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Urban Rail and Sustainable Development Key Lessons from Hong Kong, New York, London and India for Emerging Cities

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Abstract

This paper discusses the significance of urban rail in sustainable development in the developing and developed world by examining the cases of Hong Kong, New York, London and Indian cities. The paper analyses the project structuring and financing of the urban rail system in these cities and its contribution to shaping sustainable urban growth and sustainable urban development in general. Observations from the case studies underscore the paper's main emphasis which is that both private and public funded urban rail require innovative financing mechanisms (specifically land based) to sustain or revive themselves financially and that urban rail lends itself to such innovation more than urban road projects as well as multiple other co-benefits. The paper reviews metro projects in several Indian cities and explores the applicability of innovative financing mechanisms and the challenges in adopting them in the Indian context to enable a sustainable urban development model for emerging cities.

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1. Introduction

The 21st century is characterised by extensive and rapid urbanisation in developing countries. UN Habitat (2008, p. xi) suggests that over the next four decades the urban population in developing countries would grow by five million per month on average, comprising 95% of the global urban growth. According to Glaeser (2011), urban development is essential for driving economic growth and that it can also contribute to broader sustainable

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development. The new sustainable development goals (SDG's) include a city goal as it is recognized that urbanization can play a critical role in addressing all the SDG's (Daniel, 2015).

India is set to witness peak urbanization in the next four decades (Heilig, 2012, p. 1). India's urban population is projected to increase from 377 million in 2011 to 600 million by 2031 (Ahluwalia, Kanbur, & Mohanty, 2014, p. 2). This frames a challenging scenario for Indian policy makers, but also provides opportunities to improve existing and furnish new sustainable urban development policies that could provide a model for emerging cities globally.

Newman & Kenworthy (2015) draw attention to decreased automobile dependence and increased economic growth across cities globally being synchronous with thriving urban rail and consequent revitalization of the urban fabric. This paper shows how such development that simultaneously reduces car dependence and increases economic growth can be a key tool for achieving sustainable development. Indian cities are in a position to leapfrog automobile dependence by packaging urban rail and land revitalization based on global best practice. Urban rail displayed its potential as an axis for sustainable urban development and economic growth in the early 20th century in New York and London. Hong Kong followed the same path in the latter half of the 20th century. These case studies will be examined before applying them to Indian cities.

Most sustainable development, specifically in cities, requires new infrastructure and this requires investment. This paper will show that governments increasingly cannot provide such investment at the levels required and thus private investment through partnership projects are required. The case studies are on to show that urban rail is more likely to provide such investment opportunities than urban roads and achieve more sustainable outcomes.

The Government of India (GoI) has been financially supporting urban rail since 2011 in cities with population over two million (Ministry of Urban Development, 2012). Public acceptance of urban rail has enabled a cut-back of this population norm to one million to extend this benefit to medium size cities (Ministry of Urban Development, 2014a). Urban rail (metro) is currently being planned for over 50 Indian cities (Modi, 2015).

India, like all emerging nations, faces a critical investment gap in infrastructure so investing public funds in over 50 capital-intensive metro projects is impossible without new sources of investment. The situation demands that metro financing be looked at from a new perspective. This includes analysing the existing framework of governance, community participation, project structuring and implementation, learning from evolved urban rail systems and looking for improvised financing solutions.

Cervero and Duncan (2002), Cervero (2004) and McIntosh et al. (2017) demonstrate that increased transit accessibility uplifts the value of the accessible land market. This transit-linked shift in value can be captured through land value capture (LVC) mechanisms. According to Vadali, Aldrete and Kuhn (2013), LVC mechanisms provide a significant untapped resource for developing nations where the real-estate market is less rigid, more profitable and can sustain healthy population density and transit ridership. The National Urban Transport Policy (2014) and the 12th Five Year Plan (2012-2017) of India acknowledged the impact of urban rail on land and LVC as a possible financing mechanism to be used in Indian cities (Ministry of Urban Development, 2014b; Planning Commission, 2013).

This paper provides an overview of the development of urban rail systems using three global case studies, their evolving project structure and potential for innovative financing, especially LVC. It examines these three global urban rail systems first, and draws comparisons with them further to develop a way forward for Indian urban rail systems and hence any emerging urban area seeking greater sustainable urban development.

2. Global Case Studies

London, New York and Hong Kong have for long integrated land use with transit. This enabled distinctive and innovative methods of financing where LVC emerged as a source of finance to defray the urban rail project cost. Within these methods, private developers played a significant role in the financing and development of the New York and London rail systems in late 19th and early 20th centuries. In case of Hong Kong, the government only integrated transit and land use plans to finance their rail system. These cities provide lessons for the rapidly evolving urban rail sector in India and for other emerging systems around the globe.

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