

## **Urbanisation of Emerging Economies and the Challenge of Sustainability**

The year 2005 was the year in which, we are informed, that more than half of the world's population came to be settled in urban communities.

The “emerging economies”, as the nations China, India and Brazil are being characterised, represent the leading edge of this phenomenon. These large geographic regions, with their enormous populations will undergo a rapid shift toward urbanisation in the coming two decades. It is presumed that these, as a set, share attributes that produce the conditions for sustained and rapid economic growth, even though they have divergent geographies, political systems and social histories.

There is both trepidation and euphoria at the predictions of rapid and sustained economic growth. The euphoria results from the attainment of criticality in the bank of resources of knowledge and institutional infrastructure to integrate productively with global markets. The trepidation is voiced by those who see the severe disparities of wealth and opportunity being further exacerbated due to the developmental process being centred largely on the already advantaged urban populations rather than the majority of citizens.

The city has been the province of the wealthy and the powerful and it is built in their service – the large numbers who arrive from the rural hinterlands to serve its needs and in the hope of secure livelihoods are neither provided for by the formal systems of city management nor can they afford the costs of urban life. This dichotomy has characterised the modern city of emerging economies and constitutes the social dimension of the challenge of sustainability.

In the emerging economies the overarching force that drives the process of urban development today is globalisation. This brings with it the habits and expectations of the dramatically visible “MNC life style” as symbols of progress and success. Translated into physical built space this means a growing preference for a materiality of construction with high embodied energy – steel, glass, aluminium. It also brings a surge of demand for artificially lit and airconditioned indoor environments - the mall, the office, the hotel or the multiplex. Compound this culture of images (rather than of substance) with no regulation on energy consumption of such buildings and we have the recipe for first an explosion and then a perpetual bush-fire of energy consumption.

The “explosion” is the immediate impact of the consumption of high embodied energy materials in the sudden boom of construction. The perpetual bush fire is the spiralling demand of energy for operation of buildings and urban infrastructure. Add to this the resource scarcity for the majority of citizens to pay for the engineering of basic needs of such as water, sanitation and clean air. Consider too the social and ecological displacement necessitated across the countryside by the demands of urban development. This constitutes the environmental dimension of the challenge of sustainability.

Do we expect the gains of accelerated economic development centred around cities to be translated into the general social good and environmental security? Yes, but only if the initiative is seized to find alternatives to counter the negative perceptions expressed above. Clearly, conventional models of urban systems and capital intensive technologies for buildings and urban infrastructures are not going to be affordable. Innovation is necessary on many fronts:

First, a wealth of low embodied energy building materials – stabilised soil, processed stones, processed biomass – locally produced can provide most of the construction materials required for buildings. We must call upon the creative skills and the imagination of the design and engineering professions to create the new aesthetic founded on the environmental principle of materiality.

Second, the building fabrics if designed to moderate unfavourable external climate can significantly reduce the demand for airconditioning and heating.

Third, building tall is foolhardy – conveying goods and people against gravity and holding them secure up in the sky is the formula for the highest possible consumption of energy in building construction and operation. So, urban planning must find the optimal balance between the horizontal distribution of infrastructure and densities, while building close to the ground.

Fourth, public transportation systems of bus and train combined with pedestrian, bicycle and small vehicle access must take preference over private motor transport.

Fifth, decentralised technologies for water and waste management combined with an interactive structure of built up and natural ground can provide low energy, low cost solutions to environmental security.

If the above strategies work in the direction of meeting the environmental challenge, it will be the indigenous creativity and enterprise that works on these strategies which will form the circuit for wider distribution of wealth generated by expanding global trade and thus respond to the social challenge.

The light that signals the hopeful potential of meeting the social and environmental challenges of rapid urbanisation emanates from the combination of two factors. The emerging economies are youthful societies with a median age of 25-30 years – a store house of creative energy we have never seen before. The information and communication revolution is reaching far and wide, giving these youthful societies access to knowledge and the capability to choose their futures intelligently. Might the combined force of these two factors lead governments and the powers that be towards a vibrant society based on environmental wisdom?

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