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Evaluation of the Kahramanmaraş Sütçü İmam University Garden Landscape Design in the EXPO 2023 Onikişubat/Kahramanmaraş Country Gardens Area in Terms of Implementation and Post-EXPO Use

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Abstract

This study was carried out to evaluate the country gardens area created within the scope of EXPO 2023 Onikişubat/Kahramanmaraş (EXPO 2023), specifically focusing on the Kahramanmaraş Sütçü İmam University (KSU) garden. First, the landscape design and implementation process of the area were examined, and then the current use status of the site was evaluated through field observations conducted in 2025 and 2026. Within the scope of the field studies, the use status, maintenance level, structural elements, and plant materials of the area were examined and documented through site photographs. The findings showed that the general EXPO area is actively used, while the country gardens section remains idle in terms of use, maintenance, and management. Most structural elements remained in place, although partial deterioration was observed, while planted areas deteriorated due to insufficient maintenance. As a result of the study, it was revealed that post-event use and maintenance processes are important for the sustainability of EXPO areas.

Keywords: *EXPO 2023, Country Gardens, Landscape Design, Post-Use Evaluation, KSU.*

EXPO 2023 Onikişubat/Kahramanmaraş Ülke Bahçeleri Alanında Kahramanmaraş Sütçü İmam Üniversitesi Bahçesi Peyzaj Tasarımının Uygulama ve EXPO Sonrası Kullanım Açısından Değerlendirilmesi

Öz

Bu çalışma, EXPO 2023 Onikişubat/Kahramanmaraş (EXPO 2023) kapsamında oluşturulan ülke bahçeleri alanını, Kahramanmaraş Sütçü İmam Üniversitesi (KSÜ) bahçesi özelinde değerlendirmek amacıyla gerçekleştirilmiştir. Çalışmada, öncelikle alanda uygulanan peyzaj tasarımı ve uygulama süreci incelenmiş, ardından 2025 ve 2026 yıllarında gerçekleştirilen arazi gözlemleri ile alanın mevcut kullanım durumu değerlendirilmiştir. Arazi çalışmaları kapsamında alanın kullanım durumu, bakım düzeyi, yapısal ve bitkisel elemanlar incelenmiş ve saha fotoğrafları ile belgelenmiştir. Elde edilen bulgular, EXPO alanının genel olarak aktif kullanıldığını, ancak ülke bahçeleri bölümünün kullanım, bakım ve yönetim açısından atıl kaldığını göstermiştir. Yapısal elemanların büyük bölümü yerinde kalmış olmakla birlikte kısmi bozulmaların bulunduğu, bitkisel alanlarda ise bakım eksikliğine bağlı bozulmaların oluştuğu belirlenmiştir. Çalışma sonucunda, EXPO alanlarının sürdürülebilirliğinde etkinlik sonrası kullanım ve bakım süreçlerinin önemli olduğu ortaya konulmuştur.

Anahtar kelimeler: *EXPO 2023, Ülke Bahçeleri, Peyzaj Tasarımı, Kullanım Sonrası Değerlendirme, KSÜ.*

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1. Introduction

EXPOs are large-scale international events that attract broad audiences. They stimulate economic activity in host cities, promote cultural values, and support the development and reorganization of urban spaces. They also provide a platform for countries to present their scientific, technological, and cultural achievements and facilitate knowledge exchange among societies (Kaya & Erbaş, 2022; Nichols, 1966). Horticultural EXPOs contribute to landscape architecture by supporting the development of urban green spaces and presenting landscape approaches shaped by different cultural traditions.

Although EXPOs are temporary events, they are generally expected to produce lasting effects on their host cities. The concept of "event legacy" refers to the physical and social assets that remain after an event has ended (Moggi et al., 2025). The continuity of these assets depends on effective planning, maintenance, and management. A major concern is whether the spaces developed for mega-events remain functional after the event period (Deng et al., 2016). Previous studies have shown that EXPO sites may lose their intended functions over time and fail to achieve their planned post-event use. Despite their role in promoting urban development, their subsequent use and spatial transformation often remain below initial expectations (Minner et al., 2022). Post-event use and management therefore need to be incorporated into EXPO planning from the outset.

Country gardens are designed to represent the cultural identity and spatial traditions of participating countries. They allow countries to express their identity through landscape design and provide visitors with opportunities to experience different landscape concepts (Koch, 2024). In addition to their exhibition function, these gardens may contribute to the provision of public open spaces and the transformation of urban environments (Ballester, 2014).

The long-term use of gardens and landscape areas developed for EXPOs requires design decisions that account for post-event maintenance and management. A country gardens zone containing gardens associated with different countries was established as part of EXPO 2023 Onikişubat/Kahramanmaraş. This study evaluates this zone, with particular emphasis on the Kahramanmaraş Sütçü İmam University (KSU) garden, according to its design, implementation, and post-EXPO use. The landscape design and implementation stages were examined, and field observations were conducted in 2025 and 2026 to assess the current condition of the site. The assessment focused on current use, maintenance practices, and the condition of built and plant components. The findings were used to determine how design and implementation decisions affected the subsequent use and maintenance of the garden.

2. Material and Method

2.1. Material

The study area is located in the country gardens section of the EXPO 2023 site in Onikişubat district, Kahramanmaraş. The EXPO site is located approximately 15 km west of the city centre along the Kayseri highway. It lies near the Ceyhan River, Sır Dam, Kılavuzlu Dam, Menzelet Dam, and the Kılavuzlu recreation area. The Kahramanmaraş Organized Industrial Zone is located west of the site.

The EXPO 2023 site covers approximately 789,000 m². The country gardens section covers approximately 170,000 m² and contains plots ranging from 250 to 1,000 m². The KSU garden occupies one of these plots and covers 354.45 m². Figure 1 shows the general location of the study area, and Figure 2 shows the boundaries of the KSU garden.

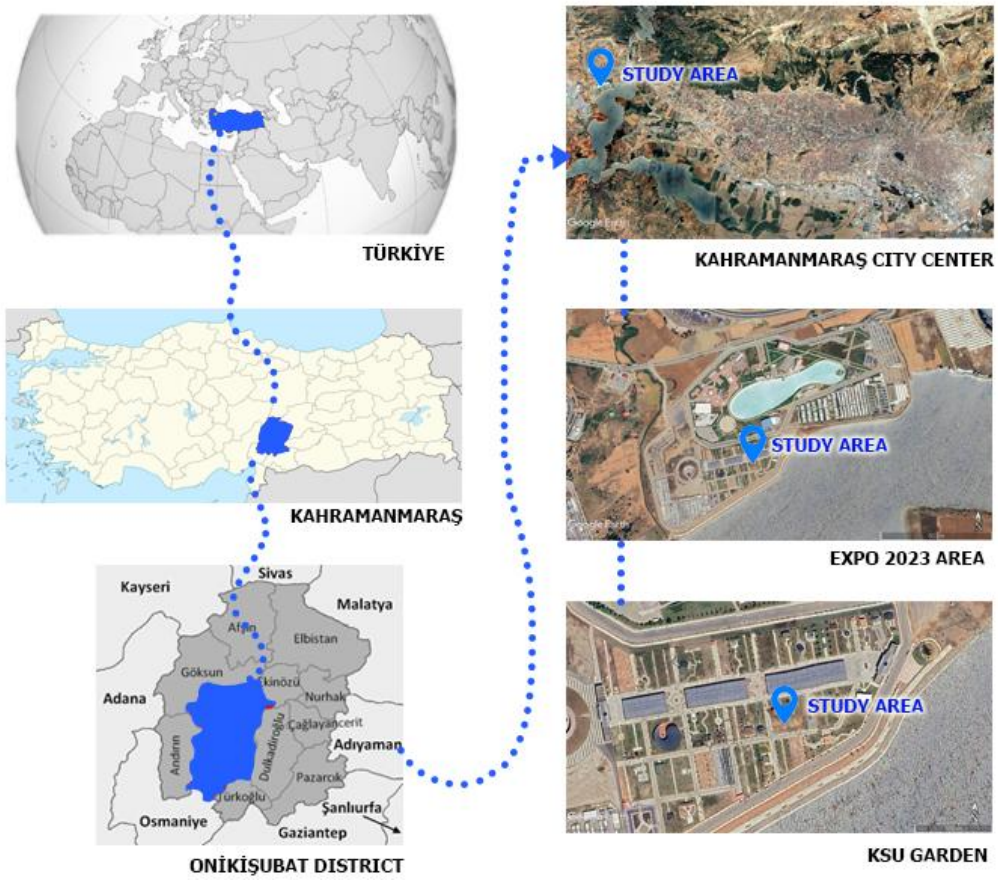


Figure 1. Location of the study area (adapted by the author using Google Earth (2026), D-maps (n.d.))



Figure 2. Study area boundary (adapted by the author using Google Earth (2026))

2.2. Method

The study evaluated the design, implementation, and post-EXPO use of the country gardens section, with the KSU garden selected for detailed assessment. An initial field observation was conducted immediately after the opening of EXPO 2023 in October 2023 to document the implemented condition of the garden. Subsequent field observations were conducted in May 2025, October 2025, and May 2026 to assess changes in use, maintenance, and physical condition over time.

The implemented landscape design was examined according to its spatial organization, circulation system, site furniture, structural components, and planting arrangement. The condition recorded immediately after the opening was compared with the final design project to identify preserved,

modified, and omitted design decisions. Later observations were compared with the post-opening condition to determine changes occurring during the post-EXPO period.

The current condition of the site was assessed under eight categories: general use, accessibility, urban furniture, structural components, infrastructure, trees and shrubs, lawn areas, and groundcover plants. Each category was evaluated through field observations and photographic documentation.

A three-point scale was used to classify the condition of each category. Components that had lost their function were assigned a score of 1, partially deteriorated components were assigned a score of 2, and preserved components were assigned a score of 3. To ensure consistency, the same category definitions and scoring criteria were applied during all field visits, and the assessments were cross-checked using dated field photographs and field notes.

3. Findings and Discussion

The assessment covered the implemented landscape design, changes made during construction, post-EXPO use, maintenance, built components, and vegetation condition of the KSU garden.

3.1. KSU garden landscape design and post-implementation status

The landscape design project for the KSU garden was prepared by Tuğluer & Kısakürek (2023). The project was revised several times during the design stage. The 6 February 2023 Kahramanmaraş earthquakes delayed the opening of EXPO 2023 and created uncertainty regarding the implementation schedule. After the opening date was announced as 14 October 2023, the project was simplified to accommodate the limited construction period.

The final project included a reception area representing the university at the entrance and a main circulation axis extending through the centre of the garden. Seating areas and site furniture were positioned around this axis. Andesite and concrete paving materials formed the main hard surfaces, while planting areas defined the spatial boundaries.

The main axis organized pedestrian circulation and connected the different sections of the garden. Trees, shrubs, lawn areas, and groundcover plants were combined to form the planting composition. Figure 3 presents the revised landscape design project, and Figure 4 presents the dimensioned plan.



Figure 3. EXPO 2023, KSU garden: Revised landscape design project following the February 6, 2023 Kahramanmaraş earthquakes (Tuğluer & Kısakürek, 2023)

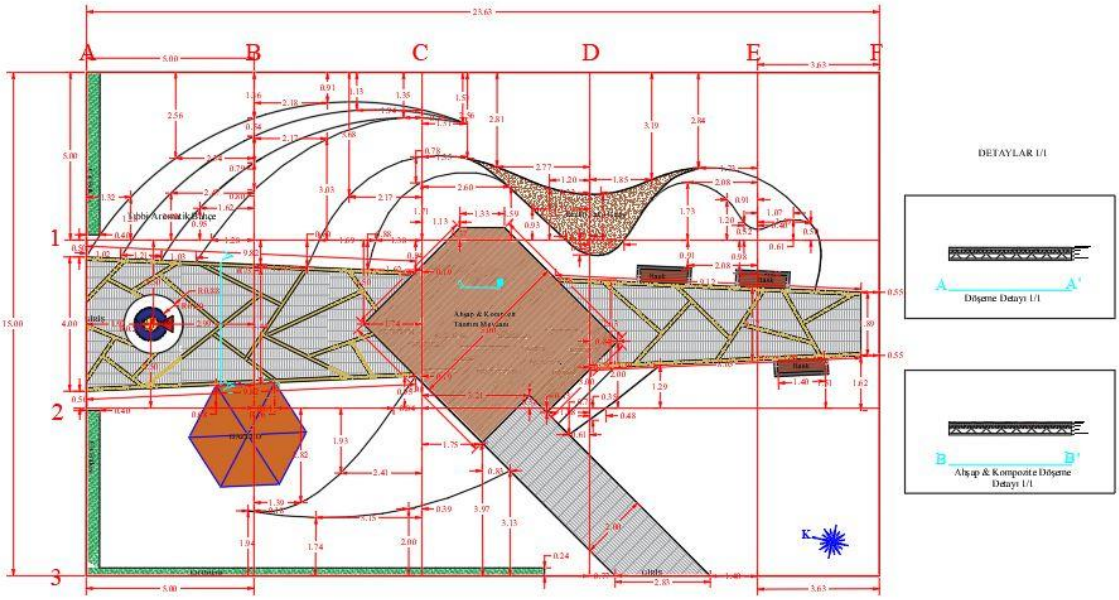


Figure 4. EXPO 2023, KSU garden landscape design project, dimensioned plan (Tuğluer & Kısakürek, 2023)

The implementation largely preserved the main design concept. The central axis and general spatial organization were maintained. However, the connection path planned for the adjacent plot was omitted because a connection between the two plots could not be established.

Surface patterns were created by varying the spacing and orientation of the paving units. Plant materials were supplied from the inventories of the KSU Construction Works Department and Onikişubat Municipality. The boundaries of the planting areas were preserved, but the number and diversity of plants were lower than those specified in the original design (Figure 5).



Figure 5. Post-opening images of the EXPO 2023 KSU garden (Tuğluer, 2023)

3.2. Evaluation of The Current Status of The Area

Field observations conducted in 2025 and 2026 revealed that while the EXPO area was generally actively used, the country gardens section remained idle and not actively utilized. It was observed that there was no security or control at the entrance to the country gardens, and the shuttle vehicles at the entrance were parked and left unused. Similarly, the KSU garden was found to be lacking maintenance, control, and use (Figure 7).

In terms of infrastructure, the lighting systems were found to be operational, but it could not be determined whether the irrigation system was being used regularly. Upon examination of structural elements, it was determined that the KSU logo at the entrance was missing, and there were deformations in places on the pavement and pedestrian walkways. However, some structural elements, such as the gazebo used as a gathering area and seating unit, were still in place, but had become dysfunctional due to the area's lack of use (Figures 8 and 9).

Upon examination of the plant elements, it was determined that no maintenance had been carried out and the plants were largely left unattended. Some of the tree and shrub groups were still alive, while some individuals showed signs of drying and mortality. It was determined that the lawn areas were neglected, partially dried and weakened. Observations made during the spring revealed that the lawn areas and ground cover plants were heavily overgrown with weeds reaching approximately 1 meter in height (Figures 8 and 9). This clearly indicates a lack of regular maintenance in the area. An evaluation graph and table showing the use status of the area are given in Table 1 and Figure 6.

Table 1. Current Use Status Assessment of the EXPO 2023 Country Gardens and KSU Garden Area (2025–2026)

Functions	Current Use Status	Scores
General use condition of the area	Lost its function	1
Accessibility within the area	Lost its function	1
Urban furniture elements	Preserved	3
Structural elements	Partially deteriorated	2
Infrastructure	Partially deteriorated	2
Trees and shrubs	Partially deteriorated	2
Lawn areas	Lost its function	1
Groundcover plants	Partially deteriorated	2
Overall assessment	**14/24 points;** **mean = 1.75/3; performance = 58.33%**	

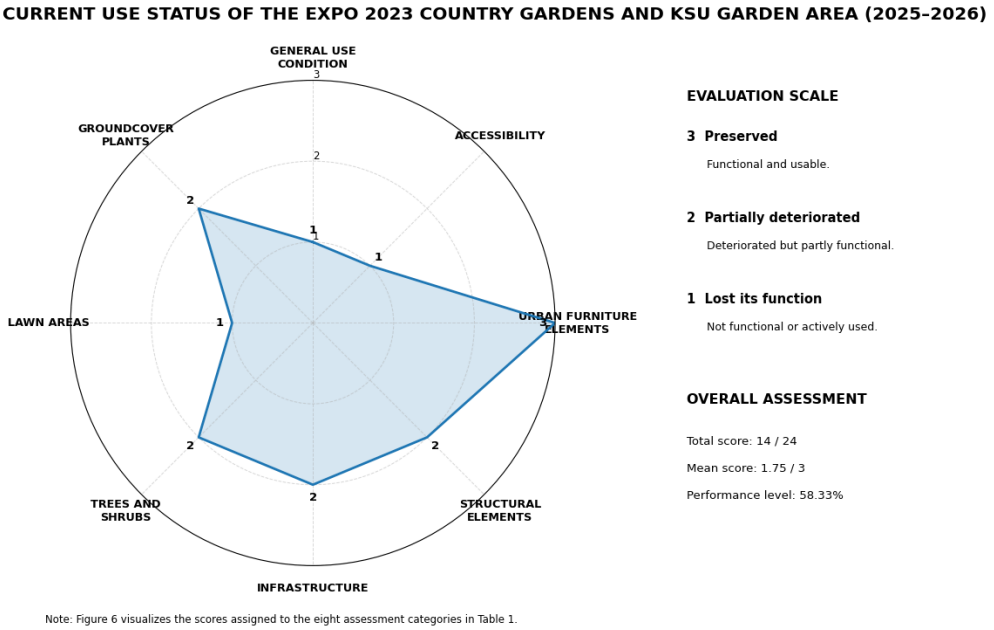


Figure 6. Performance of the current use status of the EXPO 2023 country gardens and KSU garden area (Tuğluer, 2026b)



Figure 7. Images of the entrance and plaza section of the EXPO 2023 country gardens (Tuğluer, 2025; 2026a)



Figure 8. Current status of the EXPO 2023 KSU garden during the summer–autumn period of 2025 (Tuğluer, 2025)



Figure 9. Current status of the EXPO 2023 KSU garden during the spring period of 2026 (Tuğluer, 2026a)

The assessment produced a total score of 14 out of 24, a mean score of 1.75 out of 3, and an overall performance level of 58.33%. These values indicate partial deterioration rather than complete functional loss. Most physical components remain in place, but general use, accessibility, and lawn areas have lost their intended functions. Structural elements, infrastructure, trees and shrubs, and groundcover plants were assessed as partially deteriorated, while urban furniture was preserved. Completion of the design and construction therefore did not ensure sustained use. Accessibility, maintenance, visitor-oriented functions, and effective management determine whether a public landscape remains active. Horticultural EXPOs are intended to facilitate interaction with nature, generate social benefits, and support continued public use (Chen et al., 2025). However, the country gardens section, particularly the KSU garden, no longer provides the experience envisioned in the original design, although the wider EXPO 2023 site remains active. Çakır (2023) organized the Şehit Ömer Halisdemir Square design around local needs through accessible circulation, gathering and seating areas, recreational facilities, and service functions. This comparison shows that accessible design and functional diversity support public use, but their benefits cannot be sustained without continued operation and maintenance.

Previous studies have reported that visitor numbers and levels of use often decline after EXPO events (Yang et al., 2021). Although EXPOs contribute to the physical and spatial development of host cities (Batuhan, 2020), these benefits diminish when long-term use and management are not sustained. EXPO sites may also create an architectural and structural legacy, but the continuity of this legacy depends on regular use, maintenance, and management (Polat & Tezcan, 2023). The Kirazlıdere Glass Observation Deck provides a contrasting example. Çakır & Tekin (2025) reported that controlled access, year-round maintenance, social facilities, lighting, and clear spatial organization supported intensive visitor use and a positive user experience. At EXPO 2023, the main site remained active and

maintained, whereas the country gardens section was unused and neglected. Visitor activity was concentrated in maintained areas and declined markedly in sections without regular upkeep.

EXPOs generate economic, social, and spatial benefits for host cities during the event period. Preserving these benefits requires post-event use scenarios to be defined during the planning stage (Güven & Suna, 2022). Infrastructure alone cannot sustain site functionality without users, maintenance, and active management. The long-term performance of EXPO sites depends on their post-event functions and integration into the urban system as well as their design and implementation. Reuse and urban integration influence the long-term performance of these large-scale investments (Gao, 2020). The current condition of the country gardens section shows how an implemented landscape design can lose its function when continued use is not supported.

The design and implementation of the KSU garden were completed, but use, maintenance, and management were not sustained. Insufficient maintenance and the absence of access control reduced site functionality and visitor presence. The comparison with previous studies confirms that the success of landscape design depends on accessible and diverse functions, continued use, regular maintenance, and long-term management.

4. Conclusion and Suggestions

This study evaluated the design, implementation, and post-EXPO use of the country gardens section and the KSU garden at EXPO 2023. The design was largely implemented, but use, maintenance, and management activities were not sustained after the event. The main EXPO site remained active, whereas the country gardens section was unused.

Most structural components remained in place. However, insufficient maintenance reduced the visual and functional quality of the planted areas. Lawn and groundcover areas lost much of their original function, and some trees and shrubs showed drying, decline, or mortality.

The operational lighting system showed that part of the infrastructure remained functional. Nevertheless, the presence of infrastructure did not support active use in the absence of maintenance, access control, management, and visitor-oriented functions.

Post-event use scenarios should be defined during the planning stage of EXPO projects. The country gardens section requires regular maintenance, controlled access, active management, and new functions that attract visitors. Reuse strategies should connect the area with the main EXPO site and the surrounding urban structure.

Future EXPO projects should include long-term operation, maintenance, and management plans before implementation. These plans should identify the responsible institutions, required resources, maintenance schedules, access arrangements, and functions that will support continued public use after the event.

Acknowledgments and Information Note

The landscape design project addressed within the scope of this study was prepared by Tuğluer & Kısakürek (2023), faculty members of the KSU Department of Landscape Architecture, in accordance with the assignment letter dated 04.11.2022 and numbered 2022/165 issued by the Rectorate of Kahramanmaraş Sütçü İmam University.

The article complies with national and international research and publication ethics. Ethics Committee approval was not required for the study.

Author Contribution and Conflict of Interest Disclosure Information

The article was written by a single author. There is no conflict of interest.

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