URBAN LEDS
URBAN LOW EMISSION DEVELOPMENT STRATEGIES

Guidelines for Development of Open Green Spaces in Rajshahi

1. Introduction

Open green spaces, comprising of parks, community gardens and cemeteries, are an open piece of undeveloped land, which has no buildings or built up structure and are accessible to public[1]. Open green spaces help to improve the overall quality of urban life, while also contributing to addressing climate change. These spaces provide several ecosystem services and provide urban residents with an opportunity to interact with nature. Open green spaces reduce urban heat-island (UHI) effect and environmental damages through ecological balance[1]. Open green spaces such as parks, playgrounds, riversides and gardens offer people the space for physical activities, relaxation and peace. Multiple studies have shown the significant contribution of open green spaces in reducing environmental health risks associated with urban living, human stress, and boosting mental and physical health. This has also been noted during the current Covid-19 pandemic. Open green spaces, are a component of the green infrastructure and play a critical role in sustainable urban development. It is thus essential that local governments make this investment on behalf of the citizens and ensure that public green spaces are easily accessible to all and distributed equitably within the city.

The city of Rajshashi has historically been a green city and has been recognized for greening activities in the past. However, the green cover of the city has been impacted due to urbanization. According to Rajshahi Development Authority (RDA), in the last 20 years (2003-2021), residential and commercial-mixed-use structural growth has increased by 14.84% and 9.52% and has replaced 4.5% open space and 5.78% water bodies. The percentage of open space has been reduced from 11.09% to 4.5% (RDA Master Plan, 2021).

The city thus urgently needs to take steps to promote the development of urban green spaces. This document is aimed to develop guidelines that will help the city to develop the same.

Some Benefits of Open Green Spaces

- Improved air quality
- Reduced noise pollution
- Reduced environmental health risks
- Promote relaxation and stress alleviation
- Improved social cohesion
- Conservation of urban biodiversity
- Disaster risk reduction
- Improved water quality
- Improved land prices
- Carbon sequestration
- Temperature regulation
- Soil conservation
- Promote pollination

2. Rajshahi – A Green City, Clean City

The metropolitan city of Rajshahi is located on the bank of River Padma and is a key administrative division of Bangladesh. The city's area is 97.18 sq. km. and is located between 24'20' and 24'24' North latitudes and in between 88'32' and 88'40' East longitudes.

Rajshahi City Corporation (RCC) is committed to make their own city green, healthy and environment friendly . The city has been recognized globally for actions taken for augmenting their green infrastructure. According to the World Health Organization, the Rajshahi city was recognized as the most prosperous city

https://www3.epa.gov/region1/eco/uep/openspace.html

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CNB intersection to Circuit House Road, along with wide footpaths

in the world in reducing harmful particles PM10 and PM2.5 in the air in 2014-16 [3]. In 2020, RCC received the "Environment Friendly City of the Year 2020" award for planned urban development and adoption of the "Zero Soil" programme [4].

3. The Reduction in Open Spaces

Open spaces in the city of Rajshahi have been facing challenges. Rapid urbanization is one of the major reasons for the decline in open spaces in the city. The last 20 years have witnessed significant grey infrastructure development in the city. Over the time span of 2003 to 2021, 2021 the residential and commercial-mixed-use structural growth has been increased by 14.84% and 9.52%, respectively which reduced 6.59% of open space and 5.78% of water bodies in the city (data sourced from Rajshahi Development Authority). Encroachment is another factor that has contributed to the decline in open green and blue spaces in the city. It has been reported Rajshahi has lost 24% of green area in the last 20 years. In addition, around 336 ponds have been filled up during the last 20 years [5].

Open green spaces in the city are also challenged by water logging, which occurs due to narrow pipelines and clogging of the same. As a result, these water logged open spaces do not serve any benefits, rather can contribute to issues like acting as breeding grounds for mosquitoes.

Non adherence to the Master Plan is also a reason which has contributed to the decline in open green spaces. It has been noticed that even though the Master Plan has designated spaces for development as open green space, the same is not strictly followed during the construction of residential and commercial buildings (Kafy, et.al., 2018).

In Rajshahi Master Plan, some places are reserved for open space, but during the construction of residential or commercial buildings, people do not follow the master plan, and as a result, the open spaces are lost.

The guidelines stated in this document will thus help to address the management and governance issues which plague open green space development and maintenance in the city of Rajshahi.

Some Initiatives Undertaken by RCC

Zero Soil Programme – The Zero Soil programme was initiated by RCC in 2011 with the aim to cover all exposed soil with green cover (comprised of trees). In this regard RCC has undertaken extensive plantation drives to plant trees along the roadsides, on dividers and along the river bank. Rooftop farming has also been promoted by the city under this programme.

Plantation on Roads and Islands – The Environmental Department of RCC has planted 32,446 trees along roads and on traffic islands in the city. In addition, 6000 flowering trees have been planted in these areas, between December 2012 and August 2020, in collaboration with the ward councilors.

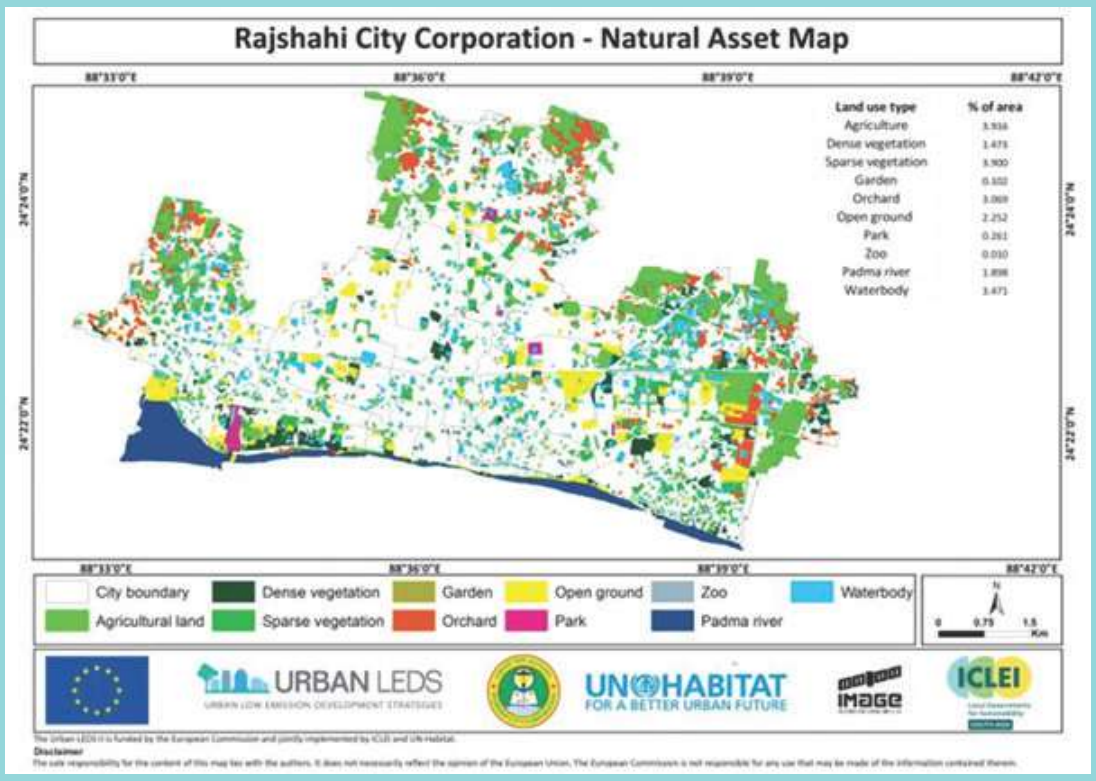
Development of Sheikh Russel Shishu Park – This initiative was launched in 2021 by RCC and aims to promote development of better amenities in public green spaces. The Park is being established over an area of 2.14 acres in Chotobangram area and will have facilities like rides, walkways and overall landscape development. It is envisaged that the Park will support in ensuring mental and physical well-being of the citizens, with particular reference to children and the elderly.

4. Guidelines for Future Open Green Space Development in Rajshahi City

Opportunities to develop open green spaces encompass the development of new neighborhood parks, restoration and rejuvenation projects, brownfield development, urban gardening and agriculture initiatives.

Open Green Space Development – Initiatives Undertaken through Urban LEDS II Project

Development of Natural Asset Map: A Natural Asset Map has been developed under the Urban-LEDS II project with the support of ICLEI South Asia. The map, at a glance provides an overview of the green and blue spaces in the city. Ward-wise Natural Asset Maps have also been developed.



Development of Pictorial Handbook of Common Trees of Rajshahi: An inventorization of trees in a selected area in the city has been carried out and the trees have been mapped on the GIS platform. The trees have also been labelled. A pictorial handbook of the common trees of the city has also been developed. The handbook will help citizens, city administrators and tourists appreciate the tree diversity in the city.

Undertaking Plantation at Stretch from Kolpona Cinema Hall Intersection to Talaimari Embankment: A pilot project on "Establishment and maintenance of plantations at the Kolpona cinema hall intersection - Talaimari embankment in Rajshahi, Bangladesh," has been implemented through the Urban LEDS II project. Plantation along a 2.5 km long open space stretch has been undertaken. Focus was laid on local and native species and care was taken to avoid any alien and invasive species.

Prior to initiation of any project on development of open green spaces, the objective of the plan (size, functions, target audience etc); management framework and long term monitoring scheme needs to be clearly identified.

Open green spaces should be established in close vicinity to urban residential areas. Ideally, an urban resident should be able to access such spaces within 300 m linear distance (approximately 5 minutes walking) from their home.

Access to open green spaces for all sections of the society should be ensured.

RCC should also actively engage with schools, colleges and business zones to undertake scientifically informed and planned plantations in these areas.

Open green spaces development should not be limited to any one type of such space. Various types of the same, including avenue plantations, small and large parks, playgrounds etc should be developed.

The local biodiversity and native species need to be kept in mind while developing the open spaces.

Open spaces should be developed in a manner that they blend with the local culture.

Facilities like visible entrance, lights to ensure safety, walking paths, benches, waste bins, toilets etc need to established.

The open green space, once developed, should be well maintained.

The use of Nature based Solutions should be promoted in the open green spaces.

RCC should map all the open green spaces on the GIS platform and carry out regular satellite based monitoring of the same.

Baseline documentation of the biodiversity in the city should be carried out. The same should be documented in a City Biodiversity Register, which should be updated every two years.

Plantations along the avenue and traffic islands should be undertaken in a manner that they form an assemblage of native three storeyed vegetation and

connect the isolated open green spaces. This will help to form a connectivity corridor for the movement of several faunal species.

Education and outreach infrastructure like Nature Interpretation Centres should be developed in larger open spaces to help citizens appreciate and connect with nature.

Facilities like pollinator garden, herbal garden, bambusetum etc should also be developed, which will serve as live nature education points.

Capacity building of officials of administrative bodies on principles of ecology and how to plan development of open green spaces.

Guiding Principles for Development of an Open Green Space

Accessible and Equitable for the Entire Community: This aims to increase land under the parks and recreational spaces in areas that have far lesser parks than other parts of the city. It also aims to create an equitable infrastructure for all, which includes vulnerable groups like old age, people with special needs, people belonging to low income groups. It also aims at ensuring safe and convenient access to parks.

Safe and User Friendly Environment: It aims to promote safety for the visitors. The level of comfort that a person feels when using a public space or park is directly related to the level of safety that they feel and perceive.

Relates to Community Needs and Expectations: The facilities should respond positively to the natural environment and to local community values and needs. It is important that the design of public parks is innovative in its design with regard to form and function to existing environment and surrounds.

Operation and Maintenance: Maintenance is the key to operate open green spaces that are visually attractive and encourage users. Thus, comprehensive O&M model in terms of design and maintenance is required for sustainable open green space services.

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For more information, please contact:

ICLEI- Local Governments for Sustainability, South Asia

C-3 Lower Ground Floor, Green Park Extension, New Delhi 110 016, Tel: +91-11-4974 7200, Fax: +91-11-4974 7201, Email: iclei-southasia@iclei.org