Urban Development and Housing in India: Current Issues and Outlook

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ABSTRACT

Ancient Indian city planning is a rich tapestry of architectural splendors that continues to influence urban design and development today. The paper provides valuable insights of the gradual development of Indian cities and their planning, focusing on Five periods: ancient, classic, medieval, neo-classic, colonial and industrial. Contemporary urban planners can draw inspiration from sustainability, inclusivity, and adaptability principles embedded within India's rich historical heritage. By integrating traditional knowledge with modern technologies and design approaches, cities can achieve a balance between heritage preservation and future-oriented development.

India's housing crisis is a multifaceted issue requiring comprehensive solutions rooted in urban planning principles of ancient and modern city planning principals. Rapid urbanization, population growth, socio-economic disparities, and inadequate infrastructure have worsened the shortage of affordable housing. A comprehensive approach involving policy reforms, innovative design strategies, and sustainable development practices is needed. In 2001, India had a housing shortage of 19.40 million units, with 54 percent of the population living in slums. In 27 cities over one million population, 24.1 percent are slum dwellers. This paper explores Housing shortages, Urban slums and squatter settlements, Low and middle income housing needed, Indian housing process and efforts, obstacles in India's housing efforts and technological innovations.

In conclusion, addressing India's housing crisis and shaping its future cannot be solved in isolation from balanced economic development in villages, small towns, medium towns, regional centers, and prime cities in the country with emphasis on learning from the ancient city plannings and an integrated regional planning. This requires a holistic approach that integrates policy reforms, innovative design strategies, community engagement, affordable housing finance, and sustainable development practices. By prioritizing inclusivity, social equity, and environmental stewardship, India can build resilient, livable cities that meet the diverse housing needs of its growing urban population.

Keywords: Ancient city planning, Urban Planning, Housing, Urbanization, Regional urban development.

INTRODUCTION
1. History of City Building:

City development may be divided into six periods: ancient, classic, medieval, neo-classic, colonial and industrial and modern. There are overlaps or transitions years between periods. The development process of city planning is same as in other fields of discipline: Progressive thinking, Advancement in science and technology, social reforms, understanding of ecology, political processes, economics, and justice. City planning is an interdisciplinary field and hence very complex.

1.1 Ancient Cities:

Early civilizations flourished in the fertile river basins of the Nile, Tigris-Euphrates, Indus, and Hwang

Ho. The ancient cities of Ur, Harappa, Mohenjo-Daro, Thebes, Uaxactrun, Nippur, Uru, Heliopolis, Babylon, Jerusalem, Assur, and Nineveh originated around 5,000 years ago. Each town had a population of 25,000 or less residents. Dwellings were constructed using materials such as timber, reeds, or haphazardly arranged bricks. Every city included densely built residences that incorporated a central courtyard to facilitate light and ventilation.

The structures were constructed with shared boundary walls. Harappa only consisted of individual residences. During the early stages of human civilization, the leaders protected individuals and tamed animals, safeguarding them from both dangerous creatures and invading forces. As the leaders acquired authority, they promoted themselves to the position of sovereigns and monarchs. The monarchs frequently engaged in conflicts to assert dominance, acquire resources, and expand their domains. Over time, a series of incremental and significant innovations, driven by economic demands, military strategies, and social and political developments, have fundamentally reshaped civilization, architecture, and urban environments to their present condition.

1.2 Classic Cities:

During the Classical period, Athens gained prominence in the Sth Century B.C., leading to the development of stronger buildings, fortifications, and a civilization with markets, religious buildings, libraries, amphitheaters, museums, and opera halls. Architects designed ornate buildings with gardens, sculptures, fountains, and paintings, while the building material was stone. This trend continued in classical cities and medieval towns, with cities like Baghdad and Chinese cities built on cosmological considerations in the 6th century A.D. or earlier. Greek architect Hippodamus introduced the gridiron pattern of roads, which was simple to layout on land, organized, and easy to lay water, sewer, and electric lines. However, the gridiron pattern was monotonous, took up too much land, and slow down traffic movement. The Classical period ended with the dark-ages, with the Roman Empire crumbling due to luxury, ceremonies, and corruption.

The Classical Age in India, spanning from 320 to 550 CE, was a period of prosperity and urbanization, shaped by the Gupta Empire. The period saw significant advancements in housing, city development, and water management. Cities like Pataliputra and Ujjain were centers of trade, culture, and governance, with a central marketplace. Housing architecture varied based on socio-economic status, with wealthy individuals living in spacious homes made of durable materials. Water management and irrigation systems were crucial for sustaining urban populations. Public infrastructure, including temples and palaces, was impressive, and fortifications were built to protect against external threats. These architectural achievements laid the groundwork for future Indian history and continue to influence architectural and urban design.

1.3 Medieval Cities:

The medieval period (6th to 15th century) was characterized by warfare, strategic fortification, and the rise of churches and monasteries as refuges for the oppressed. Gothic buildings, plazas, and streets integrated with hilltop sites, while trade revival and guild formation occurred. Universities were founded in Bologna, Paris, Cambridge, and Salamanca in the 12th and 13th centuries respectively. In India universities at Nalanda and Taxila existed before this period. Cities grew in numbers within the confines of fortresses and therefore, were small in size and congested. There were no water supply and sewage systems. Drains were on the roadsides. Roads were made for pedestrians only

The Medieval era in Indian civilization, from the 5th to the 15th century, was marked by political fragmentation, cultural flourishing, religious diversity, architectural marvels, trade and commerce, and the caste system. The collapse of centralized empires led to the rise of regional kingdoms, such as the Cholas, Chalukyas, Pallavas, Rashtrakutas, and later the Delhi Sultanate and Vijayanagara Empire. Despite political fragmentation, cultural flourishing continued, with classical Sanskrit literature and regional languages like Tamil, Telugu, Kannada, and Bengali. Religious diversity and syncretism continued, with Hinduism being the dominant religion. Despite political fragmentation, trade and commerce flourished, with ports like Calicut and Surat becoming important centers of maritime trade.

1.4 Neo-Classic Cities:

Neo-classic cities emerged in the 14th century, fueled by wood-built ships and trade, leading to the growth of cities like London, Paris, Venice, and Florence. Monarchs sought monuments, and artists, sculptors, architects, and planners were in high demand. Renaissance and baroque cities continued to incorporate classical architecture, building monuments like St. Peter's Cathedral and Piazza di San Marco. Fortress walls were torn down for wide roads and unconfined spaces. The urban population grew, and sewers were installed in London.

The Silpasastra, a cosmological and practical city layout book, was developed in India in the first millennium B.C., but no city was built on its principles. Fatehpur-Sikr, built by Akbar in 1573 A.D., is considered the most splendid city. It exceeded London in population and grandeur, with buildings built to human scale without dwarfing or overpowering people. The city features spacious public halls, private palaces, pavilions, court-yards, mosques, libraries, and treasuries. Shaikh Salim Chisti's tomb features marble grills. However, due to water scarcity, the dream city was abandoned after 15 years.

1.5 Colonial and Industrial Cities:

Mariner's compass helped explorers discover the Americas and other continents during the 15th and 16th centuries. With the expansion of colonialism, new cities were built, including Havana, San Juan, St. Augustine, Boston, Manhattan, Williamsburg, Annapolis, Philadelphia, and Washington D.C. in America. In Russia, Czar Peter I, known as Peter the Great, decided to transfer the capital from Moscow to St. Petersburg, aiming for a modern, innovative city with a diverse employment base and settlement districts for each social class.

Jaipur, built around 1728, has silpasastra and European influence, with the Pink City featuring Hawa-Mahal, palace, gardens, and artificial lakes. Washington, D.C., was the most significant plan in the colonial period, designed by Major Pierre Charles L'Enfant, with diagonal streets overlaid on a gridiron pattern. New York developed as a trade center on Manhattan Island and was extended to the north with a gridiron street pattern and Central Park in 1800.

Industrial developments and industrial cities began in England in the 18th century, spreading to other countries and accelerating through the 19th and first half of the 20th century. The ill effects of industrial cities and need for better living conditions led to urban planning movements, philosophy, and legislations in the western world. Sanitary reform in Great Britain began with the Chadwick Report and the Miasma theory, which led to the Public Health Act of 1848 and urban planning initiatives such as sewerage, garbage collection, rodent control, and mosquito abatement.

2. Development of modern cities:

2.1 Development of New Towns as solutions to congestions and Urban Ills

The industrial revolution led to poor housing, sanitation, pollution, and urban sprawl. In the 20th century, England implemented planning interventions, including construction of alternate growth-poles, satellite towns, independent cities, and parallel or twin cities, marking the largest town building experiment in human history.

2.2 The Garder City Movement

The Garden City movement, inspired by Arturo Soria's linear city idea, was developed by Ebenezer Howard in 1898. The idea was to create towns designed for healthy living and industry, surrounded by a rural belt, with a density of 12 families per acre. Howard proposed that these cities should have sufficient employment to reduce journey-to-work and be located on cheap country land. The Garden City Association was formed in 1899, and the First Garden City, Limited, started Letchworth in 1903. Both cities were built with private capitals, connected to London by railroads and roads, and designed as small towns.

Howard's Garden Cities were criticized for their static and rejecting dynamic growth, as well as for being inefficient and wasteful of land. However, they stimulated many architects and planners worldwide, particularly in Britain, who sought better living conditions. After Howard's death in 1928, the Garden City Association, renamed the Town and Country Planning Association, continued to influence British town planning and regional planning.

2.3 Influence of the Garder City Movement

The garden city and greenbelt idea spread rapidly across countries, inspiring planners, architects, citizens, and politicians to think further. In the United States, architects like Clarence Stein, Henry Wright, and Lewis Mumford advocated for self-contained neighborhoods with a community center, schools, shopping, and other institutions. The first American garden city, Radburn, New Jersey, was designed in 1928 for 25,000 people, using cul-de-sac and green spaces. The Resettlement Administration in the U.S. created four cities inspired by Howard's Garden City ideas.

In India, the government has emphasized the construction of new towns for heavy industry and steel plants, such as Bhilai, Durgapur, and Rourkela. The Rurkela Plan, designed by Konrad Seiler, was designed for 100,000 people, with a gross density of 60 persons per ha.

3. Development of Modern Urban Planning

From the colonial and industrial eras to the present day, scientific and technological innovations, architectural and artistic movements, social reforms, the emergence of planning laws, urban growth management, ecological and environmental consciousness, a shift in planning emphasis, and the creation of new planning tools all contributed to the evolution of urban planning.

3.1 Influence of scientific and technological inventions

In the 18th, 19th, and 20th centuries, numerous scientific, technological, and social inventions influenced architecture, movement, and urban planning. These advancements enabled high population densities, making urban planning adaptable and continuous. As urban plans evolve, renewal becomes necessary to maintain desired urban character.

3.1.1 Movement of People and Goods

In 1814, George Stevenson invented the first steam engine railroad locomotive, leading to the invention of trains, airplanes, automobiles, and the automobile age. These advancements made cities more accessible, but also led to urban sprawl, posing challenges for planners and city authorities.

3.1.2 Mass Production of Steel

Sir Henry Bessemer's 1855 decarbonization process revolutionized steel production, leading to widespread use in bridge and skyscraper constructions. The first steel bridge was completed in 1779 in Shropshire, England. Steel cable suspension bridges revolutionized bridge construction, making bridges economical and urban centers accessible. Steel also became the skeleton for modern skyscrapers, with the Home Insurance Building in Chicago being the first. Today, all skyscrapers are built with steel skeletons.

3.1.3 Cement and Concrete

In 1824, Joseph Aspin invented portland cement, a durable mortar and plastering material. In 1849, Joseph Monir invented reinforced concrete, combining iron strength with concrete to withstand heavy loads. This material was used in railway ties, pipes, floors, arches, and bridges. Concrete's use in architecture and construction has been significant, with the first concrete road in Scotland in 1879, the first bridge in 1880, and the first church in 1894.

3.1.4 Method of Structural Calculations

Steel and concrete replaced stone in building and bridge construction. The first systematic test of tensile and compressive strength in 1836 led to precise structural calculations. Steel and concrete offered economy, slender columns, taller structures, more openness, and faster construction time, making skyscrapers a reality with scientific confidence.

3.1.5 Influence on Planning

Steel and concrete are lighter and stronger than stone, making building projects more economical and time-efficient. High-rise buildings increase urban density, necessitating wider roads, parking, public transportation, and urban services. However, these buildings also create challenges for transportation planners, utility companies, and city authorities.

3.2 Influence of art and architecture movements on planning

3.2.1 Impressionist Paintings

Impressionist paintings by Monet, Turner, Goya, Cezanne, Renoir, Gauguin, and van Gogh, from 1860,

portrayed a romantic, open-air, sunlight-filled environment, contrasted with the suffocating ornamentation prevalent in real living environments at the time. This appreciation of air, sunlight and nature gradually influenced architecture and urban planning.

3.2.2 Revolutionary Architectural Thoughts

Architecture has a significant influence on urban planning, as many architects are also urban planners. William Morris' Red House in 1851 marked a departure from ornamental design, focusing on humanization, welfare, and service. H.H. Richardson introduced new forms based on new materials and technology, influencing Louis Sullivan and Frank Lloyd Wright. Carlo Lodoli introduced the notion of function into architecture and organic architecture, while Horatio Greenough idealized forms found in nature.

The Bauhaus, founded by Walter Gropius in 1919, was a radical period of art, architecture, and craftsman. It included various fields and was a community of visionaries. The movement sought a new unity of art, architecture, and technology, incorporating technology, simplicity, and rational use of materials. Modern houses and buildings with glass and steel came into being, and Ludwig Mies van der Rohe dictum "less is more" perfectly described his elegant architectural works.

However, the Bauhaus was closed by Hitler and the Nazis in 1932, and Mies immigrated to the United States in 1938. Other famous associates and students also took exile in the U.S.A. and European countries. Some later architects believe that form and function are complementary to each other, and the Bauhaus movement spread to other countries.

3.3 Social Reforms

Historically, royalty, nobles, landlords, and merchants played a significant role in city planning, but slaves and commoners were not. During the industrial revolution, workers were not considered in city planning, leading to isolated slums and ghettos. These individuals, including Negroes, low-income people, Harijans, and the poor in India, lived without healthy housing, health infrastructure, recreational, educational, and social needs. The unhygienic conditions of these people led to epidemics, affecting millions of people, including the privileged.

Many Industrialists implemented policies like subsidized housing and slum clearance, requiring planners to plan for the unprivileged. Lewis Mumford, an urban sociologist, greatly influenced planning for the unprivileged.

3.4 Changing emphasis in planning: purposes of planning

3.4.1 Public Health

Public health engineering emerged as a response to the issue of health, initially focusing on disease prevention and urban planning. However, since 1980, a'social model' has emerged, recognizing environmental effects on public health. Two major environmental effects include air and industrial pollution, which can cause health issues like asthma, allergies, and cancer. Additionally, the loss of trees and green spaces can reduce oxygen supply, exercise, and social contact, affecting the physical and mental health of people in congested urban spaces. The World Health Organization's constitution defines health as a state of complete physical, mental, and social well-being, and the new public health paradigm has six guiding principles: health is not merely the absence of disease or disability, health problems are defined at the policy level, health is a social issue, improving health status requires long-term policy development, primary focus on changing basic conditions, and involvement of natural leaders in change.

3.4.2 Public Safety

Safety in urban planning and architectural design refers to the absence of physical danger, harm, or loss. Proper design of roads, traffic control, pedestrian crossings, sidewalks, playgrounds, and fire stations can reduce accidents. Physical design also affects behavior, and city management can make spaces safer by maintaining a well-lighted and clean environment. Techniques like Oscar Newman's hierarchy of spaces and gated residential communities can help create safer neighbourhoods.
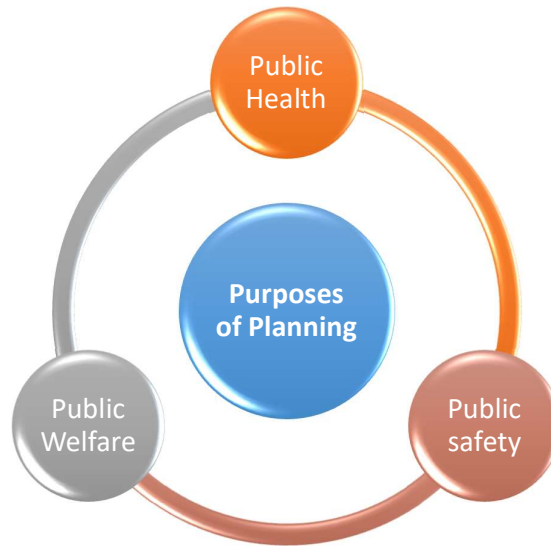
3.4.3 Public Welfare

Webster's dictionary defines welfare as the state of good fortune, happiness, and prosperity. A planner's role is to design spaces for development, employment growth, health services, schools, libraries, parks, fire stations, and community activities, emphasizing community needs over individual needs for a better society.

3.5 Urban growth management

Urban growth in the Bharat (India) has been a challenge for planners and city authorities since the 1970s. Factors contributing to this growth include a booming economy, increased mobility through roads, and heavy immigration from war-torn Europe. However, this growth has led to negative effects such as fiscal inefficiency, social injustice, and environmental degradation. Urban sprawl and leapfrog developments have been implemented to relieve overcrowding pressures, leading to environmental problems such as replacement of scenic landscapes, flooding, and destruction of habitats.

Protecting lands that provide public and quasi-public goods

Providing administrative efficiency

Accommodating development needs

Urban Growth Management

Preventing or mitigating negative and positive externalities

Providing adequate public facilities and services at minimal cost

Distributing the burdens and benefits fairly

Growth management addresses six broad goals: These goals can be achieved through long-range planning, impact analysis, permitting processes, and negotiations with developers. By learning from the experiences of the Indian cities and their organic planning, we can better prepare for future urban growth and environmental issues.

3.6 Environmental Consciousness

Environmental consciousness began in 1970, coinciding with urban growth management. Land development impacts the earth and ecosystem in various ways, including destruction of forests, loss of sensitive areas, disturbance of natural drainage systems, and pollution. Industrial waste dumps and automobile pollution contribute to environmental issues. A site development analysis considers factors such as earth, air, water, plants and animals, noise, natural resources, hazardous waste, housing development, transportation, public services, energy, utilities, and cultural values. The United States passed the National Environmental Policy Act in 1969, and the Clean Air Act in 1970. Many states have passed environmental laws, with the Florida Environmental Land and Water Management Act of 1972 requiring major projects to submit an Environmental Impact Report. India passed the 42nd Amendment in 1976, and the Environmental Protection Act of 1986, with the Ministry of Environment and Forests responsible for administering and enforcing environmental laws and policies.

3.7 Sustainable Community

Sustainable development refers to the ability to meet the present needs without compromising future generations' ability to meet their own needs. A sustainable community focuses on long-term integrated systems, healthy communities, and quality-of-life issues by addressing economic, environmental, and social issues. Economic issues include stable employment opportunities, good wages, technology development, and matching jobs with available skills and education. Environmental issues include protecting human and environmental health, healthy ecosystems, and biodiversity. Social issues include education level, social

organizations, cultural activities, respiratory disease incidence, poverty, and violent crime.

Maureen Hart's book Guide to Sustainable Community Indicators discusses sustainability indicators, community capital, and carrying capacity. To make a community sustainable, indicators must be identified and measured, and solutions must be found. Examples include economy, environment, society and culture, education, health, population, government/politics, housing, recreation, energy, land use, public safety, resource use, and transportation.

3.8 Strategic planning

Strategic planning is a short-term objective aimed at achieving a goal and vision, similar to military strategy. It has been used since 1990 as a community capital building process. While comprehensive plans provide long-term guidance, strategic plans are specific to short-term initiatives. Models like the Moving from Vision to Action model, developed by MDC, Inc., are used by communities for effective planning.

Moving from Vision to Action: Summary

Step	Key Questions	Purpose
Analyse the current situation	*Understand the current situation and determine assets and challenges to address.*	*Where are our strengths, weaknesses, opportunities, and threats? What assets should we build on? What challenges must we overcome?*
Define a common vision	*Develop consensus on a vision for the community's future.*	*At its ideal, what would our community be like?*
Set goals to reach vision	*Define goals that will move the community toward the ideal future.*	*To bring about our vision, what specific outcomes must we achieve?*
Analyse forces affecting goals	*Determine the forces working for and against the goals.*	*What forces will affect our efforts to achieve these goals, and how do we address them?*
Develop strategies to achieve goals	*Determine what actions will achieve the goals and what measures will indicate their achievement.*	*What is the most effective approach to reach those outcomes? What are the measures of success?*
Engage Stakeholders	*Ensure that those critical to success are involved.*	*Have we engaged the people and organizations that need to be involved?*
Plan for sustainability and funding	*Ensure long-term sustainability of the process and strategies.*	*How will we administer, maintain, and pay for our work - short term and long term?*
Implement strategies	*Develop work plans and define responsibilities and timeline.*	*Who will do what, when? How do we ensure accountability to our group and the community?*
Evaluate progress	*Implement work plans.*	*Are our strategies moving us effectively and efficiently toward our goals? How much progress have we made so far?*

Source: Moving from Vision to Action: A Guide for Planning Community Change, ©June 2002 MDC, Inc.
Appalachian Regional Commission

4. Planning - Preparation of Plan, Implementation and Laws

The General Plan Preparation involves analyzing current situations, preparing physical planning and community development elements, and addressing public participation, intra-governmental coordination, and inter-governmental coordination. The planning agency plays a crucial role in organizing and structuring the city

plan, with state planning agencies, local government planning agencies, and independent commissions playing key roles.

Plan implementation involves formulating and implementing major components such as zoning ordinances, subdivision regulation, building codes, urban renewal, and infrastructure development. Zoning and subdivision regulation are often misunderstood components, but innovative techniques can help. Building codes are created for public safety and primary infrastructure, and the city must maintain an inventory of infrastructure and coordinate with providers.

Budgeting and financing are essential for successful planning, but most plans fail due to lack of funding. International organizations like USAID, World Bank, and Asia Development Bank offer long-term loans at low interest rates, while state and national governments must provide guarantees for repayment. Privatization of projects is another option, and municipalities must be committed to anti-corruption measures.

Planning laws, as provided by the Constitution of India, must be reviewed periodically to adapt to the latest planning concepts and needs.. Models like the Moving from Vision to Action model, developed by MDC, Inc., are used by communities for effective planning.

5. India's Housing Crisis

India's housing crisis is a significant issue, with a backlog of decent housing and a need for more in the future. Despite billions of rupees allocated in the last nine Five-Year Plans and legislation, there are no significant success stories. The issue requires local solutions and National Housing Policy implications. According to a report by India's Ministry of Housing and Urban Affairs, there was a housing gap of about 19 million units throughout Indian cities in 2012. The study, done in light of the 2011 census, added that housing for low-income groups accounted for more than 95 percent of the deficit.

5.1 The Housing Shortage

India faces a housing shortage of 20 million units, with substandard units in need of improvements. The lower middle income group struggles to afford homes, and rental units are scarce. The issue presents opportunities for construction, employment, urban and rural renewal, and social and economic well-being. Coordination and cooperation among financial institutions, legislation, governments, contractors, and planners is crucial. India can learn from the United States' successful public works projects, interstate freeways, and subsidized housing projects.

Housing Shortage in India

	Year		
	1991	1996	2001
Urban	8.23	7.71	6.64
Rural	14.67	13.85	12.76
Total	22.90	21.56	19.40

5.2 Urban slums and squatter settlements

India's urban population, comprising 20-25% of the urban population, is largely slum-dwellers due to unsanitary and crowded housing. The problem began in the 1960s with industrial developments and unbalanced economic growth. In Greater Mumbai, 54% of the population lives in slums, with 17.7 million or 24% of people in 27 metropolitan cities. Slums are primarily caused by undeveloped rural areas, lack of employment opportunities, and lack of modern conveniences. They can be divided into two types: dilapidated or overcrowded buildings, and squatter settlements built on unfit land.

A balanced economic and physical development in rural areas, small towns, medium towns, and cities under 500,000 in population in every region of the country is the solution. This will relieve the metropolitan cities from slums, chaotic develop-ments, transportation problems, infrastructure problems, management problems, and financial burdens. The metropolitan cities need to be stabilized.

Distribution of estimated urban housing shortage across India in 2012, by housing type
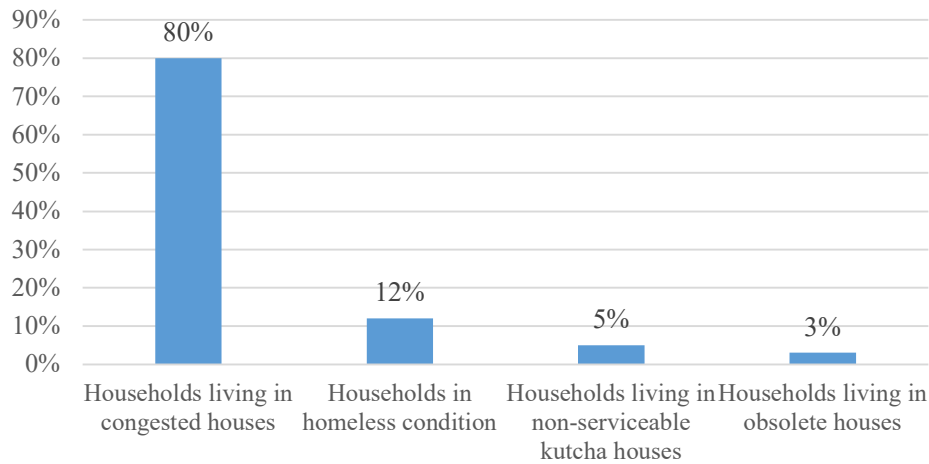
5.3 Low- and middle-income housing

5.3.1 Types of Housing Needed

Housing is essential for all income groups, offering a variety of unit sizes, designs, price ranges, and locations. Regardless of political ideologies, people need food, cloth, housing, and good health, requiring education, environment, transportation, and infrastructure.

5.3.2 Rental Housing

The poorest, younger, transferees, and lower middle income groups in India struggle to afford full rent, leading to a lack of subsidized rental housing. The scarcity of rental housing has led to high rents, unlike in European countries. Challenges include rent control and tenant eviction laws favoring tenants, which deter rent increases and evictions. Additionally, India does not recognize rental housing as an industry, preventing its development and growth. Despite these obstacles, rental housing remains a vital component of the Indian economy.
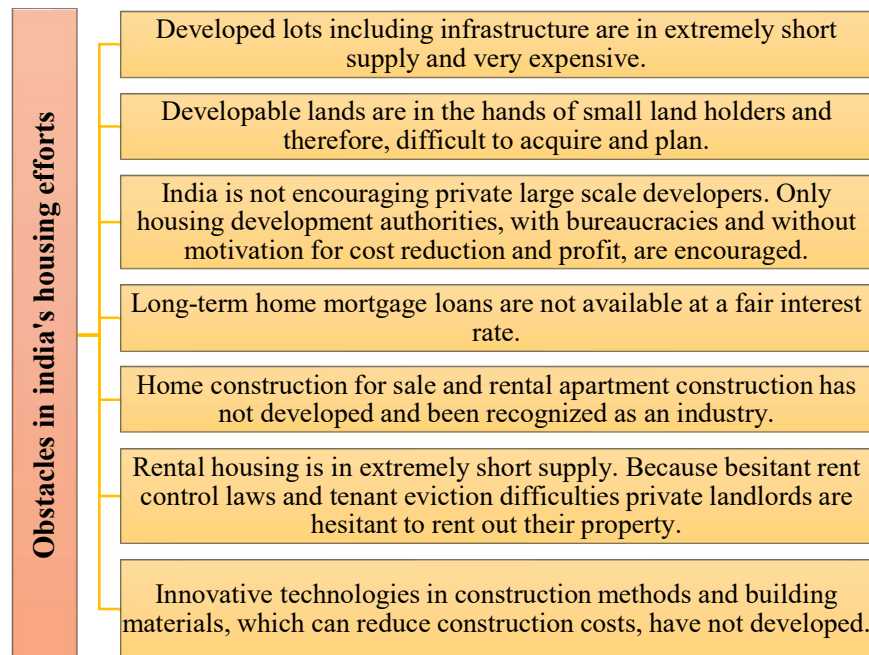
5.3.3 Home Ownership

People aspire to own a home. But it does not come easy. Developed lots are hard to find, legal issues related to the lots are unknown, utilities are not available most of the time, and reliable contractors may not be there. Financing the project is also not easy.

Mostly the aspirant has to depend on own savings, provident fund or some kind of loan that is not easily available. The aspirant homeowner has to overcome many problems which can be exhausting and discouraging.

5.4 India's Housing Efforts

India's housing efforts began in the 1950s, with subsidized housing for industrial workers in urban areas. The government directed Life Insurance Corporation of India to provide financing to middle-income groups. The government also focused on rural housing, with limited funding for low and middle-income groups. The National Housing Policy in 1988 recognized the government's role as initiator rather than home builder, facilitating access to land, material, technology, and finance. However, this policy was criticized for potentially pricing low-income families out of the open housing market. Cooperative Housing Societies operated in some cities since the late 1950s, building 1.4 million housing units and 0.54 million dwellings. The Delhi Development Authority (DDA) was formed in 1957 to promote and secure development of Delhi, and other housing development authorities operate in other cities and states. Private developers are discouraged in India, but in Haryana, they are welcome. The National Commission on Urbanization (NCU) recommended that housing authorities and development authorities should be facilitators rather than land developers and home builders.

Obstacles in india's housing efforts

- Developed lots including infrastructure are in extremely short supply and very expensive.
- Developable lands are in the hands of small land holders and therefore, difficult to acquire and plan.
- India is not encouraging private large scale developers. Only housing development authorities, with bureaucracies and without motivation for cost reduction and profit, are encouraged.
- Long-term home mortgage loans are not available at a fair interest rate.
- Home construction for sale and rental apartment construction has not developed and been recognized as an industry.
- Rental housing is in extremely short supply. Because besitant rent control laws and tenant eviction difficulties private landlords are hesitant to rent out their property.
- Innovative technologies in construction methods and building materials, which can reduce construction costs, have not developed.

5.5 Technological Innovations

India needs to focus on three fronts for rapid, durable, and cheaper construction of homes and other buildings. Those are: (a) development of cheaper but durable building materials, (b) new construction methods, and (c) industrialized buildings.

5.5.1 Development of cheaper and more durable building materials

Traditional constructions in India include mud plastered walls, threshed roofs, wood framed walls, brick walls, and corrugated iron sheets. The latest construction material is reinforced concrete columns, roots, and brick walls. Traditional homes are expensive and uncomfortable due to the scarcity of threshes, wood, and forests. New construction materials, such as insulation and hollow concrete blocks, are needed to address heat problems. Prefabricated building components are cheaper, faster, and less labor-intensive. In the US, small or medium-sized homes can be built in three to four months due to standardization and prefabrication. Skills need to be taught to workers.

5.5.2 New construction methods

Construction methods need to shift to machines for efficient and cost-effective work. Heavy jobs should be handled by cranes and other machines, providing jobs for skilled, semi-skilled, and unskilled workers. Automation is being used in large projects in metropolitan area. Contractors should be motivated to use new methods and materials to build faster, produce high-quality buildings, and earn more contracts. Existing methods include structural steels, cranes, and prefabricated components.

5.5.3 Industrialized buildings

Industrialized buildings, or manufactured buildings, are a popular affordable housing option in the world. These buildings are constructed in factories and transported to the site on wheels or flat bed trucks. They can be designed for various purposes, such as dwelling, commercial, office, storage, or school. The construction process is economical and efficient, but construction is expensive. However, smaller buildings and sections can be transported and installed on foundations with smaller cranes. Long-term home mortgage loans could make these buildings more affordable.

6. The Future of Urbanization

India's urban population is expected to increase from 30% in 2001 to 70% by the middle of the 21st century due to natural population growth, small settlements growing to urban centers, and migration from rural to urban areas. The country should be prepared to plan for this growth and consider six reasons for balanced development.

The economic boom in India is real, with factors such as the western world seeking cheaper labor

markets, India leading in information technology, medical, telephone tourism, manufacturing and preparation of transcripts for medical and court records, and the advantage of English language compared to other countries. India also has the largest untapped consumer market of over one billion people, which attracts industrialists from India and abroad.

India has about one million young workers in the labor market who are now regarded as assets rather than burdens. India is improving its industrial and research infrastructures and poised to compete with western industrial nations. Investments in technical education have started paying off dividends.

India has plenty of natural resources yet to be exploited, such as iron ore, coal, and bauxite in the central part of the country. Commercial exploitation will bring employment to unskilled and semi-skilled workers by millions. India's foreign exchange reserve has increased from $106 billion to over $600 billion, providing the means to buy foreign machineries and technology.

However, India faces challenges, including weak infrastructure, corruption, and labor laws that discourage companies from hiring workers. The government is aware of these issues but is slow in developing. India is improving its transportation and communication systems, which are ingredients to development.

7. India's balanced development and regional urban development policy

India needs a balanced economic and population distribution to provide access to markets and employment opportunities without displacements from traditional homes. National urban growth policies should restrict expansion of existing metropolitan areas and cities over 500,000 populations, create counter magnet cities with sufficient land and infrastructure, stabilize large cities through urban renewal and depopulation, and create urban growth centers as percentral place theory. This will meet the aspirations of Mahatma Gandhi and President Kalam and the regional planning principle of balanced development. The Planning Commission and the Town and Country Planning Organization, Ministry of Urban Development, Government of India, should review current efforts in economic development and distribution. State and regional planning is urgent, with each state having land use planning considering environmental concerns, preservation of forests and wetlands, transportation, and land uses.

7.1 State and Regional Planning

India has been formally divided into 15 macro regions, but no actual regional planning is done. It is urgent that all 15 macro regions should be planned for distribution of various sizes of cities and for economic developments. Every state should have state land use planning considering environmental concerns, preservation of forests and wetlands, transportation, and land uses of various categories. Within each state micro region should be formed and planned.

8.0 Conclusion

Urban planning has evolved significantly over time, with architects and planners playing pivotal roles in shaping city design. Various historical movement, social reforms, public health engineering, and environmental consciousness have all contributed to modern architecture and building design. India's housing crisis is a significant issue, with a backlog of decent housing and a need for more in the future. To address this, local solutions and National Housing Policy implications are needed. India faces a housing shortage of 20 million units, with substandard units in need of improvements. Coordination and cooperation among financial institutions, legislation, governments, contractors, and planners is crucial. India can learn from the past's successful public works projects, interstate freeways, and subsidized housing projects as India was was a treasure trove of knowledge, wisdom, and heritage from ancient time. From kings to kingdoms, town planning to artistry, scholars to astronomers, Gurus to shishyas, warriors to strong women characters, the list of India's rich past goes on and on. A balanced economic and physical development in rural areas, small towns, medium towns, and cities under 500,000 is the solution. India needs to focus on developing durable, and cheaper building materials, new construction methods, and industrialized buildings for rapid, long-lasting, and affordable construction. To achieve balanced development, India should restrict expansion of existing metropolitan areas, create counter magnet cities, stabilize large cities, and create urban growth centers. State and regional planning is also crucial, considering environmental concerns, preservation of forests and wetlands, transportation, and land uses.

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