

TOWARDS MORE LIVEABLE CITIES THROUGH SMART GROWTH INITIATIVES

By
MAY MATHEW*

ABSTRACT

The challenge faced by the world community is, to attain the economic development, leading to human development and vice versa, while safe guarding the environment and ensuring the optimum use of natural resources. The author introduces the HD/EFP concept (human development achieved per ecological foot print in global hectares) to evaluate and monitor the sustainability of cities where lions share of the human population are expected to live in the 21st century and onwards. 'Planned, Compact, High Density Development with Compatible Mixed Landuse (PCHDCML)', which is known under the pet name 'Smart Growth' among the world community, can contribute a lot towards this HD/EFP concept. Awareness on the potential of 'Smart Growth' among the Civil Engineering Community can contribute a lot during infrastructure planning, which can accommodate high density, the essence of Smart Growth. Very often high density proposals are hampered by the infrastructure of limited capacity like the width of the road, capacity of the water supply distribution lines etc.

With nearly half of its population living in cities the world is already urbanized in terms of knowledge, attitude, aspiration, technology and information as even the most rural societies are tied up to a global network of cities with vast web of communication and transport. The telephone, internet, elevator, cheap air transport etc conveyed people, ideas, and goods both horizontally and vertically with an unprecedented volume and velocity. The nodal centers of all these activities are 'the Cities' a place of deals and decisions, take offs and landings and a place which is less concerned about the nature.

Out of 3 billion world population nearly every other person on earth lives in a city. Planet earth hosts 19 cities with 10 million plus population 22 cities with 5 to 10 million population 370 cities with 1 to 5 million and 433 cities with 0.5 – 1 million population. By 2030 nearly 60 % of the world population is expected to live in cities. The current world wide rate of urbanization is about 0.8 % per year varying between 1.6 % for all African countries to about 0.3 % for all highly industrialized countries. Urbanization of poverty is also a growing phenomenon and it is estimated that 25 % to 33% of all urban households in the world live in absolute poverty. Shelter, Society, Environment, Economy and above all system of governance can contribute to urban vibrancy and viability in the globalizing world.

'Cities are engines of economic growth' say economists. Cities produce 55% of the GDP of poor nations, and 85% of the GDP of rich nations. The productivity in cities when compared to rural areas is very high. This is due to the high population density in the urban area which enables better functioning of labour markets, lower transportation costs, faster diffusion of knowledge, and larger economies of scale in production and due to a critical mass of adjacent consumers.

Cities are nodal points of production of 'goods' as well as 'bads'. World cities are major contributors of global warming, Chloro Fluro Carbons (CFCs) causing ozone layer depletion, acid rains and many of the environmental problems of the modern era. Cities are the major consumption centers of natural resources and energy.

There, comes the importance, of visionary decisions on the cities of tomorrow to make it more liveable for all sections of society and for the future citizens as well while maintaining a sustainable globe where land, water, and ecosystems are protected. This is the essence of sustainable development.

At the world summit on environment in Stockholm in 1972, nations resolved to protect the environment. Attempts to protect the environment brought to the revelation and resolved in 1992 at the Rio-Summit that the sustainable development is the answer. In sustainable development the economic development and

*Town Planner, The Greater Cochin Development Authority, Cochin-682020

environmental protection goes hand in hand while safeguarding the aspirations of society of today and tomorrow. The earth summit in Johannesburg 2002 brought to the truth that no sustainable development is practicable without the alleviation of the poverty of the third world countries.

Many indicators/indices of development are formulated by the world community. The per capita income, inequality adjusted per capita income, physical quality of life index and Human Development Index are only some of them. Most popular and widely accepted development index is the Human Development Index (HDI) formulated by the United Nations Development Program (UNDP). The output of all development efforts is 'Sustainable Human welfare' indicators of which are health, education and income. All the three are given equal weightage in the formulation of HDI... Adult literacy rate and gross enrolment ratio is considered for the formulation of the education attainment index. PPP adjusted real per capita income is considered to find the standard of living index. Thus HDI is the most comprehensive and the best available indicator of the final output of any development exercise the 'Sustainable Human Welfare'

The Habitat II agenda of the United Nations Center for Human Settlements (UNCHS) resolved to formulate the Global Urban Observatory and the data pertaining to 236 cities of the world are available and hence the Human Development Index of the world cities can be calculated on the finger tips. But the Human Development attained in a city cannot be seen in isolation as cities are centers of consumption of natural resources and energy.

The researches all over the world indicate a strong correlation between energy consumption and GDP of nations and it will be true for the energy consumption and GDP of cities also. GDP of cities are commonly known as 'City Domestic Product' which is not calculated directly for the cities all over the world. The City Domestic Product in the 'Global Urban Indicator Program' is derived from the state/district domestic product by finding the average productivity of the

primary/secondary/tertiary worker by the comparing the wage rates of workers in the city and suburbs. The strong correlation between energy and GDP depicts that the manner of relationship is different for the developed countries and developing countries. The energy efficiency is more in the case of developed countries which is often represented by the energy intensity which is the energy required to produce one unit of domestic product (energy per GDP). This warrants the need of **energy conservation, sustainable building construction and other energy saving urban development practices** for the cities of developing countries to make it more **liveable** where lions share of the urban population are expected to live.

Cities being the main consumption centers of energy and natural resources, are to be brought to a common platform, to quantify the total input of the city. The ecological footprint analysis (EFP) technique adopted by world wildlife fund for nature (WWF) evaluates the combined effect of energy and renewable natural resources consumption. EFP analysis was invented in 1992 by Dr William Rees and Maths Wackernagel at the University of British Columbia. EFP calculations provide compelling evidence of impacts of consumption. EFP compares the natural resources and energy consumption with the nature's biologically productive and assimilative capacity. EFP of a city is the area required to produce everything that the city consumes and the area required to assimilate the waste generated. EFP is measured in global hectares. A global hectare is one hectare of biologically productive space with world average productivity. EFP of an average person at the global level in 1999 is 2.3 hectares while global bio-capacity was only 1.9 hectares. This means that mankind as a whole is using renewable natural resources and energy at a level 20% above the earth's bio-capacity in 1999. Since 1980s mankind has been living with the so called 'ecological deficit' or 'over shoot'.

EFP analysis of WWF reveals some stunning truths as the following.

If everyone on earth live like the average north American it would require at least three earths

to provide all the material and energy he/she used

75% of the world consumption is by 20% of the affluent class people of the developed countries while only 25% of the world consumption is by 80% of the balance people on the earth.

This demonstrates the ethical dimension of the sustainability dilemma and questions the development model of developed countries.

As stated in Living Planet Report 2000, since 1970 the global consumption of natural resources has risen by 50% while earth's natural wealth has decreased by over 30%. This demonstrates the relevance of more liveable cities where 'Human Welfare' indicated by 'Human Development' is to be seen in comparison to the ecological footprint (EFP) of the city. **HD/EFP index** may bring down the rank of some developed countries below in the list. This demonstrates the unsustainable development paradigm of the developed countries.

Often blamed for more traffic, crime, parking shortages and ugly architecture density faces broad opposition. Objections to density are without basis and it is an asset rather than a liability. But density can backfire if it is not properly designed, which often feeds public frustration. A common community response has been to oppose any and all density.

Research works and pilot studies all over the world prove and demonstrate that density creates great places to live by creating walkable communities with mixed land use. High density development contributes to the viability of a wide range of businesses in nearby locations which in effect creates walkable communities.

Also high density development supports housing choice and affordability. In contrast to conventional development in which housing tends to be similar in style and size, higher density projects can provide town houses, apartments, accessory units and even live work spaces to accommodate a broad range of life styles.

Higher density means less land per unit which reduces the site preparation, foundation cost, less road per house and less per capita capital cost for water supply, sewage etc. Thus high density development reduces the cost price of the unit dramatically which ultimately increases the affordability of the buyer and profit of the seller.

Density also expands transportation choices, walking cycling and even make mass transit options like bus and rail a viable enterprise as user can avail the facility at an affordable price while the entrepreneur will be highly profited as more passengers can be obtained from the transit points. From all the above it is seen that density improves communities fiscal health as it reduces the energy spent on personalized vehicles, avoids infrastructure duplication and minimizes the traffic blocks. All these savings are pocketed as cash, which is shared by the buyer and seller.

In a region depended on agricultural production compact high density development helps to protect valuable farm land. The protection of farmland in effect protects the forest land as it curbs the invasion of forest land. Thus high density development contributes to environment. Less traffic block and less dependency on personalized vehicles reduce the green house gas emissions. The concentrated development and people within a small geographical area protects the valuable open space, habitats and ecologically sensitive areas. It also helps in minimizing water pollution and air pollution.

Density also improves security. The common perception is that density increases criminal activity. This belief disregards the fact that criminals tend to favour desolate rather than busy places. Density has the potential to increase social interaction and deter crime. The concept sometimes referred to as the 'eyes on the street' reflects the possibility of less chances of emptying out of streets and common areas.

High density compact development can strengthen the tax base of the local governments and reduces the tax load of the residents. As the development is

concentrated revenue expenditure on public services can be minimized while revenue receipts can be maximized. This may be where the shoe pinches for the state and local governments of Kerala State in which revenue expenditure is alarmingly very high while revenue receipts are very low. The public debt is skyrocketing to an unrecoverable heights and the scattered settlement pattern prevalent in Kerala State may be a very strong reason for the high revenue deficit.

Smart growth neighborhoods with proper land use zoning can ensure cheaper land supply in the city for productive purposes like industries and commerce and contributive purposes like provision of physical and social infrastructure which often leads to economic development and job opportunities.

All the above illustrations depicts the high scope for smart growth communities to make the cities liveable while ensuring less 'Ecological Footprints' and high 'Human Development' leading to 'Human Welfare'.

Mega cities of India are overflowing with population due to migration which often exceeds the capacity of the system to accommodate and is often identified as a 'sustainability issue'. Population concentration beyond the system capacity is also dangerous as it back fires and spoils the entire system by creating frustration, traffic block, congestion, chaos miseries etc. If Smart Growth with energy efficient building practices is launched as a national policy and smart growth with **infill development and redevelopment with energy efficient building practices** are encouraged, it can check the migration

of people from other parts of the nation to the mega cities. This can ensure environment, economy and safeguards the aspirations of the people of today and tomorrow.

The need of the hour is the propagation of the concept of smart growth with compatible mixed land use and energy efficient building practices at the grass root level to ensure public acceptance while legislative and policy level initiatives are to be ensured from the top. Smart growth with energy efficient building practices can definitely contribute to more liveable cities of tomorrow, 2025 and even beyond.

All the Civil Engineers of developing India should be aware of the potential of Smart Growth as they can contribute a lot during Infrastructure Planning which can accommodate higher densities. Very often limited infrastructure capacity is curbing the high density development leading to smart growth like the width of the road, capacity of the water supply system etc.

Reference:

1. WWF 'The Living Planet Report 2001'
2. UNCHS, 'The State of World Cities 2001'
3. Working Paper w 7503, The National Bureau of Economic Research.
4. SEEA Hand Book, 2001
5. Local Government Commission and US Environmental Protection Agency, 'Creating Great Neighborhoods, Density in your Community' September 2003