BACKGROUND

Resource Efficiency for an Urbanising India

Urbanising India – Issues and Challenges

Cities are the focal point where opportunities and challenges of global transformations culminate. The trend of rapid urbanisation and the economic, social and environmental implications it exhibits reveal the importance of cities. The world's urban population has grown rather speedily from 746 million in 1950 to 3.9 billion in 2014. It is expected to surpass 6 billion by 2045; 90% of which will occur in developing countries particularly, South Asia and Africa (Venables, 2015).

India is urbanising, at a pace it has never witnessed before. It took 40 years for India's urban population to rise by 230 million from 1971 to 2008; however it is expected that the next 250 million will be added in less than 20 years (Sankhe et al., 2010). Urban areas act as locus of innovation and economic growth. The phenomenon of urbanisation creates various positive reinforcements such as contribution to economic growth and swifter access to opportunities. It's not just the urban population, but urban areas itself that have grown from 2,774 towns in 2001 to 7,935 in 2011 (Census of India, 2011). By 2030, we expect 68 cities with a population of more than one million, 13 cities with more than 4 million people and 6 megacities with populations of 10 million or more.

However, in India this trend of rapid urbanisation has been unplanned and haphazard. The impacts are witnessed as inadequate building and maintenance of urban infrastructure, poor delivery mechanisms for public services and over exploitation of natural resource base. The quality of urban life and its resource footprint are strongly linked and the increasing need for basic infrastructure construction to support it signifies that there will be increasing pressure on the earth's carrying capacity.

Resource Footprint of an Urbanising India

A sustainable city is a human settlement that is inclusive, safe, resilient, productive and relatively decoupled from resource use. However, there is relevance of problems connected with rapid urbanisation and growth of city agglomerations. It entails increasing consumption of natural resources like land, water, energy and building materials to meet the rising need for construction along with contributing immensely to CO_2 emissions. Case in point is the fact that buildings use 40% of energy, 30% of raw materials, 20% of land and water each, whilst accounting for 40% of CO_2 emission, 30% of solid waste generation and 20% of water effluents (Roychowdhury, 2011).

India is in the process of implementing programmes aimed at enhancing its urban transformation. Majority of the construction under this urban transformation would be in the residential sector, estimated to have an increase of 4,972 million m^2 of area from 2005 to 2030 (ASCI-NRDC, 2010). This would involve huge investment of resources, financial and natural, resulting in competition and conflict especially over the finite natural resources. City development and growth would impact food security as more arable land would be swallowed by urban areas and producing building material would place higher demands on the ecosystem. Already 67% of the cement (consumes 75% of limestone) produced is used by the housing sector in the country (NSDC, 2009), while 91,666 million tonnes of sand was consumed for building 42 million units of housing in 2011 (Krishna, 2013). Further, the current brick making process uses about 350 million tonnes of fertile top soil annually (DA, 2012) to meet the brick demand.

It is thus imperative to assess and address conflicts amongst critical resources across industries, construction, agriculture, ecosystems/ecological flow to ensure that we do not irreversibly damage the ecosystem. Building synergies across sectors for the limited natural resources and overcoming barriers that exist on the pathway of resource efficient urbanisation is imperative.

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BACKGROUND

Transitions for Resource Efficiency

Cities have the potential of delivering cost-effective policy responses to ensure resource efficiency as they are the hubs of innovation that can promote clean energy systems, spatial development and waste management strategies (OECD, 2010). Sustainable urbanisation entails developing perspectives from a regional level as regions are defined not only by geographic proximity, but by their economic, social and ecological connections and are overlapped by transportation systems, energy supply structure, water supply mechanisms, etc.

Though comprehensive regional planning for overcoming resource conflicts amongst the various sectors is the overarching solution, developing resource substitutions and/or synergies is a critical part of this solution. For example, in the building sector, replacing soil by fly ash (a by-product of thermal power plants) is one of the potential solutions for decoupling with co-benefits. Substituting burnt clay bricks with fly ash bricks will reduce the pressure on soil resource that helps in meeting food security concerns and reduces greenhouse gas emissions (DA, 2014).

The kind of transitions needed to move towards a resource efficient urban Indian landscape demands immediate actions. This would entail building skills (technical and managerial); influencing behaviour and strengthening systems, of organisations, institutions, groups, and individuals (UNEP, 2011). Thus, the question remains as to who/what would be the 'triggers' of change and how would the changes be implemented.

TARAgram 2105 – India Post 2015: Investing in Sustainability

The formulation of the Sustainable Development Goals (SDGs) offers us an opportunity to redefine India's development by not only focusing on the ends, but also on the means to achieve it. In order to accelerate towards a sustainable future, the Yatra will focus on three priority areas. **Resource Efficiency for an Urbanising India** is one of the focus areas of the Yatra. This focus area will deliberate on the investments with respect to tangible resources (land, water, energy, building materials) and intangible resources (policy, institutions, capacities/skills) required in order to adopt a resource efficient urban environment. Further we hope to build our understanding on the possible pathways to achieve the same, while exploring different needs and requirements of key stakeholders, and the role they play in triggering this change.

The Yatra involves a Field Visit that showcases the practice with policy connect, followed by a Round Table Discussion that aims to bring forth perspectives from various stakeholders. At this Round Table Discussion (10th Oct 2015) we hope to address the following questions;

- Increasing conflicts over natural resources to satisfy the demands from various sectors are becoming the norm. How do we build synergies and mitigate trade-offs across sector to avoid exploiting critical resources? How can these alternative approaches be promoted?
- What are the important investments and changes required in the construction sector? How can they be used to catalyse the movement towards a resource efficient development pathway?
- What kind of partnerships can be adopted to achieve this pathway? What role do the key agents of change play in making this transition smooth and inclusive?

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