ABSTRACT

All developing countries are facing the phenomenon of urbanization. From the 1970s onward, Nepal has observed one of the highest rates of urbanization in Asia and the Pacific. Historically, Kathmandu Valley has enjoyed sustainable development practice and maintained an ecological balance of urban development through various physical features; cultural practices as well as sustainable opportunities for economic development. The valley reflects its long history through a variety of cultural heritage sites comprising of settlements, monuments, religious sites and traditional infrastructures. The cultural practice of worships and processions are embedded into the concept of heritage in contributing to social cohesion and sustainable development practice and maintained an ecological balance of urban development through various urban safety, disaster mitigation.

INTRODUCTION

Since many years, Kathmandu Valley has been claimed to be highly prone to earthquakes by various national and international studies. Most of the infrastructure and buildings in the Valley are not strong enough to resist a high magnitude quake. To address the issue, a joint assessment was conducted by Ministry of Home Affairs (MOHA) and the International Organization for Migration (IOM) with the support from United States Agency for International Development (US AID)/Office of Foreign Disaster Assistance (OFDA) and identified 83 open spaces suitable for Shelter, Aid and Medical Help in the Valley (Bhusal, 2015). Traditionally, open spaces of various scale, size and geometry ranging from street scale to courtyard scale and even urban squares have been endowed as integral parts of designated urban spaces in Kathmandu Valley. The concept of garden space in the city has been attached to its safety. Instead, one finds open spaces in the form of paved courtyards, street squares or water bodies (Rai R., 2011). Provisions of large open spaces (khyo) for public benefit were also made at town peripheries. These dynamic and functional spaces regulated and shaped urban forms as well as catered to socio-cultural activities (Sharma, 2013).

TRADITIONAL OPEN SPACES IN KATHMANDU VALLEY

- **Traditional Compact Settlement**
  - On an elevated land
  - Helped to preserve agricultural land >> self sustainable in food products
  - Open spaces available at community level

- **Types of Open spaces**
  - **Street Network:**
    - major backbone of a traditional town
    - connects all the closed courtyards (bahal / bahil), open courtyards (chowk or nani) and public squares
  - **Closed Courtyard (Bahal/ Bahil):**
    - Communal open space surrounded by houses
    - Multi-purpose utilization for various daily chores – bathing, washing clothes, drying of grains
  - **Neighbourhood Squares:**
    - Open space at road intersections
    - Used as a gathering space for social leisure or festivals and events
  - **Palace Squares:**
    - Open space in front of royal palaces
    - Space for major festivals and events
  - **Open space at town periphery (Khyo):**
    - Vast open spaces located near to any densely populated settlement
    - Marks the boundary of the city
    - Space for performing larger social and cultural events

TRADITIONAL OPEN SPACES AND CULTURAL PRACTICES FOR DISASTER RISK MITIGATION

- **Open spaces**
  - Well endowed with required infrastructure such as light timber structures used as resthouses (patis), stone water spouts (hitis)
  - Proximity from neighboring households made them functionally appropriate as evacuation spaces

- **Rituals and festivals**
  - Helps in space utility and cognition
  - Observational learning of city routes and spaces

- **Traditional houses**
  - Earthquake resistance measures: symmetrical windows, double framing of windows, use of timber wedges
  - Mud mortar - partial collapse of the building, providing time for evacuation

CONCLUSION

- **Significance of the indigenous concept of traditional open spaces revived after the April 25 quake.**

- **The large open spaces such as Tundikhel served as a major evacuation space. It was one of the 83 gazetted open spaces marked for evacuation and refuge in case of disaster.**

- **From building makeshift shelters to collecting necessary supplies, people came together at one place and helped each other.**

- **These traditional open spaces also helped in building social and cultural resilience.**