hasırlı	1	24,500.00	12.23
İskenderpaşa	2	16,514.70	3.08
Lalebey	1	18,450.00	11.11
Melikahmet	2	49,357.24	10.02
Yukarıkılıçtaşı	1	3500.00	1.86

Discussion and Results

While World Heritage cultural landscapes do not constitute a distinct classification, they are esteemed as the pinnacle of the "hierarchical scale" in terms of their heritage importance (Aplin 2007). Therefore, it is important to protect the cultural landscape with sustainable approaches. Correct strategies must be developed for conservation plans to be sustainable. Local communities, government institutions, non-governmental organizations, interest groups, experts and professionals, and the public are identified as key participants in the planning of cultural landscapes; However, it is emphasized that the official administration is in the most effective position (Selman, 2007). Institutions have a great role in the decisions taken in the Diyarbakır cultural landscape area and nearby environmental regulations. Contributions of Diyarbakir heritage sites such as their symbolic value, memory feature, experience, cultural values, tourism potential and visual landscape come to the fore. In addition, digitizing the contribution to the city can be used as data in corporate planning decisions.

Diyarbakır Fortress and Hevsel Gardens Cultural Landscape Area; It is classified as a cultural landscape area created by human hands, with its cultural and historical qualities. The discourse of tourism development in this area is emphasized in management plans and studies. However, it is important to plan tourism in the long term according to rational goals. Landorf (2009) evaluated six different industrial cultural landscape areas in England for sustainable tourism management: Blaenavon, Cornwall and West Devon Mining Landscape, Derwent Valley Factories, Ironbridge Canyon, New Lanark and Saltaire. In his study where he conducted qualitative content analysis; It addresses the relationship between heritage tourism and sustainable development. In order to reduce tourism impacts and make the importance of the area sustainable, it emphasizes its two basic principles as a long-term and holistic planning process and multi-stakeholder participation in this planning process.

Integrating sustainability principles into planning processes; It explains the analysis of the current environmental, social and economic situation, the establishment of long-term goals and planning for strategic orientation, the active participation of stakeholders, the determination and monitoring of performance criteria, and the creation of training and awareness.

Landscape structure in heritage areas is an important part of the identity of universal values. Shamsuddin et al. (2012) in his study evaluating the Factors Affecting the Character of the Urban Landscape through the George Town, Penang Unesco World Heritage Site; It states that high-rise construction threatens the heritage value. It explains that landscape character is a part of the identity of the area through landscape components. In George Town, known for its Penega Tree, Padang Kota Lama and Esplanade historical open areas; He states that activities such as sports and gatherings and that recreation areas increase the attractiveness. Gardens are the most important element of identity in the cultural landscape of Diyarbakır. The uninterrupted use of these gardens throughout the historical process and the production styles, tools and products depending on this use constitute the identity of cultural values. For this reason, it is important to preserve the historical landscape identity and revitalize the elements that are about to disappear. When the products to be produced with traditional production and use methods are presented in the green areas where they are built and will be built, the bond between modern and traditional will strengthen and add value to the heritage. At the same time, that will make a positive contribution to the city in terms of the green space needs of the local people.

For green space needs, a standard of 10 m² of open and green space per person is recommended in Turkey (URL 4). Özdede et al. (2021) suggest that this standard is lower than developed countries and that they recommend an area of 54 m² in the model they developed for green areas, the importance of which is understood in pandemic conditions. The findings made in Sur district show that it complies with the legislation in force and is close to the amount of green space suggested by Özdede et al 2021.

As a matter of fact, in Demir Kayan and Biçen's scholarly article, "An Evaluation of the Adequacy of Functional Outdoor Green Spaces in Diyarbakır City Center", a comprehensive assessment was conducted on three central districts of Diyarbakır: Kayapınar, Yenişehir, and Bağlar. In this assessment, the per capita availability of green space was quantitatively measured for each district, based on its population. The figures revealed a per capita green space of 4.67 square meters for Yenişehir, 3.21 square meters for Bağlar, and

2.88 square meters for Kayapınar. In another part of the study, a total of 116 public parks were scrutinized. The resulting data indicated per capita park space allocations of 3.30 square meters for Yenişehir, 2.05 square meters for Bağlar, and 2.32 square meters for Kayapınar (Demir Kayan & Biçen,2023). According to this present study, the district of Sur boasts a per capita green space allocation of 37.75 square meters, the highest in the city. Remarkably, this figure is at least eight times greater than those observed in the other evaluated districts. Similarly, although there are only 16 public parks, the amount of park space per capita is 16.64 m2. This represents the pinnacle of green space allocation within the city, a figure that is at least six times higher than those noted for the other districts.

On the other hand, Green areas built after 2016 in the cultural landscape area are contrary to the organic street texture of the historical city. These spatial arrangements made within the scope of urban transformation numerically increase the amount of green areas/parks per capita. However, the urban transformation has damaged the historical texture and has no qualitative harmony. Dinçer (2016), criticizes the rapid implementation of the expropriation process and joint stakeholder participation in the study. "The recovery process of the city points to a difficult, laborious and long road that has no examples in the world yet, due to its many uncertainties and unknowns. Perhaps it should be reminded here at the right time; UNESCO states that "in order for a world heritage to be well managed, all stakeholders must consider its value and protection." It tries to spread the principle of "one must have a common perspective on the subject" (17)" (Dinçer, 2016).

Diyarbakır Fortress and Hevsel Gardens are an example of where cultural landscape and urban green areas come together. Such areas meet the needs of modern cities while preserving historical and cultural richness. The preservation and sustainability of this heritage highlights the importance of urban green spaces for future generations. The conservation efforts that started in the 1990s for Diyarbakir's historical urban conservation and continued throughout the process, as well as the preparation of the candidacy file for its inclusion in the World Heritage List, contributed to increasing awareness.

In a more expansive perspective, Diyarbakır Fortress and Hevsel Gardens, located in a delineated cultural landscape zone and listed on the World Heritage roster, have amplified the area’s tourism potential by fostering heightened awareness and appreciation of the region’s cultural and natural significance. It is evident that the cultural landscape area substantially contributes to augmenting the district’s green space inventory.

The significant contribution of the cultural landscape area has served as a catalyst, inspiring the strategic organization of green spaces along the city walls and buffer zone of Tigris valley. Subsequently, green space enhancements have been executed within the historical conservation area surroundings (Tigris valley and outside the city walls), further enriching the urban greenery. Furthermore, urban transformation initiatives have also played a role in the augmentation of the quantitative increase green spaces. However, within the scope of urban transformation, the newly built green areas in Suriçi neighborhoods are completely opposite to the historical urban texture. This situation damaged the historical texture of Suriçi.

While the extent of green spaces remains below the benchmarks set by some more developed nations, there has been a discernible narrowing of this gap. When we take people's movements into account, it becomes evident that residents from 15 neighborhoods within the Suriçi settlement have the opportunity to benefit from these public parks, regardless of whether their specific neighborhoods boast green spaces of their own. The neighborhoods that have the most improved access to functional green spaces and public parks, particularly due to enhancements in the protected area and buffer zone, are the Cevatpaşa, Alipaşa, Fatihpaşa, Kıtılbıl (Fetih and Yiğitçavuş), and Hasırlı neighborhoods.

In the study, the value of 37.75 m² per capita of urban green areas shows that the cultural landscape area (Hevsel Gardens) makes a significant contribution to the green area presence of the district. In the buffer zone (Suriçi historical city texture), with their promising tourism potential, incorporating more functional green spaces in the areas frequented by visitors will offer a refreshing and healthy solution to sustainable urban and cultural landscape planning.

Recommendations

Cultural landscape areas make a quantifiable contribution to the inventory of functional green spaces and public parks within the residential zones they encompass. Nonetheless, the following recommendation is put forth to enhance the qualitative aspects of potential cultural landscape areas.

Arrangements within the demarcated buffer zones intended for conservation areas should include recreational landscapes and public parks. The qualities of these areas may be enhanced through the strategic exploitation of the inherent dynamics present within the cultural landscape. It is widely understood that functional green spaces, which we have come

to appreciate even more after the pandemic, benefit society by creating a healthier environment. In these regions, with their promising tourism potential, incorporating more functional green spaces in the areas frequented by visitors will offer a refreshing and healthy pathway.

The following suggestions give an overview of possible action plans in buffer sone (not the Suriçi historical city texture):

- Although Hevsel Gardens is a protected area, it is used by individuals for agricultural activities and entrances are limited. For this reason, organizing local product promotion days and special fair areas in the buffer zones,
- In buffer zones; Increasing agricultural activities and encouraging and encouraging traditional forms of production,
- Creating areas for wild pigeon (Boran) and/or other bird watching,
- Contributions can be made to the brand value and identity of the city by carrying out activities such as organizing festivals along the Tigris River.
- The Tigris River, one of the most important water resources of Mesopotamia, is in the buffer zone of the landscape area. The natural structure of this important river; Dams are constantly deteriorating due to material removal from the river bed (Halifeoğlu et al. 2009), environmental pollution (Halifeoğlu et al. 2009) and exposure to human interventions. Bringing the importance of the Tigris River to the agenda, raising awareness, taking responsibility and carrying out effective work to reduce degradation can contribute to the protection of the heritage area and the more effective use of green areas.
- It is recommended to increase the regulations in buffer zones that reflect the unity of traditional and modern elements with sustainable approaches that are compatible with ecological balance.

Basing sustainability principles on planning in the protection of this area will bring success in achieving more rational goals.

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