

VEGETATION IN SLUMS - BOOSTING LIVELIHOODS, WELL-BEING AND SOCIAL CAPITAL: A CASE SCENARIO OF MIDNAPORE CITY, WEST BENGAL

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ABSTRACT

Urban greenery provides ecosystem services that play an important role in the challenging context of urban deprivation and poverty. This study assesses the social importance of vegetation through empirical assessment of 8 urban slums rapidly develop along the fringe areas of Midnapur City, West Bengal. Vegetation played a major role in supporting nutrition by its role in food consumption, and in promoting health through the planting of species with medicinal use. Trees in slums also formed nodes for social activities including conversing and playing, domestic activities such as cooking and washing dishes, and livelihood activities such as the manufacture of broomsticks and tyre repair. Innovative methods of gardening were widely adopted, with kitchen gardens found planted in plastic bags, paint cans, old kitchen utensils and buckets indicating the importance given to planting in environments with limited finances. Short and narrow trunked trees with medium-sized canopies and high economic value, such as *Pongamia pinnata*, were preferred. The basic objectives of the study are to assess the species-specific characteristics (medicinal, culinary, ornamental, shade-giving etc.) of the vegetation encountered in slums, relating this to their contribution towards health and well-being. Employment opportunities, income level reduces the nutritional deficiencies among the slum dwellers. Species distribution and composition are strongly interrelated with social, cultural and economic activities in slums. Urban greenery is often positively correlated with better health and mental well-being in the slums. Keywords: Livelihood, Income, Social ecological systems, Urban Ecology, Urban Vegetation.

INTRODUCTION

Green spaces occupy an important function in the urban context and provide critical ecosystem services in congested urban environments, where more than half of the world's population is located. Sustainable cities depend on a healthy ecosystem that influences both human well-being and numerous economic activities. Trees in cities absorb vehicular air pollutants, buffer noise, regulate temperature and provide much-needed shade from the sun in tropical and sub-tropical belts. Greenery near residential areas promotes walking, thereby improving people's cardiovascular systems and reducing obesity. Green surroundings and home gardens reduce morbidity, increasing mental peace. Slum is a highly populated urban residential area consisting of densely packed housing units of weak build quality and often associated with poverty. The infrastructure in slums is often deteriorated or incomplete, and they are primarily inhabited by impoverished people. Slums differ in size and other characteristics, most lack reliable sanitation services, supply of clean water, reliable electricity, law enforcement, and other basic services. Slum residences vary from shanty houses to professionally built dwellings which, because of poor-

quality construction or lack of basic maintenance, have deteriorated. The study observed and gone through 8 slum areas located along the fringe areas in an around the Midnapore city, West Bengal.

REVIEW OF LITERATURE

Trollie M. Wood (1961) studied the “Vegetation in the Slums of Madras city. Ramakant (1968) conducted a survey of the “Dasnagar slum areas which came into existence during the industrialization process due to the migration of vegetation along the rural areas”. Umakant Tripathi (1975) studied the “Encroachment of forest in an around the cities of Bhilai and Raipur”. Dr. Z. T Khan (1996) studied the “Changes in the Socio- Economic Conditions of the Immigrants in Raipur city: A Case Study of Rehabilitation Camp Mana”. G.D. Suttles (1999) studied “The Social Order of the Slum of Chicago”. Lokesh Mohanty (2011) studied the “Growth & Vegetation in Slums of Tamil Nadu”. A Household Survey was conducted by Somenath Halder (2013) to “Study the Socio-economic level in English Bazar Town, Maldah District, West Bengal”. Divya Gopal (2014) studied “Vegetation in Bangalore’s Slums: Boosting Livelihoods, Well-Being and Social Capital”. Jayarami Reddy (2017) carried out a study of the “Socio- Economic status of the Slum dwellers in Hyderabad City”. Ramalingam (2018) give emphasis on “the socio- economic problems related to a poor level of income in the slums dwellers in Aurangabad”. Madhumita Ghosh (2022) studied the “Encroachment of slums caused massive degradation of urban forest - an overview of Kharagpur city, West Bengal”.

OBJECTIVES OF THE STUDY

The objective of the present study is to

- i) To assess the species-specific characteristics (medicinal, culinary, ornamental, shade-giving etc.) of the vegetation encountered in slums, relating this to their contribution towards health and well-being.
- ii) To evaluate the contribution of trees towards social capital, by recording the occupations and activities carried out under their canopy, as well as the role played by trees beyond their inherent characteristics, in providing facilities such as physical support.
- iii) To assess the cultural services provided by trees in slums that strengthen social capital, by focusing on the sacred species found in slums.
- iv) Through interviews with slum residents, we identify their requirements of urban greenery, using these to propose strategies for the improvement of the livelihoods of slum dwellers. Our findings enable us to add to our understanding of the socio-cultural importance of vegetation in the context of urban poverty, an aspect that has been insufficiently characterized thus far.

HYPOTHESES

Employment opportunities, income level increases among the residents of the slums by the glowing effect of forestry industry. Nutritional deficiencies reduce along with alleviating Poverty. Cultural services provided by trees in slums that strengthen social capital.

STUDY REGION

Midnapore is a city known for its history in the Indian state of West Bengal. It is the headquarters of the West Medinipur district. It is situated on the banks of the Kangsabati River. Midnapore municipality had a population of 1,69,264, out of which 84,977 were males and 84,287 were females. The 0–6 years population was 15,172. Effective literacy rate for the 7+ population was 88.99 per cent. It is the second largest city in Paschim Medinipur district after Kharagpur. The city has a Hindu population of 139,827 and Muslims population of 27,238. The multiple mosques and temples, many predating British rule serve as indication of how co-prevalent the two religions are in this area. It is an important religious spot for the Muslims of India and Bangladesh. Even though the interesting religious mixture would suggest religious tensions, remarkably Midnapore has never witnessed major Hindu-Muslim tensions in recent history. The population of the city in 2022 is estimated to have crossed 1,90,000 due to high urbanization and modernization in recent times which has caused a lot of immigration from all over the district.

SOURCES OF DATA AND METHODOLOGY

Primary data-based study collected through interview, schedule from 8 slums of Midnapore city. Purposive method of sample is chosen from the fringe areas. Keen observations were made to identify their cause of depletion related problems. Secondary data was collected from the Midnapore Municipality Office, Agriculture Department & Meteorological Department Kolkata, Survey of India Kolkata, Geological Survey of India, Kolkata, D.M office of West Medinipur etc.

PROCESSING OF DATA:

The different types of statistical methods like Percentage, “t” Test, “F” test, Correlation, Cross Tabulation using SPSS - 20 software been used. The information along with different data have been tabulated, proceed and analysed using computers and various statistical methods. The data have been represented with the help of suitable maps and diagrams.

The Sample Slums

In view of these 8 numbers of slums selected purposely for comparative study. Baivchara Busti, Chalaipara Busti, Kamarpara, Brojokishore Pally, Adibasipara, Gope Garh Busti, Mistri Para, Lal Dighi Buti are selected from the fringe areas of Midnapore city having moderate vegetation. Medicinal plants, herbicides plantation is there along the forest cover areas.

DISCUSSION

On the basis of purposive sampling the total 8 slums been taken from the fringe areas named Baivchara Busti, Chalaipara Busti, Kamarpara, Brojokishore Pally, Adibasipara, Gope Garh Busti, Mistri Para, Lal Dighi Buti are selected on the basis of having moderate vegetation. A total of 353 trees belonging to 26 species were encountered in the 8 slums that we surveyed. In addition, we recorded 15 species of shrubs, herbs and creepers. The most dominant tree encountered was *Moringa oleifera* (drumstick tree), widely consumed as a vegetation. Nearly half the tree population in slums had medicinal properties, while one-third were grown for their fruits. *Mangifera indica* (Indian mango tree) were the most popular fruiting trees. *Epipremnum aureum*

(money plant), Rosa species (rose) and Jasminum species (jasmine) were the most common ornamental plants, present in more than 60% of slums. A small proportion of plants were grown for their fruits such as Carica papaya (papaya), Musa paradisiaca (banana), Momordica charantia (bitter gourd), Dolichos lablab (hyacinth bean) and Solanum lycopersicum (tomato). Plants grown for consumption included Ricinus communis (castor), Oxalis corniculata (common sorrel), and Piper betle (betel plant). Notably, almost all the plants encountered were actively planted by the slum residents. There were species of flora in slums that were sacred (in the Hinduism tradition): four species of trees, and two species of herbs. With space constraints being a characteristic feature of slums, there were more potted plants than those growing directly from the ground. The pots used were highly innovative addressing key issues such as limitation of space and finances. The types of pots seen were earthen pots, plastic pots, cemented structures, plastic bags, discarded paint containers, earthen water pots, plastic buckets, metallic cans, hindalium pots (an alloy of aluminium), battery cans and aluminium buckets. The potted plants were located on windowsills, parapets, roofs, etc.

CONCLUSION

Our results suggest that species distribution and composition are strongly interrelated with social, cultural and economic activities in slums. Urban greenery is often positively correlated with better health and mental well-being in the slums. The tree population we encountered in slums has medicinal properties, while everyone out of three trees we encountered is fruit bearing. The drumstick tree provides an excellent example of this, being the most frequently encountered species, with medicinal as well as culinary uses. Also known as a “miracle tree”, drumstick fruits and leaves provide rich sources of proteins, vitamins and minerals, and are known to play a vital role in meeting nutritional deficiencies and alleviating poverty. Some slum residents and nature enthusiasts in Midnapore indicate in discussions that drumstick trees were intentionally planted in slums during the 2010’s to reduce malnutrition. However, we could not trace any official records that verify this claim. The most frequently found tree species—neem—is sacred and medicinal. Every part of the tree is used in traditional medicine. Thus, we find that the majority of the trees found in slums have multiple uses, and are of high economic value.

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