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## Urban Rural Linkages – Innovations for Sustainable Development

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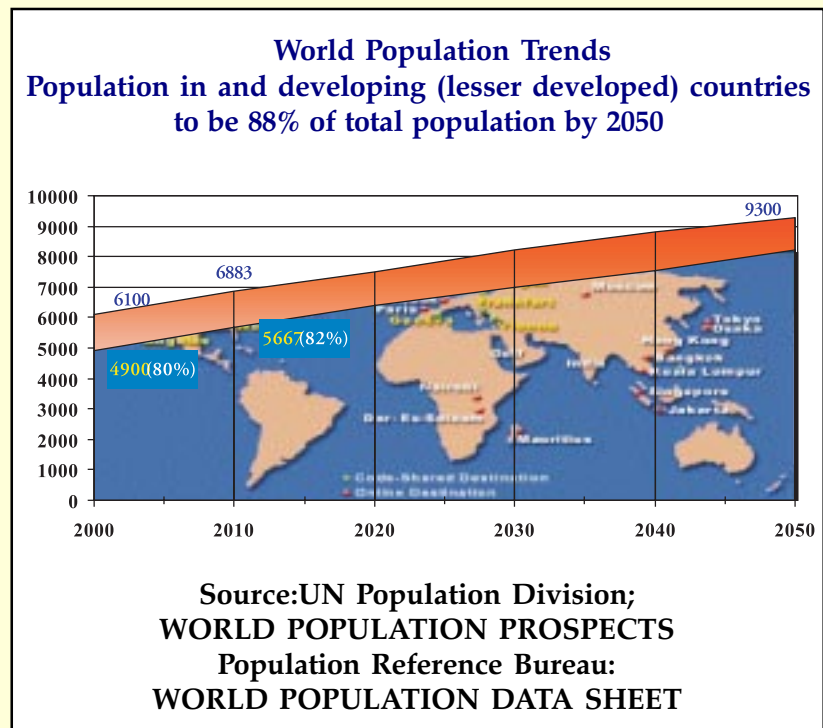
It is a well recognized fact that urbanization all over the world is on the rise. As we move into the 21<sup>st</sup> Century, there is a growing recognition that urban and rural development must be closely linked. Further that there exists an economic, social and environmental interdependence between urban and rural areas and a need for balanced and mutually supportive approach to development of the two areas. The discrete consideration of rural development as completely distinct from urban development is therefore no longer valid. A new approach, contemporaneously referred to as the “rural-urban linkage development perspective” has become the more accepted approach. Rural-urban linkages generally refer to the growing flow of public and private capital, people and goods between urban and rural areas. It is important to add to these, the flow of ideas, the flow of information and the flow of diffusion of innovation. Adequate infrastructure such as transportation, communication, energy and basic services is the backbone of this urban-rural development linkage approach. There is also a positive relationship between adequacy of infrastructure, ease of mobility and access to employment and enhancement of income. Adequate investments in infrastructure also improves rural productivity, allows access to markets, jobs and public service by both men and women.

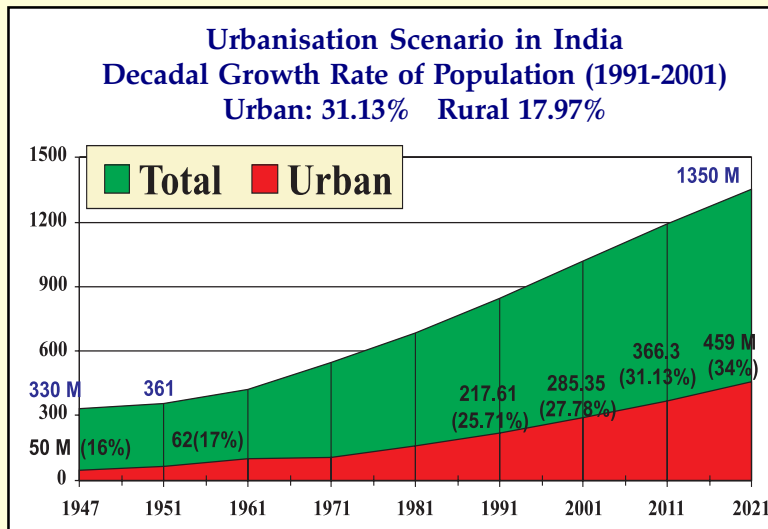
The following essay begins from where most end on the issue. After understanding changes in the global population and highlighting some proven successful examples of some innovative and sustainable rural-urban linkages from different parts of the World, some innovative interventions have been identified and suggested. We are all aware, that there is no one successful model or short-cuts for achieving sustainable development with emphasis on urban rural linkages, however, some of the key areas of concern are highlighted in the following essay.

### 1.0 The Urbanizing World – Some Facts

#### 1.1 Background

The 20<sup>th</sup> Century has witnessed rapid increase in world population as well as the biggest exodus of human population from rural to urban areas. The 20<sup>th</sup> Century began with a population of 2 billion which increased to 6 billion by the end of the Century. The global urbanization level increased from 10% to 50% during the century. The trend is more significant during the last decade or so. Around 600 million were added to the world’s urban population between 1990-2000. Close to 3 million people are added in Asia alone every month i.e. equivalent to one new city a month. Further, of the 21 mega cities (population 10 million plus) in the world today, 17 are estimated to be in developing countries. (Source: UN population Division, world population data sheet)





Some of the reasons for this large scale exodus from rural to urban can be grouped into the following broad heads:

- War and conflict
- Employment/enhancement in income
- Better infrastructure
- Major Political and economic changes
- Better living conditions
- Opportunities
- Decline of natural resources in rural areas
- Poor urban rural linkages

## 1.2 Implications of Urbanization

Considering the velocity and extent of urbanization in the world today has resulted in putting large pressure on the Urban Infrastructure. Apart, slums in the urban areas have come up with poor living conditions.

The development of urban-rural linkages has been envisaged as an option to ease the pressure on urban infrastructure and improving the living conditions. There is a growing recognition that urban and rural development must be closely linked – that we can no longer live in a world where different departments in national and local government continue to deal with urban and rural matters as separate entities.

The International Development Agenda of UN-HABITAT has increasingly recognized the potency of the urban-rural linkage development approach to sustainable development. The Habitat Agenda also clearly makes the case for economic, social

and environmental interdependence and for the need for balanced and mutually supportive development between rural and urban areas

## 1.3 Urban Rural Links

It may also seem obvious that the links between urban and rural depend on the infrastructure connecting them, or that sustainable economic, social and environmental development is hinged to a large degree on the interdependence between urban and rural areas.

But in many countries, this is not necessarily the case when it comes to policy. There have been two dominant themes on the rural-urban divide — an anti-urban view, and a pro-urban view. The anti-urban view bemoans the perceived disappearance of rural life. The pro-urban view sees urbanization as a progressive driving force for positive change.

To understand this, one just has to look at the circumstances of an ordinary family living in poverty anywhere in the world. Today: some work in town, others in the countryside. Transport costs are a major factor in their meager budgets. They depend on services and markets in town, which in turn depends on the rural economy. They live in a web of connections that stretches across villages, small towns, big cities and the semi-urban areas on their outskirts. It is a web of urban-rural connections. But it has tentacles that reach far downstream in the form of polluted rivers that pass through densely populated areas, smoke plumes from cars and unregulated industrial plants that defile the air we breathe, or trunk roads prone to high accident rates. In short, it can be an unhealthy web, and it is worse where governance is poor, especially at the local level.

## 2.0 Successful Examples of Sustainable Rural-Urban Linkages from the World

It is recognized that a number of projects undertaken in the recent past in various countries and regions are increasingly adopting the urban-rural linkage development strategy for achieving faster development in relatively under-developed areas. Some of the successful examples are highlighted below.

## 2.1 China

Since reform and opening up to the outside world in 1978, China has made great progress in the integrated development of its urban and rural areas. The Chinese Government has adopted four measures to create job opportunities for surplus rural labour and poverty alleviation.

- a. Development of township enterprises vigorously
- b. Transferring of rural population to cities and towns in an organized way.
- c. Increase in comparative income from agriculture through the expansion of market demand for farm produce;
- d. Encouragement of Partnerships for poverty reduction.

The living environment in rural areas has been improved and functions of villages and small towns in the countryside have been updated. A great number of small-scale facilities for science and technology, education, culture, sanitation and sports activities were constructed. At present, development programmes in the rural regions, such as those for power grid upgrading funded by the Central Government, village-to-village road connection, and school re-construction are underway. Transportation water supply, garbage disposal and public services are being planned and integrated between the urban and rural areas in some coastal areas. Moreover, the study of a unified social security system is also underway.

However, with insufficient land for a large population, Chinese Government has adopted guidelines and principles for integrated development between urban and rural areas as well as regions in order to ensure a balanced development and promote common prosperity.

## 2.2 Indonesia

After the Asian financial crisis of 1997 when Indonesia experienced a near collapse of the formal sector and a dramatic increase in both urban and rural poverty, the designers of a programme called KPEL postulated that the situation could be alleviated through prudent infrastructure and human resource investments to support the dynamics of rural-urban trade. The idea was to identify market opportunities for rural products

and then link those producers with urban and international market opportunities. KPEL therefore broadened the “traditional” rural-urban linkage approach to one focused on the building of partnerships – to mobilize and link together associations of producers with suppliers through participatory planning and management processes. It showed that all parties could gain from improved trade relations. The project designed, tested and institutionalized a 12-step approach to help of Indonesian institutions at the local and regional levels to form partnerships in local economic development. This in turn is supported at the national level to sustain and connect the local-regional partnerships to national and international opportunities.

## 2.3 Cambodia

The kingdom of Cambodia has experienced a massive migration of people from rural to urban areas for better employment opportunities. The capital city, Phnom Penh, has a population ten times the size of the next largest urban area. Because of this, Phnom Penh is experiencing widespread growth in slum and squatter settlements. In 2003, there were 569 squatter settlements with more than 62,000 households. Thirty Five percent of the city’s population now lives in such settlements.

The linkage has been done by adopting ‘regional linkages’ between various provinces for strengthening and creating industrial employment opportunities. A more balanced network of towns is what Cambodia is looking for at the moment.

## 2.4 Argentina

In the Argentina provinces of Jujuy, Misiones, Buenos Aires and San Juan, so many young people were migrating way to urban centres that small communities saw their populations ageing prematurely. In an innovative attempt to improve urban-rural links, a programme called NET was introduced to help train and educate young people in helping develop and boost the economies of their local districts. Successful proposals are given seed funding after proving that they will be financially sustainable in the long run. The aims are to establish youth networks, build the capacity to plan and manage development projects, encourage communications between young

people and their communities, and develop a regional information system. Nearly 300 networks of young people have joined the programme in the three provinces, and close to 6,000 have been directly involved in various programmes that range from health education to social and cultural programmes. Some 34 municipalities have collaborated and helped sustain the programme.

### 3.0 Promoting positive rural-urban linkages for sustainable development

The above trends need to be enhanced and promoted in a wider range of countries among national, regional and local development actors. Some of the common features from the above successful programme relate to:

- a. Policy
- b. Institutionalizing approaches through local/international agencies
- c. fostering partnerships/collaboration
- d. Infrastructure
- e. Trade Relations
- f. Information Systems
- g. Stress on Peri-Urban Areas
- h. Operational partnerships at city level
- i. Towards local empowerment
- j. Decentralisation

All these trends basically promote positive rural-urban linkages for sustainable development which can also generate substantial employment thus eradicating poverty. A balanced and mutually supportive development between rural and urban areas is needed. Further by providing adequate infrastructure such as transport, communication, energy and other basic services mobility problems between rural and urban areas can be eased out and access to markets, employment and other income earning opportunities are enhanced.

### 4.0 Some Innovations for Sustainable Development of Urban Rural Linkages

#### 4.1 Creation of a Rural Urban Fringe

A vision to create a rural urban fringe (peri-urban interface) that is attractive, accessible, diverse and multifunctional. It should serve the needs of both urban and rural community, strengthens the links between towns and country, and contributes fully towards sustainable development.

Urban-rural linkages are particularly intense in the peri-urban interface, characterised by constant flux, complex social structures, fragmented institutions and shifting locus. Different policy solutions are clearly needed for peri-urban areas to those advanced for rural or urban areas. The peri-urban poor depend to a greater extent on access to natural resources than do wealthier, urban-based groups. Consequently, the peri-urban poor are adversely affected when these resources are lost or degraded by: influxes of people from expanding urban areas; and solid waste disposal and untreated liquid waste from residential and industrial areas.

Active support to poorer and more vulnerable groups and a search for environmental sustainability demand creative management of the problems and opportunities arising from the meeting of urban and rural activities. Land use policies that help to enhance livelihoods and promote a better use of scarce resources and urban waste are crucial. Equally important are appropriate policies concerning basic infrastructure, training, information and improved governance for the peri-urban interface.

#### 4.2 Increasing Trade/Markets Between Urban Rural

Productive Rural Areas need to establish long-term, stable market links with nearby towns and cities. **Community Supported Agriculture (CSA)** is a simple example. In this case, a farm offers its customers a chance to purchase a subscription share that runs through the growing season. Deliveries are made, typically weekly, either to a center location or subscribers' homes, with an assortment of that week's produce. This arrangement allows farmers to get very strong prices for their produce on a predictable basis, and allows subscribers to get to know the farmers and the land responsible for their food.

**Farmer's markets**, which are extremely popular in California, Oregon, and Washington, offer important market linkages, allowing farmers, beekeepers, bakers, and many others to sell their wares at good prices. Pike's Place Market in Seattle adds a vibrant fishmarket to the mix, along with a range of local crafts. Many farms offer visiting opportunities, with roadside stands or you-pick

arrangements.

In recent years, many **restaurants specializing in regional, seasonal, and organic ingredients** have sprung up. Chefs Collaborative is promoting this approach to fine cuisine across the United States. Members of the Collaborative like Greg Higgins of Higgins Restaurant in Portland and Alice Waters of Chez Panisse in Berkeley seek out regional specialties at their peak taste, purchasing from the same suppliers year after year.

#### 4.3 Promoting small Towns

To promote rural-urban linkages by developing and strengthening a system of intermediate size secondary and tertiary towns to stimulate rural development, as well as to minimize the negative impacts of rural-urban migration need to be the agenda of the day.

New policy should take into account that people in both urban and rural areas deserve the benefits of an increased and sustainable urbanization process. This would require allocating more resources to the urbanization of rural areas, providing services, infrastructure, better governance and employment opportunities for rural populations. This should be supported with adequate policy and legal instruments to attract resources, or at least retain labour and revenues in small towns.

This policy towards more balanced urban-rural urbanization, going against established patterns may not be easy. But it can help break the present vicious cycle of increasing rural poverty and slum proliferation, and show the way forward to countries trying to solve the urban slum problem in an integrated way while supporting rural areas.

To implement this alternative, policy makers need to work on two fronts:

- a. a national urban and regional policy is required with the backing of government and partners, and
- b. Local communities must be engaged and motivated to improve the social, economic and environmental conditions.

A project undertaken in the north of **Mozambique** showed a social and productive pattern organized

around villages, and these villages organized under a settlement system with clearly delimited boundaries and a locally recognized administrative structure. The tenure pattern is at community level rather than on an individual basis. Rural settlement chiefs have recognized dispute resolution systems.

#### 4.4 Tourism to Bridge the rural-urban divide

Eco tourism is fairly recent. Sustainable Northwest's Healthy Forests Healthy Communities Partnership is working to build rural economies based on forest restoration and ecosystem management. The Partnership is creating new markets for the small diameter suppressed trees and underutilized species harvested in restoration operations, producing flooring, furniture, crafts, fixtures, and other products, thereby creating jobs in communities adjacent to degraded forests. Rural-Urban Linkages like these make an important contribution to Local Economies.

Tourism is an important income earner for cities and their hinterlands, particularly those that are branded by their historical or cultural heritage like Cairo, Cape Town, Paris, Rome etc. In eastern Germany the old industrial cities like Bitterfeld are on conference itineraries. Bitterfeld is one of the most polluted areas in the world, having been the centre for chemical industries and surface coal mining for well over a century. The mitigation measures being put in place are quite interesting to professionals, in particular. This kind of tourism can be generalized to the origination of appropriate visits for professionals attending conferences on technical subjects in many fields.

The idea of visiting slums and housing estates is also gaining currency. Some cities have developed well organized township tours laid in Cape Town and Johannesburg, South Africa, and tours of the Favelas of Rio in Brazil. Many tourists visit Trench Town, a slum of Kingston, Jamaica, because of its association with the origins of Reggae Music. This is tourism with a difference, but an interesting difference. It can stimulate investment in infrastructure, most of which helps improve the living conditions of local people as well as being of interest and benefit to the visitors themselves.

Well-managed tourism can certainly help

strengthen the positive links between urban and rural areas.

#### 4.5 Urbanization of the rural areas

Cities production and consumption patterns have a wide impact on their surrounding environments. The “ecological footprint” of cities extends over wide areas, not just those immediately affected by pollution and generated waste, but also to the areas which supply them with food, fuel and new residents.

The overall effect is to create less a divide than a rural–urban continuum, along which each different locality finds a place. Prospects for sustainable development depend on the dynamics of the relationship between locations at different points on the continuum, and the effects of policy and market decisions on the relationship. The pull of the cities with their opportunities for employment and other personal advancement is reinforced by a push out of declining rural areas. Both are influenced by creating urban-type opportunities in rural areas, or decisions affecting a wide variety of transfers of goods, services, associations, communications and other exchanges.

Expanding urban markets generate demand for rural products, including raw and processed agricultural products, crafts and other manufactures. This demand invigorates rural regional centres and small cities as collection and distribution points. This can spur improvement in rural economies which generate demand and expand local markets, initially for locally-produced non-farm goods and services, then increasingly for other domestic and for imported products.

#### 4.6 Recycling the Nutrition Cycle

Fast-growing cities in sub-Saharan Africa challenge rural food production. Consumption-related waste, however, ends up in urban latrines, drains or landfills, transforming cities into vast nutrient sinks. Composting this waste for agriculture could bring ‘rural’ nutrients back to the farmer. The potential for recycling nutrients from organic city waste for use in agriculture is great. Estimates for Bangkok, Thailand, and Kumasi, Ghana, show that up to only 10 percent of the major plant nutrients entering the city is currently being reclaimed. The

recycling of nutrients from urban areas and their channeling into rural agriculture would reduce on-farm soil nutrient mining and land degradation and enhance the life span of urban landfills. Although this is a win-win scenario for municipalities and farmers, there are still few success stories and negligible impact on a larger scale.

Most compost stations have encountered numerous technical, institutional and marketing problems. Often the products are too costly, even for most commercial farmers. Thus, successful compost planning involves not only technical, but also social and economic considerations,

### 5.0 The Way Forward

The above suggestions have a role for all to play, whether it is the Government, Local Bodies, communities, people or international agencies. The efforts of all need to be integrated since no one Government or institution or a community can successfully innovative these linkages for sustainable development in the urban-rural landscape. Innovations have made our lives safer, more pleasant and more varied in many different ways.

To insist that cities must solve their own problems, while rural areas should be assisted to achieve the very life that can only be provided to them by well-functioning cities, is wrong-headed. This would leave cities to fester and stew while the countryside continues to wait in vain for economic salvation.

A whole country will benefit when the urban-rural linkages thrive.

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## SENSEX- The Barometer of Indian Capital Markets

- by John Sunil Soren, Deputy Manager, NHB  
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The Bombay Stock Exchange (BSE) was founded in 1875 when 318 persons became members by paying a princely amount of Re.1. BSE in its 128 years history has become the premier stock exchange in India and has pioneered the stock broking activity in India.

Since then, the country's capital markets have passed through both good and bad periods. Till the decade of eighties, there was no scale to measure the ups and downs in the Indian stock market. The Stock Exchange, Mumbai (BSE) in 1986 came out with a stock index that subsequently became the barometer of the Indian stock market.

Due to its wide acceptance amongst the Indian investors; SENSEX is regarded to be the pulse of the Indian stock market. As the oldest index in the country, it provides the time series data over a fairly long period of time (From 1979 onwards). The SENSEX captures all the events in the most judicial manner. One can identify the booms and busts of the Indian stock market through SENSEX.

The Index was initially calculated based on the "Full Market Capitalization" methodology but was shifted to the free-float methodology with effect from September 1, 2003. The "Free-float Market Capitalization" methodology of index construction is regarded as an industry best practice globally. All major index providers like MSCI, FTSE, STOXX, S&P and Dow Jones use the free-float methodology.

Share holdings held by investors that would not, in the normal course come into the open market for trading are treated as 'Controlling/ Strategic Holdings' and hence not included in free-float. In specific, the following categories of holding are generally excluded from the definition of free-float:

- Holdings by founders/directors/ acquirers which has control element
- Holdings by persons/ bodies with "Controlling Interest"
- Government holding as promoter/acquirer
- Holdings through the FDI Route

- Strategic stakes by private corporate bodies/ individuals
- Equity held by associate/group companies (cross-holdings)
- Equity held by Employee Welfare Trusts
- Locked-in shares and shares which would not be sold in the open market in normal course.

As per this methodology, the level of index at any point of time reflects the Free-float market value of 30 component stocks relative to a base period. The market capitalization of a company is determined by multiplying the price of its stock by the number of shares issued by the company. This market capitalization is further multiplied by the free-float factor to determine the free-float market capitalization.

BSE has designed a Free-float format, which is filled and submitted by all index companies on a quarterly basis with the Exchange. The Exchange determines the Free-float factor for each company based on the detailed information submitted by the companies in the prescribed format. Free-float factor is a multiple with which the total market capitalization of a company is adjusted to arrive at the Free-float market capitalization. Once the Free-float of a company is determined, it is rounded-off to the higher multiple of 5 and each company is categorized into one of the 20 bands. A Free-float factor of say 0.55 means that only 55% of the market capitalization of the company will be considered for index calculation.

The base period of SENSEX is 1978-79 and the base value is 100 index points. This is often indicated by the notation 1978-79=100. The calculation of SENSEX involves dividing the Free-float market capitalization of 30 companies in the Index by a number called the Index Divisor. The Divisor is the only link to the original base period value of the SENSEX. It keeps the Index comparable over time and is the adjustment point for all Index adjustments arising out of corporate actions, replacement of scrips etc. During market hours,



prices of the index scrips, at which latest trades are executed, are used by the trading system to calculate SENSEX every 15 seconds and disseminated in real time.

One of the important aspects of maintaining continuity with the past is to update the base year average. The base year value adjustment ensures that replacement of stocks in Index, additional issue of capital and other corporate announcements like 'rights issue' etc. do not destroy the historical value of the index. The beauty of maintenance lies in the fact that adjustments for corporate actions in the Index should not per se affect the index values.

The closing SENSEX on any trading day is computed taking the weighted average of all the trades on SENSEX constituents in the last 30 minutes of trading session. If a SENSEX constituent has not traded in the last 30 minutes, the last traded price is taken for computation of the Index closure. If a SENSEX constituent has not traded at all in a day, then its last day's closing price is taken for computation of Index closure. The use of Index Closure Algorithm prevents any intentional manipulation of the closing index value.

The scrip selection and review policy for BSE Indices is based on the objective of improvement, transparency and simplicity. The qualitative criteria's for selection of constituent scrips in SENSEX include size of its market capitalization, trading frequency, representative of the industry, acceptable track record etc.

The Index Committee meets every quarter to review all BSE indices. However, every review meeting need not necessarily result in a change in the index constituents. In case of a revision in the Index constituents, the announcement of the incoming and outgoing scrips is made six weeks in advance of the actual implementation of the revision of the Index.

#### *Use of Market Index as investment tool*

Since, an Index is a very good indicator of the direction the market is taking, it is now being widely used by retail as well as institutional investors in arriving at investment decisions. The mutual fund industry is leveraging market indices

quite effectively in the form of index funds. Index funds invest in a basket of predefined stocks of an index (like the BSE Sensex or S&P CNX Nifty) in an allocation that resembles that of the benchmark index. By definition, index funds track a particular market index by purchasing all the stocks of that index in same proportions as they are in present in the index. This ensures a performance identical to that of the index they track.

That is why index funds are also referred to as passively managed funds. This is different from how actively managed funds function; they also have a benchmark index but make active stock and sector calls in their bid to outperform the index. This is the primary difference between passive funds and active funds; one is content at giving index-linked returns, while the other consciously tries to outperform it. One variant of the 'Index Fund' is the index plus fund wherein a very high portion (*usually 75% to 80%*) of the assets is invested into a particular index and the balance is actively managed.

Almost all the major asset management companies active in the Indian capital markets have launched index funds linked to the SENSEX.

Index funds can be managed by a much smaller staff than an actively managed fund. Computers do most of the work, so there is no need to hire an expensive fund manager or research analysts. Hence, they are considered a cost-effective investment alternatively to actively managed diversified equity funds for their ability to provide index-linked returns at a lower cost.

While investing in an 'Index Fund', a very important factor is the fund's tracking error. Tracking error measures how much an index fund's returns deviate from the benchmark index's return over any given period of time. The lower the tracking error, the better the fund is at keeping pace with its index. A poorly run index fund will generally have a large tracking error.

#### *Source:*

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## शहरीकरण एवं पर्यावरण

रंजन कुमार, प्रबंधक, एन एच बी

बड़े शहरों में पर्यावरण आज एक भयंकर समस्या बन गई है जिस कारण वहां के निवासी भिन्न-भिन्न प्रकार की बीमारियों से ग्रस्त होते हैं। बच्चों में विशेषकर श्वास बीमारी के लक्षण पाए जाते हैं। पर्यावरण प्रदूषण, प्राकृतिक सम्पदाओं के अत्यधिक दोहन आदि के समान कुछ अन्य पर्यावरणीय समस्याएं भी हैं जो आज के मानव को घेरे हुए हैं जैसे शहरीकरण तथा जनसंख्या विस्फोट की समस्याएं।

पिछले कुछ वर्षों में औद्योगीकरण के फलस्वरूप शहरीकरण में भी वृद्धि हुई है। लोग काम की तलाश में या शहरों की चमक-दमक से आकर्षित होकर आसपास के गांवों को छोड़कर निकट के शहरों में जा बसते हैं तथा शहरी पर्यावरण की समस्याओं के भागीदार बनते हैं। ये समस्याएं शहरों के इतिहास तथा अति तीव्र वृद्धि के फलस्वरूप शहरी ढांचे में चरमराकर टूटने से संबंध रखती है। पैदल यात्रियों की जरूरत पूर्ति के समक्ष कोई शहर जल्दी से मोटर वाहनों के काफिले समायोजित करने में सफल नहीं हो सकता।

50,000 लोगों की आवास व्यवस्था की दृष्टि से, एक परिगत क्षेत्र में नियोजित शहर खींचतान द्वारा पहले ढांचे को जबर्दस्त नुकसान पहुंचाए बिना पांच गुना से अधिक आबादी को समायोजित नहीं कर सकता है। यही कारण है कि संसार के अधिकांश महानगरों में अव्यवस्था-सी फैली हुई है। लंदन व पेरिस के ऐतिहासिक सौंदर्य स्थल कुकुरमुत्तों की तरह उग आई इमारतों से ढके हुए हैं। विश्व के महानगरों की स्थिति को संयुक्त राष्ट्र संधि की वर्ष 1969 की रिपोर्ट में चित्रित किया गया है। महासचिव ने इस पर अपने विचार व्यक्त करते हुए कहा “हाल के दशकों में

जनसंख्या वृद्धि के साथ-साथ शहरीकरण भी तीव्र हुआ है। संसार में 80 प्रतिशत लोग शहरी क्षेत्रों में निवास करते हैं। अगर यही प्रवृत्ति जारी रही तो लगभग अर्धशतक की अवधि में शहरीकरण अपनी चरम सीमा पर पहुंच जाएगा तथा अधिकांश लोग कस्बों व शहरों में रहने लगेंगे। विकासशील देशों में शहरीकरण की दर और भी तीव्र है।”

अमरीका से इतर देशों में 1920 में शहरी आबादी एक करोड़ थी जो 2000 में बढ़कर 20 गुणा हो गई। विकसित देशों में शहरी आबादी में चार गुणा वृद्धि हुई। सिद्धान्ततः शहरीकरण से पर्यावरण को कोई हानि नहीं पहुंचती है। समुचित नियोजन तथा नियंत्रण के साथ अगर इनकी वृद्धि कुछ मंद गति से हो तो शहरीकरण से पर्यावरण की गुणता में गिरावट के स्थान पर अतिवृद्धि होती है क्योंकि इससे ग्रामीण भूमि पर जनसंख्या का दबाव घटता है, तरह-तरह के साजसामान तथा नौकरी के अधिक अवसर मिलते हैं, नए तथा आकर्षक आवास स्थान तथा जीवन जीने का ढंग मिलता है। तथापि अधिकांश क्षेत्रों में, सरकारें न तो इसकी पूर्व तैयारी करती हैं और न ही शहरी क्षेत्रों में इस प्रकार के थोक अतिगमन के साथ सामंजस्य ही स्थापित कर पाती है।

बड़े शहरों में अत्यधिक जर्जर प्रकृति की झुग्गी पट्टियां कभी-कभी ग्रामीण क्षेत्रों में अधिक सम्मान तथा अच्छे स्वास्थ्य के साथ रहने वालों के पर्यावरण बन जाते हैं। शहरी क्षेत्रों में जल, वायु तथा भूमि प्रदूषण की अतिवृद्धि ऐसी विश्वव्यापी समस्या बन गई है जिससे मानव स्वास्थ्य को खतरा है। औषधि विज्ञान में हुई प्रगति के बावजूद विकासशील देशों में शहरी जीवन से संबंधित बीमारियों में अतिवृद्धि हुई



है। शहरी क्षेत्रों का शोणित तथा भीड़भाड़ शारीरिक तथा मानसिक बीमारियों को बढ़ाने में सहायक होता है।

अधिकांश विकासशील देशों में शहरी नियोजन तथा प्रारूप अग्रिम रूप में प्रदान करना बहुत कम ही संभव हो पाया है। शहरों की ओर गम अधिकतर आंखों के रोहे की बीमारी, टीवी, परजीवी रोग तथा चर्म रोगों की वृद्धि का कारण बना है। लोगों का अन्तर्वाह अपने साथ जलप्रदायों तथा अपशिष्ट समापन व्यवस्थाओं पर ज्यादा दबाव लाता है तथा अनेक प्रवाहिका संबंधी बीमारियों का कारण बनता है। कुपोषण होना असामान्य बात नहीं है तथा उसके साथ-साथ अंतर्दियों का संक्रमण इन अस्वच्छ परिस्थितियों में जन्मे तथा पले नवजात शिशुओं की मृत्यु का एक सामान्य कारण है। रिहायशी स्थलों तथा अन्य स्थानों की घनी आबादी सामान्य बात है। जलप्रदाय तथा अपशिष्ट पदार्थों के निपटान की समुचित व्यवस्था नहीं होती है। इन कारणों से रोगों की वृद्धि होती है।

सामाजिक परिवर्तनों से समाज की पारिवारिक तथा अन्य प्राथमिक संस्थाएं टूटने लगती हैं। तेजी से होने वाले परिवर्तनों से उत्पन्न दबाव मानसिक तनाव तथा सुरक्षा की भावना को जन्म देते हैं। इनकी अतिव्यक्ति टूटन, मनोविकारों, आत्मघात के प्रयासों, अपराधों की संख्या में बढ़ोतरी तथा अन्य असामाजिक व्यवहारों में होती है। तीव्र गति से होने वाले शहरीकरण से सभी प्रकार की जन सेवाओं जिसमें परिवहन तथा शिक्षा भी सम्मिलित है, पर अत्यधिक भार पड़ता है। स्कूलों में भारी भीड़भाड़ हो जाती है। परिणामतः उपस्थिति में गिरावट आती है तथा बाल उपचार बहुत ही सामान्य हो जाता है। कुछ विकासशील देशों में इस समस्या का परिणाम इतना विस्तृत है कि उसके सुलझने की कोई आशा तब तक नहीं है जब तक कि वृहद राष्ट्रीय एवं अन्तरराष्ट्रीय स्तर पर प्रयास नहीं होते हैं।

**नगरीय प्रतिरूप-** महानगरों के विकास का इतिहास बताता है कि अधिकतर शहर तथा कस्बे थोड़े समय में पूर्व नियोजन या नियंत्रण के साथ विकसित हुए हैं। इनमें थोड़ी बहुत व्यवस्था के प्रयास शहरों के विभिन्न क्षेत्रों में जोन निर्माण तक ही सीमित रहे हैं जैसे कि औद्योगिक क्षेत्र जहां लोग विभिन्न उपभोक्ता सामग्री उत्पादित करते हैं; व्यावसायिक क्षेत्र जहां लोग क्रय-विक्रय करते हैं या कार्यालयों में कार्य करते हैं। रिहायशी क्षेत्रों को एक परिवार वाले पृथक-पृथक घरों वाले क्षेत्र तथा अनेक परिवारों के एक ही बहुमंजिले भवनों में या सघन भवन व्यवस्था वाले क्षेत्रों में बांटा जा सकता है।

**नगरीय समस्याएं-** नगरों की वैसे तो अनेक समस्याएं होती हैं पर इनमें दो प्रमुख हैं- पहली खुले क्षेत्रों की कमी तथा दूसरी परिवहन की समस्या।

**खुले क्षेत्रों की कमी-** शहरों में तीव्रगति से हो रहे औद्योगीकरण तथा बढ़ रही आबादी की आवश्यकतानुसार मकानों, व्यापारिक संस्थानों तथा सड़कों आदि के कारण खुले स्थान लुप्त होते जा रहे हैं। महानगरों में तो खेलकूद के मैदान एवं अन्य मनोरंजन स्थल प्रत्येक व्यक्ति की पहुंच से बहुत दूर होते जा रहे हैं। यह समस्या तभी हल हो सकती है जब शहर नियोजन प्राधिकारी विभिन्न योजनाओं के निर्माण के समय शहरों के बीच जगह-जगह खुले क्षेत्रों की उपयोगिता तथा आवश्यकता को प्राथमिकता दें।

**परिवहन की समस्या-** पहले शहर छोटे होने के कारण वाहनों की आवश्यकता अनुभव नहीं होती थी। परन्तु शहरों का विस्तार होने से ट्रामों तथा अन्य परिवहन साधनों की आवश्यकता अनुभव होने लगी। वाहनों की बढ़ती संख्या के कारण ट्रैफिक जाम, यातायात दुर्घटनाएं, वायु तथा शोर प्रदूषण आदि की समस्याएं बढ़ती गईं। शहरों में जनसंख्या

वृद्धि के साथ-साथ व्यापार एवं औद्योगिक गतिविधियों का केन्द्रीकरण भी है। मुम्बई की परिवहन व्यवस्था देश में सबसे अच्छी है इसमें कोई शक नहीं। यहां भी जनसंख्या वृद्धि के साथ-साथ व शहरी विस्तार के कारण आवागमन दिन व दिन कठिन होता जा रहा है। यहां की उपनगरीय रेलगाड़ियों में प्रतिदिन लगभग 40 लाख लोग सफर करते हैं। कार्यालयीन समय में प्रत्येक रेलगाड़ी में जिसकी अधिकतम यात्री क्षमता 2600 सवारियों की है उसमें रोज 4000 व्यक्ति तक सफर करते हैं।

मुम्बई की तुलना में दिल्ली, कोलकाता, अहमदाबाद, कानपुर जैसे शहरों में यातायात व्यवस्था की दशा बहुत अधिक शोचनीय है। इससे यातायात व्यवस्था की स्थिति का अनुमान सहज ही लगाया जा सकता है।

नगरों की कुछ अन्य समस्याएं निम्नानुसार हैं-

1. जनसंख्या की सघनता- समय के साथ नगरों का आकार बढ़ता जाता है और वहां आबादी की सघनता एक समस्या बन जाती है। लोगों को छोटे-छोटे मकानों में जीवनयापन करने के लिए बाध्य होना पड़ता है। भारत के कुछ नगरों में जनसंख्या की सघनता संसार के प्रमुख महानगरों से भी अधिक है। मुम्बई में यह सघनता 20,000 मनुष्य प्रति वर्ग किमी से अधिक है, जबकि संयुक्त राज्य अमरीका के न्यूयार्क शहर में केवल 10,000 मनुष्य प्रति वर्ग किमी तथा शिकागो में लगभग 6,500 मनुष्य प्रति वर्ग किमी है।
2. उत्पादित वस्तुएं मंहगी - नगरों में दूध, घी, शाक सब्जी, फल आदि दूर स्थानों से आते हैं। दुलाई व्यय एवं कर आदि के कारण मूल्य अधिक हो जाता है।
3. प्रदूषण समस्या- जल, वायु, भूमि तथा शोर प्रदूषण

की समस्याएं विकराल रूप धारण करती जा रही हैं।

4. विधमताएं- बड़े नगरों में सामाजिक तथा आर्थिक विधमताएं, मानसिक तनाव, मनोविकारों तथा वर्ग संघर्ष की उत्पत्ति का कारण बनती है।
5. गरीबी का प्रभाव- गरीबी दूर करने तथा रोजगार को बढ़ावा देने के विशेष कार्यक्रमों या अनुसूचित जाति/अनुसूचित जनजाति तथा महिलाओं को जो न्यूनतम जातिगत महत्व मिलना चाहिए बराबर दिया जा रहा है। इसके अलावा आवश्यक उपभोक्ता वस्तुओं की सस्ती दरों पर आपूर्ति में तेजी लाने के लिए सार्वजनिक वितरण प्रणाली वर्ष 1991-92 में 4 से 15 प्रतिशत के बीच गिरावट आई है।
6. पर्यावरण संकट- इसमें कोई संशय नहीं कि अगर जनसंख्या में इसी प्रकार की वृद्धि होती रही तो जल्दी ही पृथ्वी की धारण क्षमता से अधिक लोग हो जाएंगे और जब अभी इतनी अधिक गरीबी एवं भुखमरी है तब यह कैसे आशा की जा सकती है कि आर्थिक तथा कृषि विकास जनसंख्या विस्फोट में समन्वय रख पाएंगे। भूमि विनाश, प्राकृतिक साधनों का स्थूलन, व्यर्थ अपशिष्टों की उत्पत्ति तथा पृथ्वी का प्रदूषण आदि सभी पर्यावरण संकट जनसंख्या वृद्धि के साथ बढ़ेंगे।

एक चेतावनी के अनुसार यदि जनसंख्या इसी तरह बढ़ती रही तो अगले 700 से भी कम वर्षों में पृथ्वी के प्रत्येक वर्गफुट क्षेत्र में एक व्यक्ति होगा। स्पष्ट है एक वर्ग फुट की भूमि एक व्यक्ति को न तो पर्याप्त भोजन प्रदान कर सकती है और न ही कपड़े तथा आश्रय इस प्रकार यह संभव नहीं है कि जनसंख्या वर्तमान दर से अनन्तकाल तक बढ़ती रहेगी।

**नियंत्रण उपाय :**

- (1) उद्योगों का विकेन्द्रीकरण- महानगरों में जनसंख्या बढ़तेरी का मुख्य कारण उद्योगों की उपस्थिति के कारण लोगों का विभिन्न उद्देश्यों से वहां आ बसना ही है। उद्योगों का विकेन्द्रीकरण इस समस्या का समाधान में सहायक हो सकता है। अतः नए उद्योग महानगरों के स्थान पर ग्रामीण क्षेत्रों या छोटे नगरों में स्थापित किए जाने चाहिए।
- (2) योजनाबद्ध कालोनियों का निर्माण- औद्योगिक श्रमिकों के लिए कल-कारखानों से दूर नगर के बाहरी भागों में साफ सुथरी और स्वास्थ्यपूर्ण कालोनियां निर्मित की जानी चाहिए। नगरों के पुनर्निर्माण तथा योजनाबद्ध विकास द्वारा अनेक समस्याओं को दूर किया जा सकता है। योजना बनाकर बाहरी ओर से विस्तृत भागों में, चौड़ी सड़कों से युक्त तथा कम मजिलों वाले मकानों में बस्तियां बसाई जानी चाहिए।
- (3) मनोरंजन तथा स्वास्थ्य सेवाओं की सुविधाएं- नगरों में उद्योगों, खेलकूद के मैदानों तथा मनोरंजन स्थलों को समुचित प्राथमिकता दी जानी चाहिए। नगरों में परिवहन, स्वास्थ्य तथा नगरपालिका सुविधाओं की समुचित व्यवस्था होनी चाहिए। नगरों में विकास के साथ इन सुविधाओं की समुचित व्यवस्था होनी चाहिए। नगरों में विकास के साथ इन सुविधाओं में भी विस्तार किया जाना चाहिए।
- (4) सीएनजी का प्रयोग- प्रदूषण की समस्या को कम करने के लिए वाहनों में डीजल/पेट्रोल की जगह सीएनजी गैस का इस्तेमाल करना चाहिए। दिल्ली में सभी वाहनों को अनिवार्यतः सीएनजी चालित कर दिया गया है जिससे प्रदूषण की समस्या का बहुत
- (5) गांवों से नगरों की ओर पलायन- गांवों से शहरों की ओर पलायन का मुख्य कारण रोजगार की तलाश है। खेती वर्षा पर निर्भर होने के कारण अनिश्चितता बनी रहती है। ग्राम निवासियों को पूरे वर्ष रोजगार नहीं मिल पाता है। इस समस्या से निपटने के लिए गांवों में कुटीर उद्योगों का विकास करना चाहिए। अन्य बड़े उद्योग भी ग्रामीण क्षेत्रों में लगाए जा सकते हैं। जिससे गांव के लोगों का पलायन शहरों की ओर रूके।
- (6) उद्योगों से प्रदूषण- उद्योगों से निकलने वाले दूषित पदार्थों को शुद्ध करने के यंत्र लगाने चाहिए। अनेक उद्योगों से हानिकारक रसायन निकलते हैं जो नदियों में जाकर उनके पानी को भी दूषित करते हैं, रसायन मिश्रित होने के कारण पानी प्रयोग के लिए अनुपयुक्त हो जाता है।
- (7) मेडिकल वेस्ट- अस्पतालों आदि से भारी मात्रा में इस्तेमाल किया हुआ सामान बाहर फेंक दिया जाता है। इंजेक्शन की सुईयों व सिरिंज आदि का पुनः प्रयोग करना घातक सिद्ध होता है। कबाड़ बेचने वाले ऐसी सामग्री को पुनः बेच देते हैं। इस समस्या से निपटने के लिए आवश्यक है कि अस्पतालों में ही ऐसे यंत्र लगाए जाएं ताकि अस्पताल से निकलने वाली सामग्री का वही व्ययन कर दिया जाए।

अगर समय रहते कदम नहीं उठाए गए तो आने वाले समय में यह समस्या और भी गंभीर रूप धारण करने लगेगी एवं एक सुन्दर शहर का सपना हमेशा के लिए स्वप्न ही बनकर रह जाएगा।