Urban Greenspace Wellbeing Benefits in Low and Middle Income Countries

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KEY MESSAGES

- Within the context of future climatic conditions, ignoring the benefits of public realm spaces on societal wellbeing risks locking cities into compromised ecosystems mirroring those in the Global North that undermine residents health.
- We explore the linkage between cultural ecosystem services (CES) and individual wellbeing to characterise the benefits of key urban infrastructure.
- Built and natural environments have distinct, complementary roles in cultural activities.
- Cities natural spaces can promote wellbeing to balance the stress associated with busy, challenging built infrastructure.
- Planners should balance the development of flagship greenspaces (parks, etc.) with dispersed accessible urban greening to ensure equitable delivery of benefits to build sustainable resilient neighbourhoods.

Introduction

Over the upcoming decades, sustainable development will largely be a story of our transition to urban living where city environments will adapt to deal with a multitude of development challenges. This transition means we need to identify how to maximise the opportunities cities offer to create wellbeing alongside economic and business opportunities.

Humans are ultimately dependent on the flow of ecosystem services from nature which contribute to wellbeing. Natural urban spaces can improve both physical and psychological wellbeing through cultural ecosystem services (CES) but built public realm spaces also contribute to the cultural life of cities.

Unfortunately, in many rapidly changing cities of the Global South public realm spaces (green and grey) are under pressure to be redeveloped to meet economic or infrastructure provision demands. This is particularly the case in secondary cities where development pressures are often highest, but governance and planning systems are ineffective with limited resources. Especially within the context of future climatic conditions, ignoring the benefits of well protected and maintained public realm spaces on societal wellbeing in planning risks locking cities into compromised ecosystems mirroring those in the Global North.

Taking a wellbeing lens to urban planning can complement other priorities including climate change mitigation and urban resilience. A better understanding of the context-specific factors and their dynamic interactions which determine wellbeing in Low Middle Income Country urban settings will provide insights to improve planning.

Background

Urban public spaces

Natural urban public spaces are explicitly valued in the context of the UN Sustainable Development Goals (SDGs), specifically Goal 11 with target 11.7 to "provide universal access to safe, inclusive and accessible, green and public spaces, particularly for women and children, older persons and persons with disabilities by 2030". We advocate for a wide definition of urban realm public spaces to include combinations of natural (brown-, green-, blue-, and barren spaces) and built spaces (indoor and outdoor spaces).

Cultural ecosystem services

For public spaces we focus upon **cultural ecosystem services** (CES) defined as *"nonmaterial benefits that people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation and aesthetic experience"* (Millennium Ecosystem Assessment 2005).

CES emerge from human-ecosystem interactions in which human practices shape the context, and the context enables human practices. Building upon the conceptual frameworks of Fish and Bullock we explore person- and location-specific benefits.

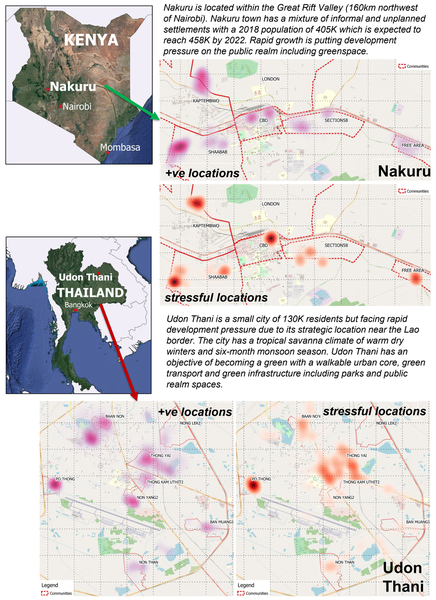
CES and Wellbeing

CES support physical and mental health through the benefits they provide (World Health Organisation 2017). Wellbeing can be defined from various perspectives.

- Quality of life - material resources (e.g. water and energy access, employment, housing) and social attributes (e.g. education, political voice and social networks)
- Environmental quality - individuals should live clean and safe places but also have the opportunity to act and move in health-promoting environments.
- Subjective wellbeing - emphasises life satisfaction (a cognitive evaluation) and emotional state (positive or negative).

The Centre for Wellbeing at the New Economics Foundation developed the 'Five Ways to Wellbeing', a universal framework to promote evidence-based practices for improving personal wellbeing. See Box 2 for how we have combined CES and the wellbeing framework pathways.

Box 1: Case Study Locations

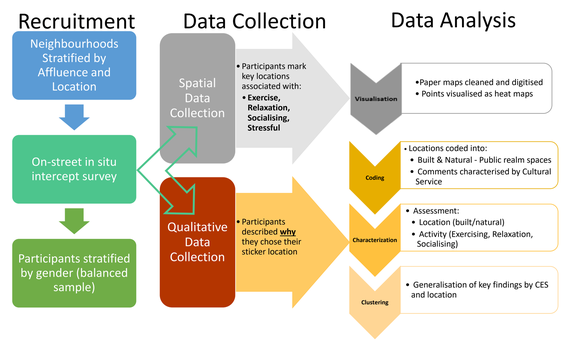


Nakuru is located within the Great Rift Valley (160km northwest of Nairobi). Nakuru town has a mixture of informal and unplanned settlements with a 2018 population of 405K which is expected to reach 458K by 2022. Rapid growth is putting development pressure on the public realm including greenspace.

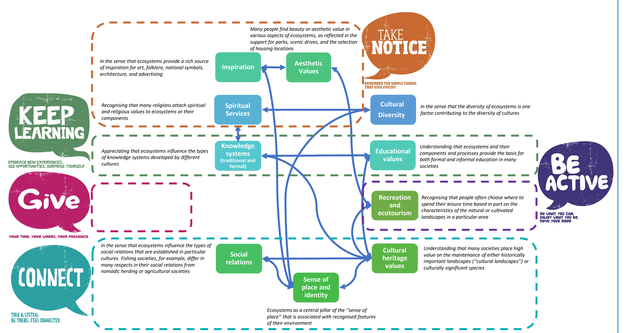
The positive and stressful locations are outputs from the Participatory GIS data analysis (see Box 3 for more details.

Box 3: Survey methodology

Participatory mapping activities – before data collection in Nakuru and an example completed map for one neighbourhood.



Box 2: Mapping Cultural Ecosystem Services to 5-Ways to Wellbeing Pathways



Cultural ecosystem services (MEA 2005) and their relationships and interactions with wellbeing pathways. *Key thematic interactions (identified as arrows) between the services have been identified by the authors. The services have then been grouped with their associated pathway to influencing wellbeing (based on the **5 Ways to Wellbeing framing**). It should be noted that 'Give' which includes time, presence and work does not map to the CES framework.*

This study forms part of the **SEI Initiative on City Health and Well-being**. The initiative (running from 2018-2021) investigates how evolving cities are affecting the well-being of residents and how this interacts with the overall health of city systems.

Novel methods of participatory data generation and collection have been employed across four interconnected activities:

1. ***Understanding the impact of urban forms' impact on health and wellbeing***
2. ***Co-designing urban citizen science monitoring***
3. ***Urban metabolism and participatory modelling***
4. ***Governance for greater urban equity and inclusion***

The new evidence we generate will be aimed at guiding policy recommendations to equitably maximize the well-being of urban populations whilst minimizing resource consumption and without undermining their resilience. For more information visit:

sei.org/projects-and-tools/projects/city-health-wellbeing-initiative/

Data Collection and Analysis

An on-street intercept survey was developed utilising a Rapid Appraisal Participatory-GIS methodology in our two case study cities (Box1). Related to the "five ways to wellbeing" we asked participants about **exercising** (staying active), **socialising** (connecting), **relaxing** (taking notice) and the disbenefit of stressful urban spaces.

Recruitment and data collection

Within each city (Box3), surveys were carried out in neighbourhoods representing a cross-section of local environmental, social and economic conditions identified in collaboration with local partners ranging from central to suburban locations, including fully to partially serviced areas in terms of public utilities.

Local facilitators set up a stand and invited passers-by to participate. The facilitators intercepted a purposive gender balanced sample of participants.

Data Analysis

Location Coding

Based on the description and comment, public spaces were extracted from all identified locations and coded as either built or natural spaces. Spaces that were not public realm, such as homes or offices, were excluded from further analysis. The classification of built and natural is fuzzy as built spaces often incorporate some vegetation and many natural or vegetated spaces include built infrastructure such as paths, fountains or exercise equipment. To facilitate the analysis only clearly identifiable greenspaces (parks, sports fields etc.) were coded as natural; all other places were classified as built.

CES Coding

The qualitative data, the comments indicating why participants choose particular locations, was coded according to the main components in the Fish and Bullock frameworks.

Acknowledgements

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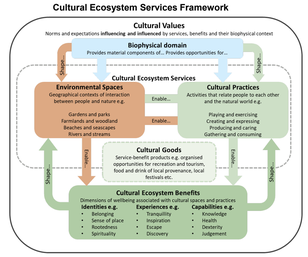
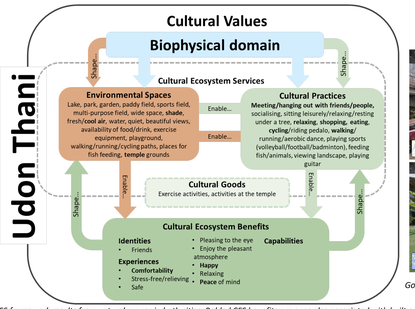
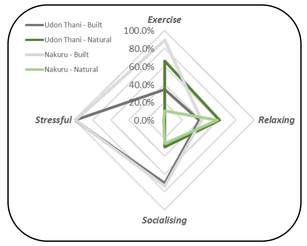
Box 4: Key findings

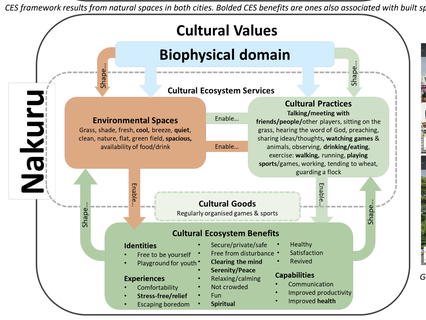




Google Earth images of example locations selected by residents

CES framework results from natural spaces in both cities. Bolded CES benefits are ones also associated with built spaces.





Google Earth images of example locations selected by residents

Results

Our study highlights that:

- Very different ecosystems (tropical-savannah (Udon Thani) to warm-Mediterranean (Nakuru)) can provide similar CES and benefits.
- Both the built environment and natural environment are important to socialising, exercising and relaxing and thus are key to enabling CES and wellbeing benefits.

In Udon Thani

- People selected location primarily based on:
  - Quality of the space (environmental space)
  - Cultural practices (activities)
- Natural spaces were critical to exercise and relaxing - the lakeside and park.
- Built spaces
  - were key for socialising (hotels and restaurants, shops and malls, the home neighbourhood, and places of worship)
  - were associated with stress. Stressful places were universally identified as built spaces - categorised as roadsides or the neighbourhood. Stress was associated with traffic congestion and busy places

In Nakuru

- People selected location primarily based on:
  - Convenience (including affordability)
  - Cultural practices (activities) and their enabled experiences
- Built spaces
  - Dominated as favourite places for exercising (roadsides) and socialising
  - Dominated as stressful areas (neighbourhoods and roadsides, and busy spaces)
  - Stressfulness linked to crime, anti-social behaviour, and poor-quality environments.
- Division of favourite places for relaxation was more evenly split between built and natural. Majority of relaxing places were natural - fields/open spaces (exercising and relaxing), and parks.

Cultural services provided by public spaces

- CES benefits from both built and natural areas included both experiences (stress-relief, clearing the mind, serenity, spirituality, comfortability, happiness) and capabilities (health).
- Our study captured experiences, but few capabilities or identities.
  - Identities-related benefits revolved around association with certain groups (youth and friends), but also "freedom to be yourself"
  - Capabilities-related benefits were ones enhancing everyday life, such as communication, productivity, and health.
- Cultural goods were only mentioned in terms of regularly organised activities related to sports, exercise or the temple.
- CES disservices not reasons for selection of stressful locations.
- The lack of responses around certain categories of CES and benefits (identities and capabilities) could stem from our focus on specific types of activities.

Recommendations for urban planning

- When planning for wellbeing benefits, a broader perspective on urban public realm space and the integration of green infrastructure into urban public realm spaces is needed, rather than the current focus on key public spaces or natural spaces. A question to consider in each case is what level of green – (or brown in dry locations or seasons) – enables wellbeing benefits?
- Increasing accessibility to key higher maintenance locations (e.g. parks) should be balanced with the greening of frequently accessed space to ensure equitable benefits across populations. Furthermore, dispersed lower quality natural spaces may provide greater equity of wellbeing and cultural service benefits across urban populations than concentrating resources on fewer, less accessible park locations.
- Making existing urban natural spaces more accessible (affordable, available, and usable) can promote societal wellbeing. As people are utilising space that are in proximity to their home, daily activities and routes, a wider distribution of planned and improved public spaces can provide opportunities to increase wellbeing benefits. For example, in Nakuru, current brown spaces, such as road verges, which are often informal and less maintained, are regularly used by a cross-section of residents.
- Further recognition is also needed about how form and management (of the space and its actors) affects use, either regulating or enabling it.
- A deeper look into how and when people are using spaces for cultural practices could inform prioritisation for integrating more greenery into built areas. This could include planning significant new greenspaces or integrating blue-green corridors so that people have alternative pathways which avoid exposure to heat, air pollution, and traffic-related risks, or adding greenery to used spaces to enable further benefits from these existing spaces.
- In planning spaces to enable key CES and their related benefits, the requirements (noise level, amounts & type of space, supporting infrastructure) for the desired cultural practices should be kept in mind.

CLIMATE EXPO