

Assessing Institutional Involvement and People's Perception towards Urban Greenery: (A case of Lalitpur City)

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Abstract

The urbanization in the modern age has had a huge impact on the environment, reducing green space and its greenery and threatening human wellbeing. Visual relief, seasonal variation, and a connection to the natural world are all provided by urban vegetation. They are also necessary for a higher quality of life and sustainable development. Also, they are important for the better quality of life and sustainable development. Cities are livable when there are more social interaction, public open spaces provide social space and cultural space, which makes cities livable. Creating greenery and space to foster and inspire a relationship with the environment while also providing essential services. Local authorities are already in promoting and sustaining greenery in cities. The research report further can be used by the municipality office, urban researchers and others as a strong reference to address the problems regarding the urbanization and the demand of urban greenery in the valley. The research's main purpose was to assess the extent of urban greenery in the Lalitpur Metropolitan City. The specific objective was to assess the people's perception towards urban greenery identifying the different institutional involvement responsible for the management of urban greenery. The research was conducted in the Lalitpur Metropolitan city of Lalitpur district.

The study found that not everyone was aware of the benefits of urban greenery, and that people were less likely to participate in urban greenery activities. A survey of city residents and visitors to an urban park was conducted. The majority of respondents held favorable perceptions of urban greenery and were aware of the benefits it provided. The involvement of various government and non-governmental organizations in promoting urban greenery was found in one way or the other. Local government too seemed active in urban greenery programs but still no particularly one section bears the full responsibility. No accompanying legislation or regulations governing urban greenery existed. The research showed that further tangible scientific and professional learning is needed to sustain the city's greenery for its long-term survival.

Keywords

Greenery, urbanization, institutions, awareness, perception

1. Introduction

The management of trees in urban environments is known as urban greenery. The earliest known use of the concept urban greenery originated in 1894, despite the fact that a real description of what is urban greenery is historically contextual and difficult to define. It is defined as "the art, science, and technology of managing trees and forest resources in and around urban community ecosystems for the psychological, sociological, economic, and aesthetic benefits provided by trees", Helms, 1998 cited in Kjell, 2005. Urban greenery, rural vegetation, and park-like landscapes, nurseries, trees and shrubs, vegetated roadside-walls and rooftops are all examples of green areas. The sum of all trees, bushes,

and vegetation within and around more or less densely populated places, from rural to metropolitan areas, can be classified as urban greenery. Because it is a relatively new subject, the definition of "urban greenery" varies from country to country. The phrase "urban greenery" is frequently used in various European countries to refer solely to the development and management of urban forests. The foliage is the most visible sign of this degradation. Urban greenery has become one of the most heavily influenced areas in the interaction between humans and natural processes as a result of substantial disturbances during the urbanization process. Urban greenery is becoming one of the most largely inspired areas in the interaction of people and natural phenomena as a response of massive interruptions during in the

urbanization process.

The presence of green has also been affected by rapid urbanization. Due to the general extensive interactions between intrinsic and external parts of urban greenery, it is intended to assess the patterns, functioning, contextual, fragmentation, and chronological modification of urban greenery at an appropriate scale adopting environmental eco concept. Furthermore, people are deprived of spaces in which they can meet and interact with others; children are unable to access places to play; socializing has declined substantially; and a sense of community is weakening. Greenery is declining in urban areas, threatening to their long-term sustainability. As an outcome, the research was conducted out in urban areas where rapid urbanization is happening in order to generate knowledge on precisely what is going in urban areas in regards to social, cultural, and ecological impacts, as well as understand things among dwellers and one’s surroundings.

2. Research Objectives

2.1 Main Objective

- To understand the scope of urban greenery in Lalitpur metropolitan city.

2.2 Specific Objective

- To assess the level of awareness and peoples’ perception towards urban greenery in LMC.
- To identify the different institutional involvement responsible for the management of urban greenery in LMC.

3. Research Methodology

The pragmatic aspect of greenery and its sustainability is adopted. The pragmatic paradigm is particularly well suited to gaining a thorough knowledge of difficulties arising from substantial information obtained from literature reviews, as well as providing a realistic assessment of the current situation. The study’s premise is that there are certain challenges to be resolved regarding the greenery’s contextual characteristics and long-term viability. For the epistemological reasoning, a methodology was designed to comprehensively find answers through publications, observation, survey, interviews, and other means. Individuals’ knowledge, perceptions,

and attitudes should all be considered. The methodology of the study includes the identification of data sources, survey design and execution, field work execution, and data administration.

The development of urban greenery has been considered as a major element of preserving urban environmental quality, improving human living circumstances, creating a harmonious human-nature relationship, and achieving urban sustainability according to Carreiro 2008. According to the Brundtland (1987), sustainable development can be defined as development that meets present needs without affecting future generations’ ability to meet their own [1] Sustainable urban development aims to build communities that are socially, culturally, and environmentally balanced. One of the most important aspects of this aim is a sustainable urban greenery resource. The purpose of sustainable community design, also known as smart growth, is to regenerate towns, limit sprawl, and maintain open space, and use land and infrastructure efficiently as part of this broad mission. The quality and quantity of green areas in a city are two clear indicators of urban sustainable development. Despite growing scientific knowledge, many government departments and municipalities are slow to respond with policy. Parks, gardens, and other municipal green spaces are frequently administered haphazardly on a site-by-site basis. Only when urban communities and elected decision-makers acknowledge and grasp the entire variety of services that trees and green space provide can they be properly planned and stewarded.

3.1 Methodological Framework

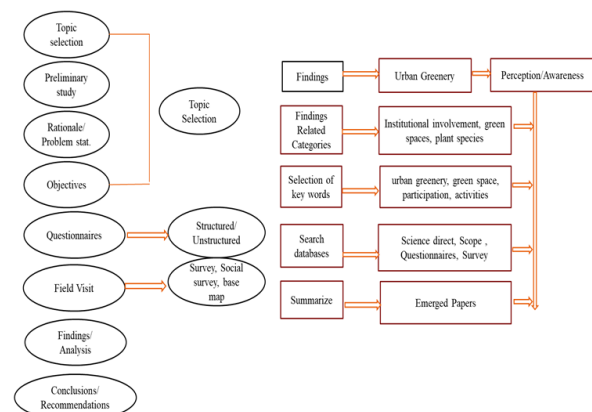


Figure 1: Methodological Framework

4. Study Area

The area is taken from Jwagal (UN Park) and Jhamsikhel Community Park area, both the section lying in the core urban area city. The research will be primarily based on the secondary data of the settlement and its environmental condition. Primary data will be collected through the questionnaire survey and the interviews with the key informants and the local communities nearby. The research will include only about 100m (maximum) from the settlement as study boundary of the chosen stretch and not beyond that. The research will not address all the issues and problems of all the tributaries of the greenery because of time and resource limitations. However, the findings from this research, as well as the suggestions/recommendations obtained from this study, will definitely be replicable in areas of settlement and greenery and other tributaries with similar problems. Due to high population, non-probability judgment sampling was implemented.



Figure 2: Bagmati River Nature Park (UN Park)

5. Scope and Limitations

Urban greenery is a promising concept, which can cater to a wide range of urban needs and realities. It should be considered part of the basic infrastructure of urban cities and towns where people reside. Urban greenery is still not receiving as much attention as it should have received. Evaluation of participation level, attitude and perception will assist in finding out the existing hindrance for the practices of urban greenery, from which problems and prospects related to the development and sustainability of urban greenery can be analyzed. A very few institutions in the major cities have initiated the works of urban greenery. In this context it is necessary to assess the

institutional involvement in the field of urban greenery.

6. Literature Review

Green infrastructures, which include urban parks and gardens (or urban woods), are responsible for a variety of environmental, social, and educational advantages to human society. The majority of urban green's benefits are goods. Each inhabitant, visitor, and user benefits from the intangible activities or non-market significant variables by these public goods. The reality that such person has gained these benefits did not deter others from obtaining similar benefits. Although greenery has always played an important place in social settlements, its real value to urban residents has only recently been realized. Trees and natural spaces are essential to enhancing urban living conditions.

Previously, urban greenery in affluent countries was almost entirely judged on its aesthetic benefits. Environmental services and quantitative advantages are now being examined more closely. Though urban greenery benefits us in a variety of ways, we do not directly gain from it. As a result, people in urban centers are ignoring plants. Each small area or land in the city is encroached upon for development purpose. The setting of our dwelling is not always the most significant issue; we must also consider our wellbeing. Land is scarce in urbanized places, and even that which is available is stressful. Awareness of the benefits, as well as an unawareness and knowledge among urban residents, has become a major hindrance.

Only if trees are maintained by communities will they be able to survive in these conditions. Unfortunately, because to the financial demands of more serious political and social challenges affecting cities, such as crime and education, urban greenery programs sometimes receive insufficient funding from municipal budgets or inadequate attention from decision makers. As a result, green spaces and trees are lost, and future development opportunities are limited. High land prices in urban areas are another barrier to urban greenery development. This involves the conversion of green spaces in urban or urban areas, and also increasing stress on greenery in urban areas (FAO, 1995). The possibilities include protecting existing greenery in areas such as parks, gardens, and play grounds, increasing roadside, avenue, and rooftop gardening, introducing afforestation and

nursery activities in newly developing areas between built-up and areas, promoting homestead gardening, and social or community greenery in areas, and promoting family farm gardening and social or community greenery in urban areas. Future urban greenery initiatives in developing countries should take a participatory approach as much as possible.

Urban people should, ideally, be able to participate in decision-making and execution, from tree species selection to actual planting, maintenance, and (where feasible) harvesting of tree commodities. This participation improves the planting program’s success rate. Residents may regard the attempts critically if local residents are not involved in the planning and planting of the trees. An initial assessment of management requirements and opportunities of urban greenery is required. People support initiatives that they believe are beneficial, especially if they gain substantially from it (IADB, 1997).

Trees and green areas enable cities keep cool by serving as natural filters and noise absorbers, as well as improving microclimates and the quality of natural resources such as soil, water, vegetation, and wildlife. Trees contribute significantly to the aesthetic value of cities, thereby contributing in the maintenance of inhabitants’ well-being. Fruit, fuel, wood, and light timber are some of the tangible benefits of urban greenery in the form of forests. Trees can either cover or absorb toxins and unpleasant odors by replacing them with more pleasant ones. People’s psychological, social, and cultural requirements are met by trees. They aid in the reduction of tensions and the improvement of psychological health since individuals simply feel better when they are in the presence of trees. Tree planting and maintenance, particularly in urban parks/gardens and boulevards, can be time-consuming and provide work opportunities for residents in the area. Environmental education is increasingly valuing urban parks and gardens. Botanical gardens, zoological gardens, nature trails, and visitor information centers can enlighten and educate visitors about local flora and fauna in a number of cities in both developed and developing countries. Trees, shrubs, and vegetation that are easily accessible act as a crucial resource for both formal and informal learning [2].

7. Findings and Analysis

Statement	Agree	Neutral	Disagree	Wt. mean	Remarks
Greenery in urban areas mitigate the climate change problem.	72	15	13	1.41	Agree
Maintenance and management of greenery in the city is poor.	77	9	14	1.37	Agree
It is urgent to launch efficient urban greenery program in city.	83	15	2	1.19	Agree
People are satisfied with the current planted greenery along roadside, river side and open spaces in Lalitpur city.	41	18	41	2	Neutral
Roadside greenery are necessary city.	74	12	14	1.4	Agree
People want more greenery in the city.	78	9	13	1.35	Agree
Peoples' participation is essential for urban greenery management.	77	6	17	1.4	Agree
People feel ownership in roadside greenery and management.	36	30	34	1.98	Disagree
People are satisfied with the existing Status of urban greenery in Lalitpur.	22	13	65	2.43	Disagree

Table 1: Perception of people towards Urban Greenery

The first statement in table 1 is inclined toward agreement. The second and third statements are also in favor of coming to an agreement. People in Lalitpur are content with the current planted greenery along the roadside, riverfront, and open places, which is neutral. The statements are again supported by the other three statements. Residents’ engagement is important for urban greenery management, whereas most people in Lalitpur District are content with the current condition of urban greenery, there seems to be some dissatisfaction.

Weekends were the most popular times for responders to visit recreational areas. Two to three times a week, one-third of the people visited the green areas. Surprisingly, the age range of 20-30 years had the highest rate of visits to recreational areas. One-fifth of those respondents stated they meet up with friends in the recreational areas. Institutional involvement in LMC’s promotion of urban greenery. Recognizing the importance of urban greenery for the well-being of urban residents, the Nepalese government has launched a number of initiatives to promote greenery in the area, including tree planting, park construction, greenbelts, nurseries, and public awareness campaigns. Greenery is being promoted in Lalitpur by the government, NGO’s, and foreign organization [3]

Particular	Response of Respondents
People awareness regarding planted areas	18
Roadside greenery	25
Budgeting for greenery maintenance	03
Integrating Policies	10
Development of parks at local level	02
Various organization coordination	06

Table 2: Activities identified by respondents as needed for the promotion of urban greenery

District Development Committee, Lalitpur

Metropolitan City Office, Department of Forest, Nagar Bikash, and Department of Roads are among the government organizations actively involved in promoting and developing awareness of urban forests among city inhabitants. All of these organizations contribute money, land, and personnel to help the city develop parks and grow trees. Since 2000, non-governmental organizations (NGOs) such as the United Nations Park Development Committee, NTNC, Bird Conservation Nepal, Environmental Camps for Conservation Awareness (ECCA Nepal), and Youth Awareness Environmental Forum (YAEFF) have been actively promoting urban green in the city.

Universities and colleges have also taken part in tree planting and are actively involved in promoting greenery among ignorant inhabitants. Many private organizations, such like Himalayan Distilleries (a brewery company) and Standard Chartered Bank Chaudhary Enterprises, have also contributed to city beautification by maintaining traffic islands and conserving planted areas with tree guards. Like shown, the Lalitpur municipal government and authorities have been actively involved in the establishment of parks and gardens, mostly to improve the city’s greenery. People prefer to acquire units and houses close to a green environment, which has encouraged real estate agents to pay closer attention to urban greenery in recent years. Currently, urban greenery is given top attention, despite the fact that the government has not set aside any green space.

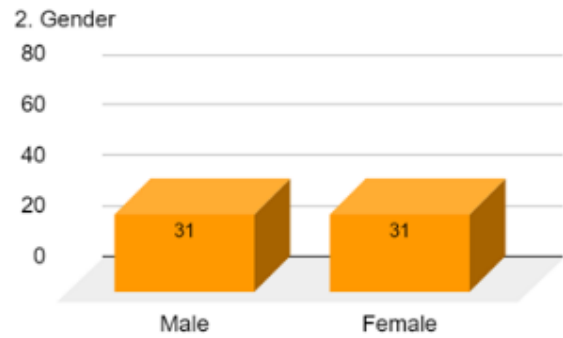


Figure 3: Age

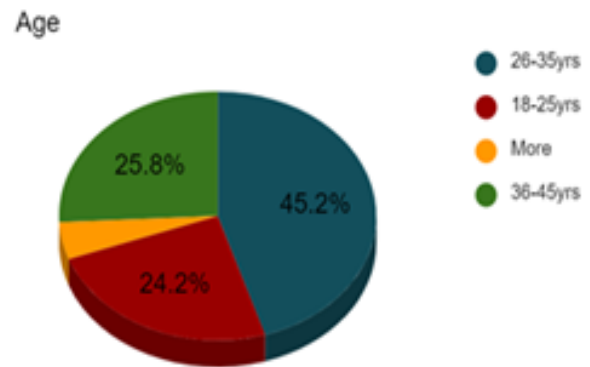


Figure 4: Gender

Name of Parks	Location	Estab. Year
Bagmati River Nature Park (UN Park)	Jwagal	1996
Manmohan Park	Balkhu	2003
B.P Park	Balkhu	2004
Shahid Shukra Park	Patandhoka	-
Lhamu Chaur Community Park	Jawalakhel	-
Dhobighat Environmental Garden	Dhobighat	2006
Balkumari Park	Balkumari	-
Gwarko Park	Balkumari	2006
Jestha Nagarik Shanti Vatika	Sanepa	2008
Shahid Smarak Park	Sanepa	2008
Rotary Park Lagankhel	Lalitpur	-
Krishna Mohan Garden Nudip Memorial Garden	Baghdol	2004
Bagmati Sewa Samiti	Sankhamul	2009

Table 3: Parks developed in the Lalitpur city

Out of total respondents male and female percentage is in equal numbers, mostly above 25 years of age.

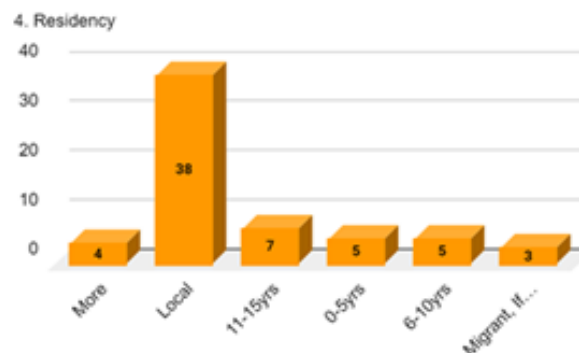


Figure 5: Residency

Analysis done on the basis of the Semi structured Questionnaire’s Survey:

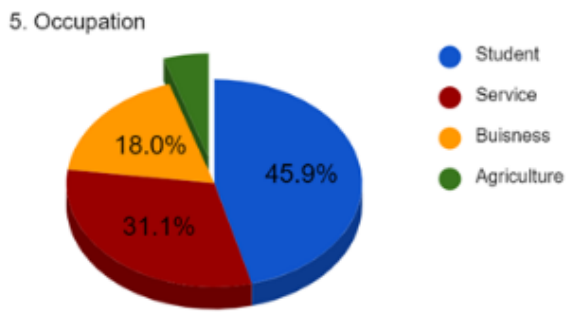


Figure 6: Occupation

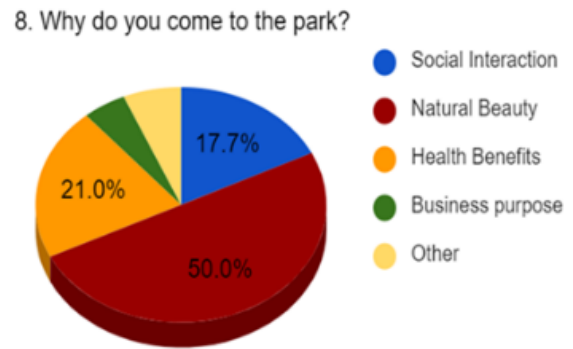


Figure 9: Visit Purpose

Out of the responses maximum people were locals (mostly business oriented), students and service oriented people.

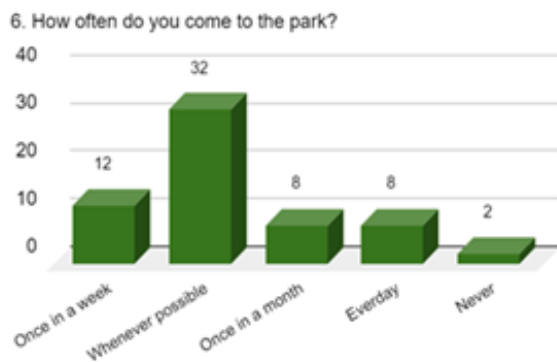


Figure 7: Visit

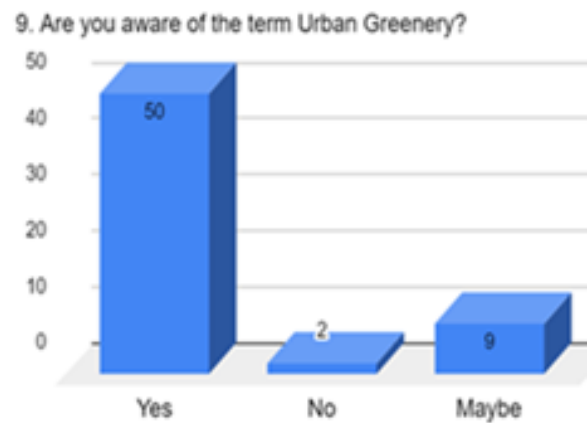


Figure 10: Awareness Regarding Urban Greenery

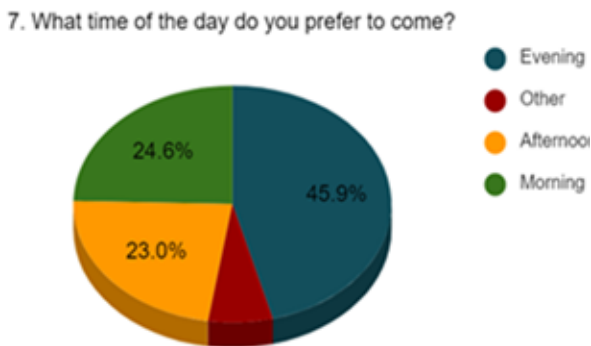
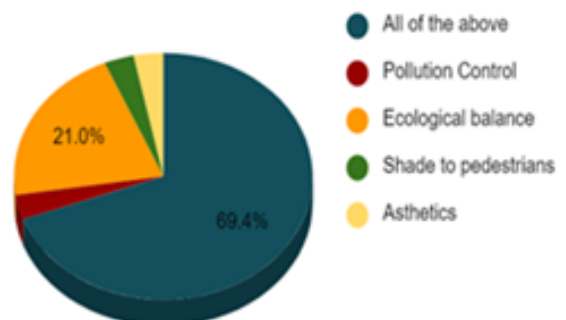


Figure 8: Preferred Time

About 50% of people preferred to come to the park to embrace the natural beauty and were fully aware of the term urban greenery.



Evening and morning are the most preferred time of visit almost whenever possible or at least once a week.

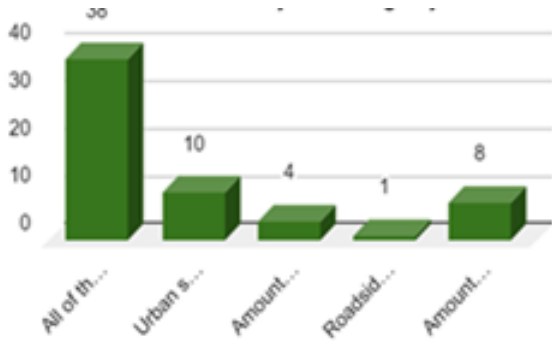


Figure 11: Urban Greenery according to people

Urban Greenery according to people agreed that greenery constituent all the greenery including trees, vegetation, along urban spaces and roadside greenery.

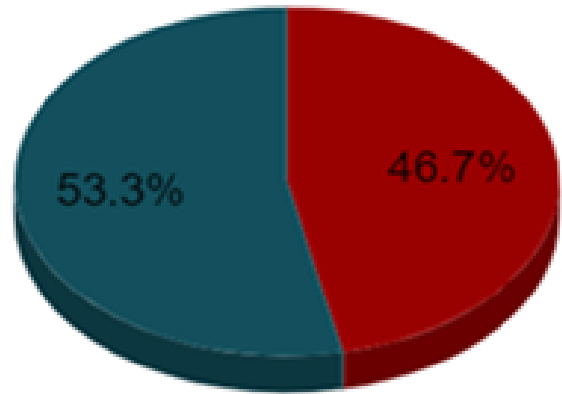


Figure 14: Participation in Urban Greenery Activities

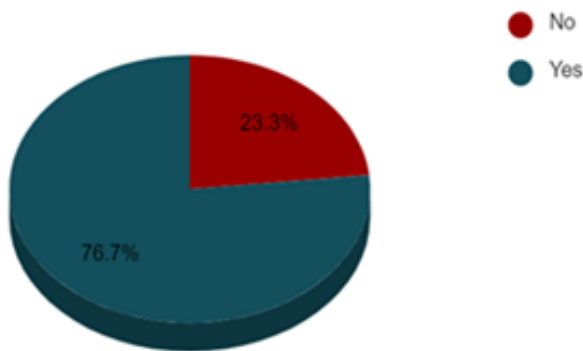


Figure 12: Plantation in Private Land

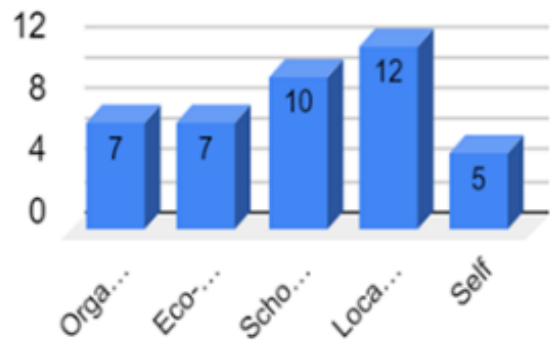
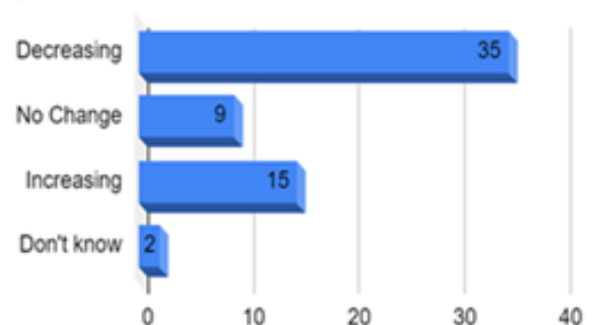


Figure 15: Participation in Urban Greenery Activities organized by different organizations



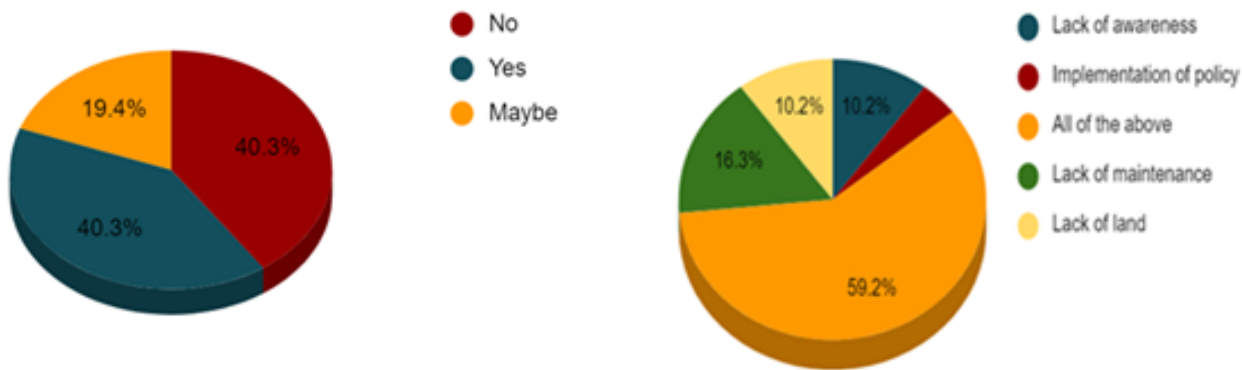
Figure 13: People choices on Plants

People have mostly planted some kind of greenery in their private lands and the choices on plants are fruit bearing and leafy plants.

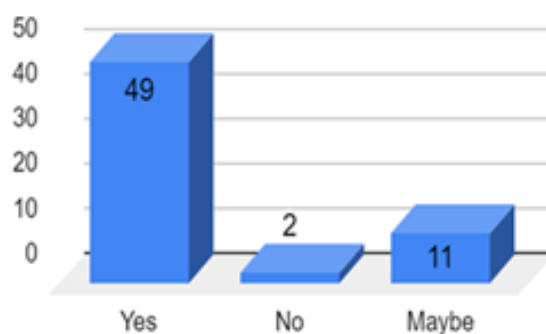
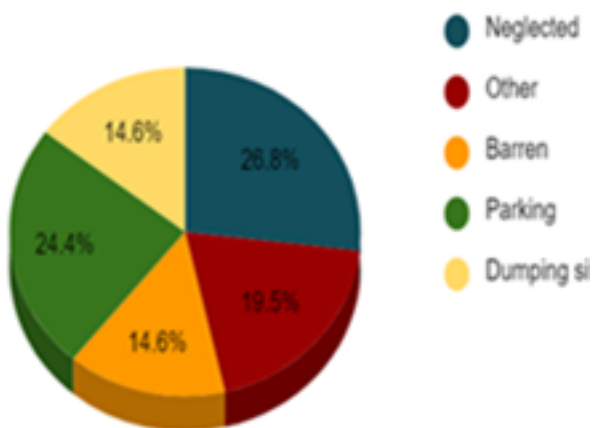


More than 50% have participated in urban greenery activities organized on local level, schools, colleges and organizations are more active ones.

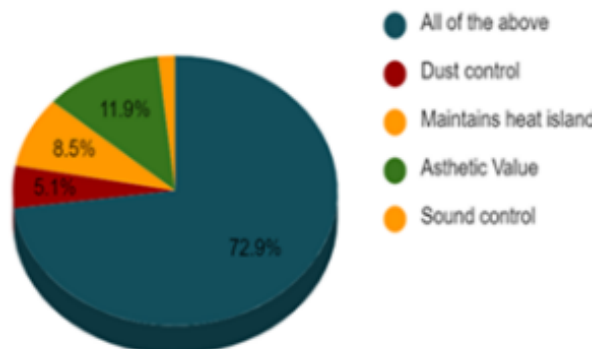
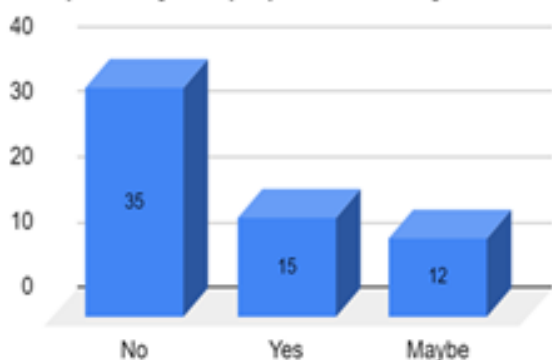
Assessing Institutional Involvement and People's Perception towards Urban Greenery: (A case of Lalitpur City)



People agree that lands or open spaces are still available yet 35% feel the greenery has decreased noticeably despite many greenery related activities.

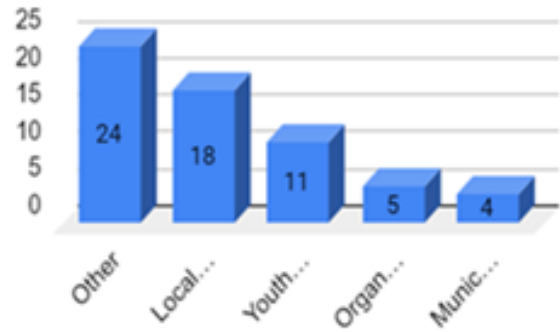
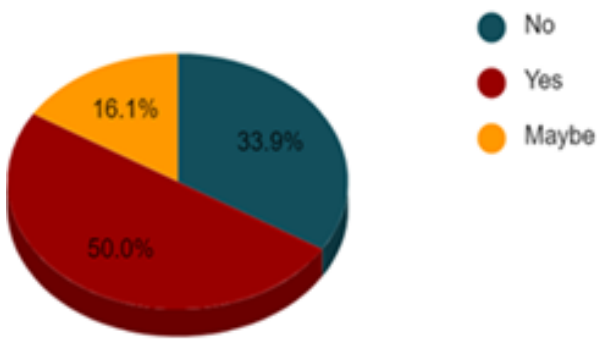


Open spaces seem available but the use is not defined due to lack of ownership Including roadside greenery being neglected and seen lacking in maintenance.



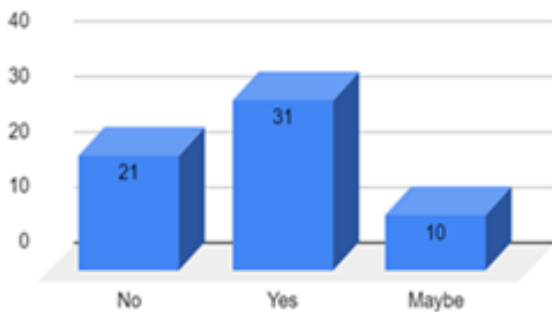
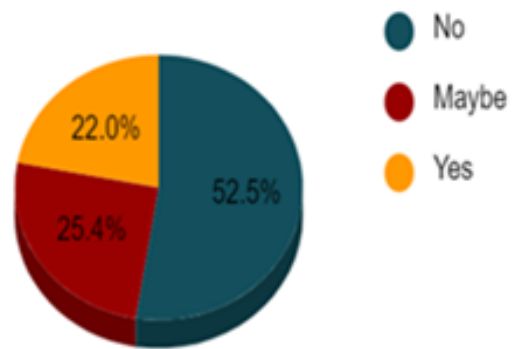
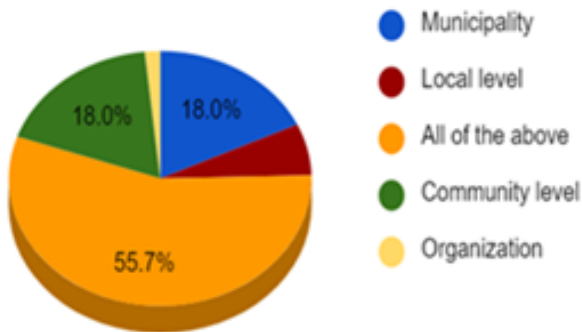
The green spaces seemed not enough as compared to the construction and somewhat misused for different purposes or either abandoned.

People consider the roadside greenery equally important as they contribute in the aesthetic value to the surrounding.

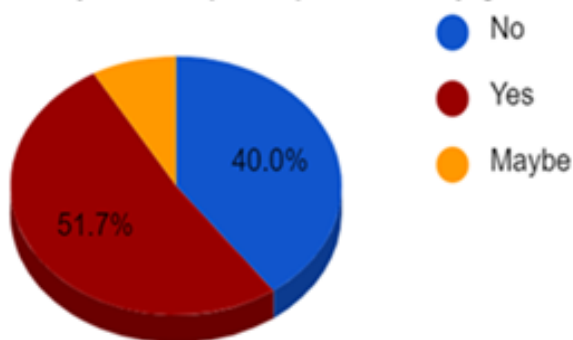


Choices of plants are seasonal, flowering and leafy ones but lacks knowledge on environmentally friendly ones.

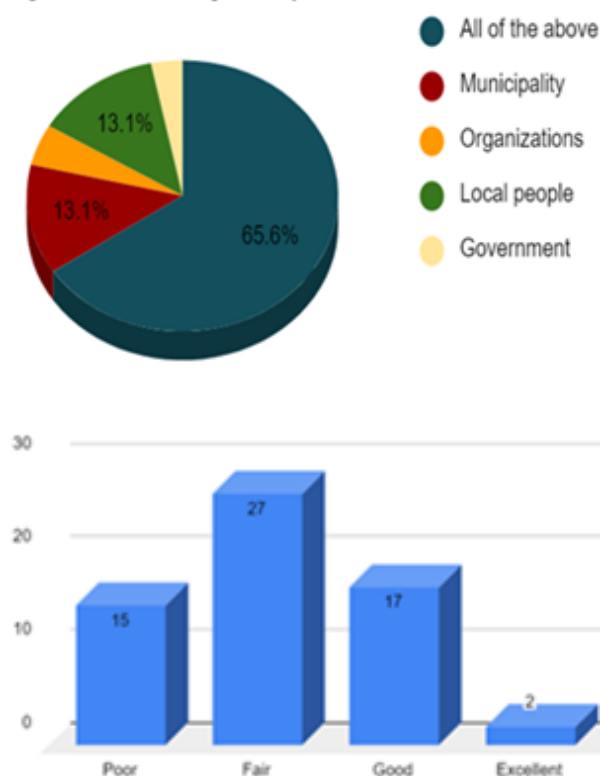
Private organizations were more active in organizing the greenery programs on local level which are less regarding organizations and municipality.



It concludes that all are equally responsible in maintaining the greenery, but the programs are launched mainly on local levels more but fails to maintain consistently.



No ownership so greenery maintenance is lacking due to negligence, encroachment, lack of scientific approach and law enforcement, protection and implementation.



Every organization were equally responsible and not only one group was to be blamed. Satisfactory greenery setup can be obtained by planting, maintenance, and awareness campaign and ownership development with strict implication rules.

8. Conclusion

The concept of urban greenery is still in its infancy in Nepal, despite its widespread use in the developed world. The findings of the survey on how to promote urban greenery in Nepal have a variety of possible significance. Although the various roles of urban greens are well understood. In Nepal, it is not incorporated into the planning and administration of urban environments. Because the Ministry of Forest and Soil Conservation and the Ministry of Forest Environment of the Government of Nepal place minimal focus on sustainable urban greenery and monitoring, cities have grown in an environmentally unsustainable manner.

The survey results, on the other hand, highlight the necessity to track and examine changes in land conservation and management methods over time in metropolitan areas with fast population increase. Local governments, as the level of government closest to inhabitants in terms of delivering quality of life, have sole authority and responsibility to promote,

conserve, and encourage urban greenery in these municipalities. As a result, municipal governments play a critical role in putting sustainable urban development into practice, both directly in the urban context and indirectly by making decisions that affect Nepal's whole terrain. According to this study, a concerted effort by local government and local people would boost Nepal's urban green prospects.

However, because there are no preliminary legislative actions and rules relevant to urban greenery, Nepal's existing forest policy and forestry legislation do not accept this possibility. Although municipal governments have begun to include modern ideas of land conservation into their plans, providing a green answer to many of the difficulties related with urban expansive expansion, all of these actions are now on a modest scale. In LMC, community perceptions and institutional involvement in urban greenery development were overwhelmingly positive. The majority of individuals in the area were aware of the numerous advantages that urban green provides. A variety of organizations, including government institutions and non-governmental groups, were also actively striving to promote greenery throughout the city.

Unplanned urbanization is reducing the amount of greenery in the area. Land scarcity is seen as a barrier to the growth of urban vegetation in the metropolis. As a result, there are more opportunities for family gardens and private plantations to flourish. For proper plantation, one must use the plantation toolkit and follow the plantation instructions. Governmental and non-governmental organizations are working together to promote urban greenery growth. However, none of them are completely dedicated to urban greenery; instead, they just contribute to it.

9. Recommendations

The government should move fast to establish an institutional system to support urban greenery projects, i.e., a responsible urban greenery institution. The contribution of NGOs/INGOs to various aspects of urban greenery should be bolstered with financial resources, as their manner has proven to be effective in the past and can continue to be so in the future. Other types of urban greenery, such as home lawn gardens, roof top gardens, and balcony gardens, should also be promoted, because many city families have no or very little space for greenery, therefore it

should be considered whenever possible. Entry fees and ticket sales can be used to generate money, allowing the entire vegetative system to be exploited to generate revenue.

Plants and a plantation toolbox should be made available in nearby nurseries around city corners to encourage effective participation in greenery planting. Existing urban trees and plants are in poor and uncontrolled condition. Existing urban trees should be carefully evaluated for preservation and maintenance. Because there is no legal definition for the term UG. As soon as practical, strong policies favoring UG expansion should be implemented.

Acknowledgments

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References

- [1] Pradeep Chaudhry and Vindhya P Tewari. Managing urban parks and gardens in developing countries: a case from an indian city. *International journal of leisure and tourism marketing*, 1(3):248–256, 2010.
- [2] AR Soeriaatmadja, R Wulanningsih, et al. A set of sustainable urban landscape indicators and parameters to evaluate urban green open space in bandung city. In *IOP Conference Series: Earth and Environmental Science*, volume 179, page 012016. IOP Publishing, 2018.
- [3] Anup Gurung, Rahul Karki, Rajesh Bista, and Sang-Eun Oh. Peoples' perception towards urban forestry and institutional involvement in metropolitan cities: a survey of lalitpur city in nepal. *Small-scale Forestry*, 11(2):193–205, 2012.