DOI 10.15593/2409-5125/2019.01.04

УДК 711

Ali Kaihan Stanikzai, A. Maksimov

DESIGN FOR OUTDOOR RECREATION ZONE: THE CASE STUDY OF KHARGA NATURAL LANDSCAPE, KABUL (AFGHANISTAN)

Recreation provides multiple pathways to well-being for individuals, communities, and for our built and natural environments. Conservation or creation of large open spaces in a city for recreational purpose can also protect natural and cultural features. At the same time in Kabul city, the pressure of population growth intensification and deficiency of outdoor recreation zone alongside with other challenges potentially resulted in the loss of environmental quality and open lands and this issue need attention. There exists an urgent need to retain and generate recreation spaces as needed by the existing and future generation of the population of Kabul.

This paper looks into the possibility of improvement and development of existing recreation zone of Kharga in the Kabul and overall raises on design for outdoor recreation zone.

Keywords: outdoor recreation zone, Kabul city, Kharga Recreation Zone, SWOT analysis, urban planning, environmental quality.

Outdoor recreation and its cousin, nature tourism, are the big growth areas in leisure and holiday activities today. As the populations of most countries become more urbanized, and as work becomes less and less connected with the land, many more people are seeking to regain a connection with nature and with wild landscapes. There are many reasons for visiting and exploring the great outdoors: physical exercise, release from the stresses of city life, fresh air, getting closer to nature, enjoyment of the scenery, hunting and fishing... the list goes on. For most people it is probably a combination of reasons. The trends in how people spend their time change from year to year, but contain broadly the same ingredients: a chance to escape from the city, to be alone, to be close to nature, and to relax and enjoy oneself. The activities that people pursue range from strenuous hiking into wild mountainous areas, days from the nearest settlement, to a gentle stroll in a park or woodland a short distance out of town, or just sitting and looking at the view [1].

Ali Kaihan Stanikzai, Maksimov A. Design for Outdoor Recreation Zone: The Case Study of Kharga Natural Landscape, Kabul (Afghanistan). PNRPU. Applied ecology. Urban development. 2019. No. 1. Pp. 53-63. DOI: 10.15593/2409-5125/2019.01.04

Станикзай Али Кайхан, Максимов А.Д. Зона отдыха Харга в Кабуле (Афганистан) // Вестник Пермского национального исследовательского политехнического университета. Прикладная экология. Урбанистика. – 2019. – № 1. – С. 53–63. DOI: 10.15593/2409-5125/2019.01.04

Recreation planning is about assessing the demand, both actual and potential; about assessing the capacity of the land base to meet that demand in a sustainable way; and about using available resources wisely to optimize the potential. In this paper the Kharga reservoir area in Kabul city has been studied and analyzed for development, improvement and transforming to the modern recreation zone (Fig. 1).

Fig. 1. A view from Kharga Natural Landscape
Рис. 1. Вид на природный ландшафт Харга

The Kharga reservoir county is a weekend resort for city residents and offers such recreational activities as golfing, boating, and catering. Furthermore the reservoir county surrounded by mountains and low altitude soil hills which grants natural beauty to the site. Situated close to the center approximately 9 km west of Kabul city and covering total area of 750 Ha (Fig. 2, Table 1).

Fig. 2. Situation
Рис. 2. Местоположение

Table 1

Preliminary introduction of Kharga Reservoir County

Таблица 1

Характеристики рекреационной зоны Харга

No.	Items	Details
1	Official Name in KMP	Kharga Reservoir
2	Local Name	Band-e-Qargha
3	Situated	West of Kabul city
4	Destination from Center	9 km
5	Foundation year	1951s
6	Total area of Reservoir County	750 Ha
7	Total area of Water Reservoir	82 Ha
8	Existing recreation activities	Boating, catering, golfing

Kabul is one of the largest city and has been the capital of Afghanistan since 1776s. The city is believed to have been founded between 2000–1500 BC and it is mentioned in Hinduism's sacred Rigveda text (ca. 1700–1100 BC) as a vision of paradise set in the mountain. It was a center of Zoroastrianism and later Buddhism [2]. Kabul is one of the fastest population growing province of Afghanistan. Due to returnees increase the population growth's stress of the Kabul, 5 million returnees returned to Afghanistan after 2002 [3]. Currently, Kabul is slightly under 4.5 million inhabitants, while this amount was about 1.5 million in the 2008 and total predicted population for 2031 are 8 million people [4, 5], the city along with other challenges suffers from the deficiency of high quality recreation zones.

For the better administration, Kabul city divided into 21 sectors or districts and Khargha natural landscape situated in the 14th district.

Kharga reservoir is a man-made lake which is built in 1933s on Paghman's river for the irrigation destination and after a short time site has been interested as a recreation zone [6]. Kharga reservoir county is popular between city inhabitants because of its natural view like existing of mountain, hills and water bodies. It is imperative there be a guiding plan for future development, improvement and maintenance for this site.

Advantages of Urban-Parks like economical values, health (Psychological and Physical) benefits, environmental and social benefits have been shown in numerous researches [7, 8]. Recreation zones and open spaces enhance the excellence of life in the cities [9]. Urban parks fulfill important immaterial and non-consumptive human needs [10]. It reduces stress [11] and results in a good mental health [12, 13]. Provide sense of peacefulness & tranquility [14] and

reduce aggression [15]. In addition, they show lower level of fear, fewer incivilities and less aggressive and violent behavior. Furthermore, those who go to parks and recreation zones are in good physical health.

In addition to increasing property values, open space boosts local economies by attracting tourists and supporting outdoor recreation. Nearness to park and water may influence the environmental and economic value [16]. It is purifier of air and reduces pollution and helps keep the air clean from harmful pollutants. Total suspended particles, sulfur dioxide (SO₂) and nitrogen dioxide (NO₂) could be removed at higher extent [17], and in addition, absorb carbon dioxide and other harmful greenhouse gases. It provides shelter from heat and wind and gives the aesthetic look to urban parks.

Unsecured circumstances in Afghanistan have severely damaged the natural environment. Side by side trees and highways in Kabul province and nearby areas were cut off due to war, with the destruction of irrigation system [18]. Modern planning of the greenery and parks in Afghanistan is in its infant stages. Despite the favorable conditions for plantation, fertile land and water resources in and around greater Kabul basin the parks and green belt have been experiencing descent due to improper or no maintenance.

This paper tries to shed light on disadvantages of existing recreation facilities in the Kharga resort zone and on the other hands, highlight the modern requirements for the site to present the concept of transforming the natural Landscape of Kharga, Kabul (Afghanistan) into the Modern natural recreation area on the basis of a comprehensive analysis. This study aims to upgrade capacity and facility of existing recreation zone of Kharga according to the modern social demands and global standards to fulfill the needs of inhabitants in the recreation field, by green built in the site support the struggle against air pollution in the city, enhance the environmental condition, rate of urbanization and consequently support tourist industry in the city.

Case of study. Kharga Reservoir County is a popular picnic zone in the Kabul city offering such recreational activities as boating, hiking, catering and golfing. Situated in the west of the city in the destination of 9 km from the center. Many citizen of Kabul visit the area as weekend resort. Kabul city population dramatically increased in the last decade, High increase in population was observed between 2006 and 2018 due to the unstable security situation in some other cities of Afghanistan and returnees (Table 2). It is clear more population needs more urban infrastructure facilities, along with other challenges deficiency of high-quality recreational zones are the critical issues behind the lower rate of urbanization in Kabul and overall in Afghanistan,

existing picnic zones and parks in Kabul city cannot fulfill the recreational demands of inhabitants. Thus it is imperative there be a guiding plan for future development, improvement, and maintenance of existing recreation zones along with designing of new recreational area in the city with the alignment of the Kabul master plan.

Table 2

Census Data Kabul City. As per 2017 central statistics
organization estimation

Таблица 2

Данные переписи г. Кабула в соответствии с оценкой
Центральной статистической организации на 2017 год

Kabul City	Total	Male, %	Female, %
Population	4.5 million	52	48
0–14 year	40.92 %	51	49
15–24 years	22.22 %	50	50
25–54 years	30.35 %	50	50
55–64 years	3.92 %	50	50
65 years and over	2.59 %	51	49

Transforming the natural landscape of Kharga, Kabul (Afghanistan) into the Modern natural recreation area enhance the environmental condition, the rate of urbanization in the city and support local tourist industry even global but in case of the better security situation in Afghanistan. Currently country endure bad security situation, although many active movements try to return peace and stability in country and hopes are still alive for a stable country in near future but current security situation is not satisfied and it is one of the main barrier against tourist industry in the country.

Existing condition analysis of Kharga reservoir area present image of a natural landscape that includes mountains, low altitude soil hills, and reservoir (Fig. 3). due to improper or no maintenance plantation and greenery have been experiencing the descent, lack of effective guiding plan for the development and improvement of the area cause appearances of small businesses in the rough form, disability in the effective way of land using, and finally caused low-quality environmental conditions and low rat recreation area. On the other hand, the site has a large space for improvements and planning, the reservoir as a central element of the recreation area create opportunity for more recreational activities and overall the site has the potential to provide all the required facilities in a way to accommodate active and Passive recreation.

Fig. 3. Existing Condition of the Site
Рис. 3. Современное состояние территории

Recreation must provide activities, programs and services that people can enjoy in Leisure time. In this respect, besides giving service to community recreation also require administrative responsibilities. It must offer many opportunities to every sector in society such as children, young and old, healthy and disabled, rich and poor people. It should serve a wide range of goals and include benefits for the participants and their families, community, and also for the large-scale as economy or environment.

SWOT-analysis of the territory:

Strengths • Location of the area (near to the center) • Availability of the area by Public and private transport • The natural view of the area • Enough free space for planning and developing • Existence of water bodies • Popularity of the site between inhabitants • Existence of an initial structure for developing (a guideline exist)	Weaknesses • Unstable water level of the Reservoir • Uneven ground surface
Opportunities • Existence of water reservoir offer such recreational opportunity as boating, swimming, fishing, and surfing • Existence of large free space • Existence of mountain give the opportunity to organize such recreation activities as mountain climbing, ski slopes in the winter season	Threats • Unstable water level of the reservoir Unsecured circumstances of Afghanistan

When it comes to improving, developing or designing a recreation zone it is effective to evaluate each character of the researched area and carry out the SWOT analysis to build on the strengths, minimize the weaknesses, take up as many of the opportunities as possible and avoid the threats.

Location of the researched area (close to the center of the city), availability of the site by the public and private transports, the natural view of the site (the existence of mountain, soil hill, and reservoir), enough free space for the planning and development of the site, the existence of water reservoir, the existence of golf ground, the existence of an initial structure for recreation zone, the popularity of the site between inhabitants of the city. These are all the strong sides of the territory.

Unstable water level of the reservoir in different season of the year and uneven ground surface are the weak sides of the area

Kharga reservoir area has enough opportunities and potential to become many functional recreation zones. The water reservoir deems as a central element of the recreation zone that offers such recreational opportunities as boating, surfing, swimming, and fishery development.

The existence of large free space in the area given the opportunities to plan new parks and places more entertainment facility for every sector of the society.

The existence of mountains around the reservoir gives opportunities like mountain climbing, and ski slopes in the winter season.

Unstable water level of reservoir and unsecured circumstance of Afghanistan are critical threats for the area.

As the relevant experience of foreign countries, Indian valley reservoir can be a bold example. In scale, the Indian Valley is bigger than Kharga reservoir but in the uniformity are the same. Indian Valley Reservoir is 300 K acres recreation zone situated in California, USA. the Indian Valley reservoir is a manmade lake offering such recreational activities as boating, fishing, hiking, camping, bird watching, hunting and bicycling [19] (Fig. 4).

Fig. 4. Indian valley California, USA
Рис. 4. Индиан-Вэлли в Калифорнии, США

Before designing sites and facilities it is important to put the right kinds in the right places. Therefore urban analysis of the territory are carried out which covered sides like ground surface relief, transport and pedestrian access, cultural functions and recreation infrastructure.

The territory has complicated relief, ground surface is uneven even most part of the territory has soil hills shape.

The researched area accessible by both public and private transports. Currently, Reservoir County connects by the asphalt road to the center of the city and in this direction exists public bus route. This route of public transport is popular by the local name of Qargha-city route.

Consideration of local culture and tradition during the design period can lead a project to success. Afghanistan is an Islamic country, Islam has its own rules about the recreation zones or public spaces and these rules make different the style of Islamic recreational zones than westerns. For instance, dance floor or men and women mixed swimming zone are not considered acceptable in Islamic society.

Urban and regional planning are all about the number of people. How many people live in the surrounding territory? How many people will use or visit the site and for which destination they use the site? The number of visitors, with over 60,000 per month in mid-summer and 0.5 million per year reported by a research for an existing recreational zone in Kabul city (Bagh-e-Babur) [20]. Bagh-e-Babur compare to Kharga reservoir is too small which cover only 11 Hectares land and provide such recreational activities as swimming, hiking, and enjoying from a green and natural environment of the garden. since Kharga Reservoir area is too big and has the potential of providing recreational activity five-time more than Bagh-e-Babur then the projected visitors for Kharga reservoir can be twoup to three time more than Bagh-e-Babur.

Conclusions. To sum up, on the basis pieces of analysis which carried out it is possible to draw some conclusions.

Open spaces or green areas which are used for wide range of recreational activities are of major significance to the quality of life in a city and have an important role in the sustainable management of natural and physical resources.

The demographic studies of the Kabul city show a high increase of population in the last decade which along with other urban elements establish the need for recreation spaces.

The study of Kharga reservoir county show that the area has the potential for development, improvement and modernization without any limitation (Fig. 5). The easiest way of developing an area for recreation activities is by conserving existing natural and man-made resources. Water reservoir reveals the possibilities

for various entertainment activities and service facilities such as boating, surfing, fishing, and swimming. The big natural environment allows creating long walking trails. And also allows to create cycle tracks.

Fig. 5. General view of the researched area and its surrounded territory

Рис. 5. Общий вид исследуемой области и прилегающей территории

Urban parks are crucial for sustainable development. Moreover, to make places greener, healthier, and more livable the greenways were recommended.

The concept of transformation Kharga reservoir county into the modern recreation zone can be includes various entertainment activities and service facilities such as in/out gates, ticket booths, parking space, information desk/guide map, main lake, boats parking bays, park around the lake, jogging tracks, cycle tracks, boat docking stations, catering services, picnic spots with lawns, flowerbeds, fancy street lights- dustbins, outdoor music etc., public toilets.

Naturally durable materials such as natural stone and larch are well suited for the decorative strengthening of the shores. The greenery and plantation of the site will happen on the basis of the hydrological situation and Kabul master plan recommendations about the selection of the plants.

Acknowledgements. I am grateful to all of those with whom I have had the pleasure to work during the writing of this paper. Each of the members of architecture and urban planning department has provided me extensive personal and professional guidance and taught me a great deal about both scientific research and life in general. I would also like to thank Dr. Svetlana V.

Maksimova, head of architecture and urban planning department, and my supervisor Andrey Golovin for all the support and for helping to steer the paper in the right direction.

Bibliography

1. Bell S. (1997). Design for Out Door recreation. – URL: https://books.google.ru/books/about/Design_for_Outdoor_Recreation.html?id=-DB6AgAAQBAJ&printsec=frontcover&source=kp_read_button&redir_esc=y#v=onepage&q&f=false.
2. Gupta R.J. Ultimately preparation of Master plan of Kabul (2031 AD).
3. Safi L., Safi A.G., Ghafuray A.S. (2012). The Problem of Homelessness in Kabul City. National Center for Policy Research Kabul University, Kabul.
4. Kabul City Current Status Report for Urban Development // Yachiyo Engineering Co., Ltd, T. & Association, RECS International Inc. 2011, Kabul.
5. Draft Kabul City Master Plan (June 2011) // Product of Technical Cooperation Project for Promotion of Kabul Metropolitan Area Development.
6. Official website of Kabul Municipality. – URL: <http://km.gov.af/351>.
7. Godbey G., Graefe A.R., James S.W. (1992). The Benefits of Local Recreation and Park Services, a Nationwide Study of the Perceptions of the American Public (National-Recreation). National Recreation and Park Association, Ashburn.
8. Meisel F., Thiele N. Where to Dispose of Urban Green Waste? Transportation Planning for the Maintenance of Public Green Spaces // Transportation Research Part A: Policy and Practice. – 2014. – Vol. 64. – P. 147–162. – URL: <http://dx.doi.org/10.1016/j.tra.2014.03.012>.
9. Tyrväinen L., Väänänen H. The Economic Value of Urban Forest Amenities: An Application of the Contingent Valuation Method // Landscape and Urban Planning. – 1998. – Vol. 43. – P. 105–118. – URL: [http://dx.doi.org/10.1016/S0169-2046\(98\)00103-0](http://dx.doi.org/10.1016/S0169-2046(98)00103-0).
10. Chiesura A., de Groot R.S. Critical Natural Capital: A Socio-Cultural Perspective // Ecological Economics. – 2003. – Vol. 44. – P. 219–231. – URL: [http://dx.doi.org/10.1016/S0921-8009\(02\)00275](http://dx.doi.org/10.1016/S0921-8009(02)00275).
11. Ulrich R. View through a Window May Influence Recovery // Science. – 1984. – Vol. 224. – P. 224–225. – URL: <http://dx.doi.org/10.1126/science.6143406>.
12. Hartig T., Mang M., Evans G. Restorative Effects of Natural Environments Experiences // Environment and Behavior. – 1991. – Vol. 23. – P. 3–26. – URL: <http://dx.doi.org/10.1177/0013916591231001>.
13. Ulrich R.S. Natural versus Urban Sciences: Some Psycho-Physiological Effects // Environment and Behavior. – 1981. – Vol. 13. – P. 523–556. – URL: <http://dx.doi.org/10.1177/0013916581135001>.
14. Kaplan R. The Analysis of Perception via Preference: A Strategy for Studying How the Environment Is Experienced // Landscape Planning. – 1985. – Vol. 12. – P. 161–176. – URL: [http://dx.doi.org/10.1016/0304-3924\(85\)90058-9](http://dx.doi.org/10.1016/0304-3924(85)90058-9).
15. Kuo F.E., Bacaioa M., Sullivan W.C. Transforming Inner City Landscapes: Trees, Sense of Safety, and Preferences // Environment and Behavior. – 1998. – Vol. 1. – P. 28–59. – URL: <http://dx.doi.org/10.1177/0013916598301002>.
16. Tajima K. New Estimates of the Demand for Urban Green Space: Implications for Valuing the Environmental Benefits of Boston's Big Dig Project // Journal of Urban Affair. – 2003. – Vol. 25. – P. 641–655. – URL: <http://dx.doi.org/10.1111/j.1467-9906.2003.00006.x>.
17. Woudstra J., Fieldhouse K. (2000). Regeneration of Public Parks'. – E & FN Spon, London.
18. Formoli T.A. Impacts of the Afghan-Soviet War on Afghanistan's Environment // Environmental Conservation. – 1995. – Vol. 22. – P. 66–69. – URL: <http://dx.doi.org/10.1017/S0376892900034093>.
19. Indian Valley Reservoir. – URL: <https://lakecounty.com/place/indian-valley-reservoir>.
20. Agha Khan Trust for Culture. The Importance of Parks and gardens. – URL: https://www.akdn.org/sites/akdn/files/media/documents/various_pdf_documents/park_press_brief-aktc.pdf

Получено 16.01.2019

Станикзай Али Кайхан, А.Д. Максимов

ЗОНА ОТДЫХА ХАРГА В КАБУЛЕ (АФГАНИСТАН)

Рассматриваются возможности качественного преобразования и развития рекреационной территории Харга в г. Кабуле.

Обеспечение возможности для отдыха в городах с экстремальными климатическими условиями, высокой численностью и плотностью населения является сложной и важной составляющей градостроительной деятельности. В условиях быстрого роста населения в Кабуле дефицит инфраструктуры отдыха становится все более ощутимым. Существует острая необходимость в развитии существующих и создании новых зон отдыха, необходимых нынешнему и будущему поколению жителей Кабула.

В работе рассматриваются недостатки существующих рекреационных объектов в Кабуле и современные требования к рекреационному объекту для разработки концепции преобразования природного ландшафта Харга.

Харгинское водохранилище – рукотворное озеро, построенное в 30-х годах XX века на реке Пагман для орошения. Располагается в 9 км к западу от Кабула и занимает общую площадь 750 га. В настоящее время озеро пользуется популярностью среди жителей города благодаря доступности и окружающему ландшафту, однако руководящий план преобразования и развития данной территории отсутствует. В целом планирование рекреационных территорий в Афганистане находится на начальной стадии. Несмотря на благоприятные условия для растительности, наличие плодородных земель и водных ресурсов в бассейне большого Кабула и вокруг него, парки и зеленый пояс находятся в упадке из-за неправильного обслуживания или отсутствия такового.

Формирование и развитие городского парка — стратегическая задача развития территории вокруг озера Харга. В статье приводятся результаты градостроительного анализа территории Харгинского водохранилища, проведенного с целью определения ее потенциала, как современной зоны отдыха. Большая по площади природная среда вокруг водохранилища позволяет создавать длинные пешеходные маршруты и велосипедные дорожки, парки, детские досуговые зоны, места для общественного питания, спортивные объекты (площадки для гольфа, лодочные базы и т.п.). Водоохранилище открывает возможности для различных развлечений и услуг, таких как катание на лодках, серфинг, рыбалка и плавание.

В качестве успешно реализованного примера в статье рассматривается зона отдыха водохранилища Индиан-Вэлли в Калифорнии, США, аналогичная изучаемой территории по климатическому и природному потенциалу.

Модернизация мощностей и объектов рекреационной зоны Харга в соответствии с современными социальными требованиями и мировыми стандартами позволит удовлетворить потребности жителей Кабула в рекреационной сфере, внесет существенный вклад в борьбу с загрязнением воздуха в городе, будет способствовать развитию городской туристической инфраструктуры.

Ключевые слова: Кабул, рекреация, зона отдыха Харга, SWOT-анализ, градостроительный анализ, качество окружающей среды.

Ali Kaihan Stanikzai – Master’s Program Student, Perm National Research Polytechnic University (614990, Perm, Komsomolsky av., 29, e-mail: kaihan01100@gmail.com).

Maksimov Andrei Dmitrievich (Perm, Russian Federation) – Doctor of Technical Sciences, Professor of Department «Architecture and Urban Planning», Perm National Research Polytechnic University (614990, Perm, Komsomolsky av., 29, e-mail: gradcenter@mail.ru).

Станикзай Али Кайхан – магистрант, Пермский национальный исследовательский политехнический университет (614990, Пермь, Комсомольский пр., 29, e-mail: kaihan01100@gmail.com).

Максимов Андрей Дмитриевич (Пермь, Россия) – д-р техн. наук, профессор кафедры «Архитектура и урбанистика», Пермский национальный исследовательский политехнический университет (614990, г. Пермь, Комсомольский пр., 29, e-mail: gradcenter@mail.ru)