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DEVELOPING A SPATIAL e-GOVERNANCE MODEL FOR URBAN AREAS[1]

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ABSTRACT

India, at the present time, is undergoing fast paced transformations. It has seen a shift from governance to electronic means of governance using ICT, called as e-governance, but the concept of spatial e-governance is still far to be reached in India.

Even after many years of introduction of e-governance, the exploration of the benefits derived from the use of spatial e-governance in planning, delivery of services and management are limited. Many governance activities are using spatial component in them but a comprehensive mechanism for the same is still lacking and hence the benefits cannot be realised to the maximum potential. Aim is to strengthen the benefits derived from the use of spatial e-governance which will be done with the help of a model for spatial e-governance.

Barriers that an urban area needs to overcome for successful spatial e-governance in the city are demonstrated with the help of a case study. For this pre-requisite is understanding of the evolution from governance to e-governance and finally to spatial e-governance, along with a study of implementation of various programmes and initiatives by the Government of India and showcasing the best practices at Global, National and local level is done.

1 The paper is based on a thesis of the same title, submitted in partial fulfilment of the requirement for the award of the Degree of Bachelor of Planning, School of Planning and Architecture, New Delhi.

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MODULATING THERMAL ENVIRONMENT THROUGH STREET GEOMETRY

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ABSTRACT

The main reasons of formation of Urban Heat Island (UHI) comprise trapping of heat by built form, thermal properties of the building materials, replacement of tree cover by expansively built surfaces and the anthropogenic heat sources. Street geometry forms the fundamental unit of intervention for easing the UHI effect as it controls the solar access and nocturnal cooling. The canopy layer temperature of the street is an outcome of the interactions of the climatic elements like solar radiation and wind, with the built form. This paper evaluates the effect of street geometry ratios like aspect ratio and facade spacing ratio on the thermal environment of north-south oriented streets in Nagpur (latitude 21°06'N, longitude 79°03'E), India. The thermal performance is evaluated for a pavilion form through ENVI-met 4.0 simulations. As UHI increases energy expended on cooling the built spaces, the focus of this research is to identify the urban geometry requiring minimum cooling degree hours (CDH) for a typical summer day. The comparison of air temperature at 15:00 hrs. among different neighbourhood configurations using the pavilion form illustrates the combined thermal effect of aspect ratio and facade spacing ratio. The urban geometry with aspect ratio 2.0 having spacing ratio 0.67 gives the best thermal performance.

Keywords: *street geometry, thermal environment, ENVI-met simulation, aspect ratio, facade spacing ratio, UHI*

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MEASURING SUSTAINABILITY OF MILLION PLUS CITIES IN INDIA: AN INDEX BASED APPROACH

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ABSTRACT

The paper focuses on developing an index to measure sustainability of urban settlements. A set of thirty two indicators were formulated after an extensive literature review and based on relevance to the study context, data availability, simplicity of understanding and periodicity. A correlation analysis was carried out to assess relationship between the thirty two indicators categorised under eight domains representing broad three sub themes. The indicator values were normalized using Z-score technique. The Z-scores computed for each of these indicators were then used to develop a City Sustainability Index (CSI). The index is pilot tested on eight million plus cities (in descending order) in India to assess their present urban sustainability status and to identify the gaps in achieving their goal of healthy quality of life. The proposed index provides a useful measure of assessing the present state of urban environment, identifying problematic areas, providing necessary inputs to the planners and policy makers to facilitate decision making for the sustainability of urban settlements and; informing the general public about the state of the environment to raise awareness thereby ensuring improved accountability and efficient delivery from the service providers to ensure sustainability.

Keywords: *Sustainability, urban settlements, indicators, correlation analysis, City Sustainability Index*

BACKGROUND

The 21st Century is the 'Century of the City' with more than half of the world population now living in cities of different sizes and within the next two decades, nearly 60 per cent of the world's population will reside in urban areas and it is in the developing countries

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CULTURE AND PLANNING OF CITIES: A REVIEW OF APPROACHES

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ABSTRACT

Though the significance of culture in defining our existence, imparting meaning and identity, inculcating the sense of belongingness and unity that lead to building communities and nations at large is well understood; loss of culture is evident in most of the cities in India. Nurturing cultural values, expressions and heritage, and creating an enabling environment are essential not only for ensuring their continuity and cultural diversity but also for sustainability and survival of culturally rich societies. The aspect of culture also needs to be incorporated in the planning process of cities. This paper presents different approaches adopted for addressing culture in cities at international level followed by review of approaches adopted by Indian cities. Further, critical review of Heritage City Development and Augmentation Yojana (HRIDAY) - the recently launched mission of the Government of India (GoI) aimed at preserving and revitalising soul of heritage cities to reflect their unique character is presented. A 'Cultural Regeneration Model' with 'decentralized approach' integrating culture with entire urban fabric at the initial stage of Master Planning is recommended for Indian Cities. Further, an evaluation mechanism to measure its output and outcome for culture in the urban context is recommended. Lastly, the study recommends policy interventions that can lead to a more integrated approach to culture in cities.

Keywords: *culture and cities, enabling environment, cultural planning, creative cities, HRIDAY*

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CO-BENEFITS OF MUNICIPAL SEWAGE MANAGEMENT: A CASE OF JAIPUR (INDIA)

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ABSTRACT

Future rapid urbanization in developing countries demands a massive provision of treatment of wastewater and its disposal, as well as safeguarding a healthy environment. The co-benefit approach is especially important for developing countries, which have to overcome many urban challenges simultaneously with limited capacities and resources. Even after many decades of the implementation of rules, and guidelines, many cities in India do not have the proper capacity of treatment of wastewater and its disposal. Jaipur city has taken up the greenhouse gas mitigation measure from existing sewage based biogas power plant. Other than the reduction in the emission levels of greenhouse gases, multiple co-benefits are also documented. Furthermore, none of the existing frameworks are designed to identify and measure specific co-benefits in a city from Sewage Treatment Plant (STP). Climate Co-benefits is a fundamental component to achieve the goal of Paris Agreement on climate change and fulfil the principles and commitments aiming to make urbanization more sustainable. The process of sharing knowledge and alliances can well expand in other cities and which in turn can generate more positive co-benefits.

Keywords: *Co-benefits, Electricity Generation, Greenhouse Gas, Jaipur, Sewage Treatment Plant, Wastewater*

INTRODUCTION

The world is experiencing increasing waste generation due to rapid urbanization, accelerated socio-economic development, and change in living patterns and standards in recent years. Urban India accommodated 377 million people (31.2 per cent of total population), the second largest urban population in the world (Census of India, 2011a). According to United

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WOOD FUEL STRATEGY FOR ENGLAND FOR SUSTAINABLE DEVELOPMENT ...OF THE WORLD?

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ABSTRACT

The Wood Fuel Strategy for England has been launched by the Government of United Kingdom (UK) to encourage energy resilience and economic development of the region by 2020. The policy is also argued to benefit the natural environment in the country by controlling emissions and protecting habitats. While there are on-going debates on its impacts at local and national scale, its contribution towards sustainability on a global scale is less discussed. Thus the paper focuses on pointing out a few key implications of the policy on the rest of the world; highlighting positive effects such as mitigation of climate change and its linkages with livelihoods, biodiversity protection and disaster risk reduction. At the same time, the policy also suggests a potential disruption in the international market that supplies wood fuel to the UK. Highlighting the unique context of the country, the paper emphasises that –a scenario that projects success of UK's wood fuel policy, is inclined to conserve the global environment and related socio-economic aspects rather than offering direct social and economic benefits across the world.

Keywords: *Wood fuel strategy for England, climate change, sustainable development*

INTRODUCTION

Historically, wood has been the most common source of renewable energy across the world. But with growing energy demand and an increasing drive to protect the earth's environment, the use of the resource has come under review. England's long-standing tradition of forestry has encouraged the government to take a bold step towards a renewable future. The wood fuel strategy for England is set to maximise of the potential of biomass energy. England as a case is even more important as it portrays wood as a renewable fuel in the context of current technological advancements – and as a choice as opposed to a necessity emerging from poor access to other sources of energy like in many other parts of the world. This policy is advocated to have positive impacts at the local as well as national level, but its