

## URBAN DYNAMICS OF A DEVELOPING COUNTRY

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### ABSTRACT

The magnitude and complexity of urban problems in developing countries in general and India in particular have not received the attention they deserve from policy makers especially in the context of the vital role of Essential Environmental Facilities in promoting Socio-economic and political development of the country. The basic need for Essential Environmental Facilities in adequate quantity and quality is the driving force behind much of the economic activity which is vital for sustained urban development. Creation and maintenance of Essential Environmental Facilities have traditionally been considered to ensure health and safety to the urban dwellers. In recent years, the delivery system of such facilities has seen greater set back. Increasing population both natural and social has been a major cause for concern. Obsolete taxing system, poor returns from the investments already made and large scale investment on unproductive social welfare and public protection schemes coupled with improper devolution of financial powers between governments at various levels have aggravated the problems. Lack of drive towards identification of new source of finance and ineffective urban management system have added to the severity of the problems.

Past efforts directed towards ameliorating the urban sickness has not yielded the desired results as they were limited in scope and piecemeal in nature with adhoc financial support. The acute shortage in all segments of the Essential Environmental Facilities sector is giving rise to social tension, impeding economic development to the extent of increasing urban poverty and decay. Reversing the trend with a positive direction towards enhancing the quantity and quality of the facilities stock becomes imperative. This calls for long and short term programmes devised to ensure adequate reach to the different cross section of the population. Operational efficiency and effectiveness for optimum returns should be the prime concern of the programmes. To state the obvious, it is not an easy task to achieve all of them within a short period. given the socio-economic and political fabric of the cities.

In this paper a small attempt has been made to bring out the major problems arising out of the process of urbanisation and the impact on the economic activity, the Essential Environmental Facilities which include the 'Basic Services', 'Complimentary Services' and 'Special Urban Services' and the kind of Urban development programmes relating to Indian conditions. This methodology is intended to serve as an approach for the much needed research work using the principles of systems dynamics particularly for developing countries.

## 1. Introduction:

The urban areas in the developing countries have exhibited a radically different character during the past few decades from those in the developed countries in terms of population growth and urbanization. The pace of socio-economic development being rather slow, the urban magnet has been able to create and maintain an illusive image of higher employment potential and other socio-economic benefits. The one way migration resulting from this urban pull has severely aggravated the complexities of urban living. Today we see the cities scarred by congestion and decay, speculation and ugliness. The migration of rural folks to urban area has primarily been for a better job and living conditions. The unproductive low level of skills often land them in jobs which are either informal in nature or can be classified as nongainful employment. Yet the surge of people into the cities continue as the perceived income level in the urban areas are better than what they otherwise would gain in rural areas. Nevertheless, the income level in the cities is not commensurate with urban living standards call for and grossly inadequate to afford for all the services that are essential to lead a healthy living. Thus the huge concentration of people in a city crushes all attempts to improve the essential Environmental Facilities (EEF) in terms of quantity and quality. The EEF includes the entire infrastructure and service facilities namely; Health, Education, Water supply Sanitation, Transport and recreation. Facilities utilized beyond their designed capacity often warrent greater investments for regular maintenance and replacement resulting in very low level of investments on creation of new stock. While the non affordable characteristics of a vast majority of population bring in less revenue to the coffers of the city government, there has been increasing demand for social welfare and public protection. Diversion of huge segment of the city budget for such welfare schemes has not brought any significant level of improvement either in the quality of life or in the general economy, signifying the fruitless efforts diverted to filling up of a bottomless pit. Several schemes intended to ameliorate the living environment of the 'less fortunate' section of the population, so far proved to be of no significant effect. Efforts made towards alleviating one problem aggravated the other. In spite of several studies and problem assessment exercises, often urban managers are found confronted with the problem of identifying an appropriate technical tool which could address the whole range of the urban problems, the deficiency levels, the trade offs, the resources, the constraints and the system which could provide the most appropriate basis for exercising various options within the socio-economic constraints for providing a better living environment and sustained growth in the long run. In this direction, a small attempt has been made in this paper to conceptualise an Urban Development Model appropriate to a developing country.

## 2.0 URBANIZATION IN INDIA PROBLEMS AND PROSPECTS:

The magnitude of the problems faced by the urban areas in India can be gauged by the phenomenal increase in urban population over the past four decades. While the people living in India has more than doubled from 350 million in 1947 to nearly 800 million today, the urban population has been growing almost twice as fast and in real terms quadrupled from 50 million in 1947 to over 200 million in 1988. It is also anticipated that the population will reach 350 millions if the present trend is continued uncontrolled.

### Problems:

Urban living environment is more often gauged by the affordability level

of people in availing essential environmental facilities in terms of quantity and quality. Unquestionably the most severe challenge is the urban poverty. Official estimates place 27.7% of the urban population below poverty line. The urban poverty manifests itself in different forms and it is visible in the proliferation of slums with deplorable living conditions, malnutrition, high birth rate and high mortality rate, low level of literacy, rapid growth of informal sector with increasing casual labourers with less or negligible skill, over utilization of civic facilities resulting in very low level of service and increasing incidence of social crimes.

Urban population is composed of a vast segment of rural migrants and the recent studies established that the natural and social increase of population is almost at the same level (4% per annum) with very little prospect for reduction in Birth rates and outmigration. It is generally believed that the demographic profile of urban poor is characterised by age and selective migration and there is preponderance of males particularly in the age group of 20-50. Studies conducted on the demographic profile of urban poor in cities like Madras has established that in terms of sex ratio and percentage of male female in the age group of 20-50 there is a demographic balance contrary to the general belief and the migrant movement may be of the whole household rather than individuals. Thus pockets of rural India is very much a part of urban India.

#### INFORMAL SECTOR:

Unabated and unidirectional influx of population into urban centres is the primary cause for the growth of informal sector. Dwindling job creation in the formal sector is also equally responsible for the current state of affairs. While dwindling job creation can be attributed to various other reasons arising out of industrial location policy, energy crisis, industrial sickness, labour unrest, restrictive legislation and limited housing activity; improvement and creation of new infrastructure and service facilities in adequate quantity and quality which has enormous potential for job opportunities has been a major stumbling block in creation of new jobs. Notwithstanding the problems of definition and measurement there has been a general consensus that the informal sector is growing at a fast rate with more casualness. This is also further corroborated by the income-investment ratio of informal sector activities which is 3.6 as against 0.71 in the formal sector.

#### PROSPECTS:

Urbanization has brought in a host of problems to the urban area and the urban area is generally characteristic of irrational land use disposition, inefficient and ineffective land development and utilization, uncontrolled physical deterioration, acute housing shortages and environmental degradation to a varying degree. On the contrary, urbanization can also be perceived as a process by which the surplus human resources (in-migrants from rural area), if subject to gainful employment in non-agricultural activities will act as a catalyst for economic development. Mere transfer of rural poverty to urban environment can only result in misery. Alleviating poverty and improvement in the general economy call for understanding of the basic issues in terms of providing for job opportunities, enhancing resource allocation to provide for the basic services to ensure healthy environment and the urban management system that is required to deliver such services. The emphasis on such understanding becomes crucial from the fact that all the surplus agriculture labourers are to be gainfully employed only in non-agricultural activities. The positive role of urbanization can materialize only if the cities are

economically viable and capable of generating economic growth in a sustained manner. The cities must become economically vibrant centres making the best use of human and natural resources instead of remaining as isolated economic entities. This calls for treating the process of urbanization as a part of a mega strategy of generating economic growth, not one of adhoc allocation of residual funds for housing slum clearance, sanitation schemes and pumping in of foreign funds for augmenting resources for such development. From the overall national economic development view point, Urbanization is an economic necessity and to be considered as a positive factor. Although there are good prospects that it will proceed at an accelerated pace in the future, the process of urbanization in India is mainly due to the 'push' factor of depleting the rural income rather than the 'pull' factor of assured jobs in the urban area. There are two distinct dimensions to the process of Urbanisation. Urbanization in its wake brings in growth and structural changes in the economy on one hand, on the other hand it is also characterised by environmental imbalance. The process of urbanization viewed from these two sides of contradiction leads to a basic question of whether or not to restrain urbanization. However, conclusions drawn from several studies indicate that in order to achieve equity and social justice the national income must be shared by urban and rural citizens by not adopting measures which will contain the villegers in rural areas and not curtailing employment generation in urban areas.

Poverty can not be characterised sufficiently in terms of income, expenditure or consumption patterns alone. Poverty is complex in context, texture, characteristics, impact and implications. The thrust should be on human degradation resulting from poverty not only on numbers. Thus it becomes imperative to focus attention on multidimensional concept which encompasses the living environment, access to services and social and psychological supports. This calls for systematic examination of macro policies and programmes for their positive and negative effect on urban poverty and urban poor. It also needs to be appreciated that the urban and rural poverty are inextricably interlinked; which at the same time does not mean that urban poverty is the spill over of rural poverty. It is, and has to be considered as autonomous and independent phenomenon and the whole urban system is responsible for its ills or well being. This is further strengthened by the inescapable situation that however effective and efficient the rural employment programme may be, meeting the demand for millions is an uphill task and a vast rural segment will still continue to migrate towards urban centres in the coming decades. Thus the enormous influx will have greater impact on employment and poverty. Thus urban and rural poverty are two different dimensions and needed to be addressed simultaneously. Countering the forces responsible for underdevelopment by strengthening the forces of growth can achieve optimum development of growth potential. This can be achieved by avoiding misdirected developments causing depletion of the essential resources responsible for widening inequality.

## 2.1 URBAN POVERTY ALLEVIATION- PAST EFFORTS AND FUTURE NEEDS

### PAST EFFORTS:

Poverty alleviation programmes in the past were proposed based on the strategy which included provision of gainful employment to the unemployed, particularly women and youth raising the earnings of those in low paid jobs, stepping up the productivity and earnings of self employed workers and improving the access of the urban poor to basic amenities such as education, health care, sanitation and safe drinking water. While these programmes

produced mixed results, conclusions drawn from the objective assessment of these programmes indicated that the reach of these programme is limited, the high degree of flexibility and the lack of convergence of programmes missed even the targeted population.

#### FUTURE NEEDS:

Future efforts needed to formulate programmes for poverty alleviation by enhancement of income and employment opportunities need to be considered as a mega strategy for long and short term benefits. Employment training programme can be a rational programme aimed at training to suit to the needs of the industry or for self employment. For successful self employment programmes simultaneous efforts must be directed towards credit support facilities for micro-enterprises, technological upgradation to make the enterprises economically viable, and infrastructure development support for marketing and production. Promotion of new programmes for creating public assets will generate gainful employment to the urban poor. However success of these programmes greatly depend on the degree to which extension of basic services in terms of formal and non formal education facilities, family planning and health education support, shelter improvement schemes and extension of public services coupled with appropriate subsidy programmes.

#### 2.2 URBAN FINANCE AND MANAGEMENT- PROBLEMS AND PROSPECTS:

##### PROBLEMS:

The local bodies responsible for maintaining the 'City Services' are perennially short of resources both for maintenance and creating new stock required to meet the demand created by the ugly consequences of urbanization. Phenomenal growth of slums and unplanned development, absence of services and the running down of those that already exists, encroachment on public land and underutilization of prime lands in urban centres, inefficiency in the management system and the emergence of urban chaos reflect on the paucity of funds with the urban administration. This can be corroborated by the share of municipality in the overall governmental expenditure by Centre, State and Local governments combined as 8% in 1960-61, it had declined to less than 4.5% percent in 1980-81. On the contrary the urban population from about 16% of the total in 1960-61 increased to 24% in 1980-81 and during the same period the municipal revenue registered an increase of 15% per annum when compared to 17.5% in the case of Central and State revenues. Increasing dependence is noticed for financial support from State government in the form of grants and loans due to declining tax revenue. To add to the crisis, there is niether a system of guaranteed non-plan assistance for maintenance of facilities created by other governmental agencies established to attend to specific developmental sector nor the municipal bodies are free to impose adequate user charges. In the absence of a system of regular devolution of State funds to local bodies and preparation and implimentation of State plans combining municipal plans also, the schemes funded and executed through different agenceis remain isolated and unmaintained. The municipal bodies although vested with powers to collect taxes from several activities of the city are subject to State government control. and the revenue is not commensurate with the increase in the level and intensity of activities. The system of taxing is more often used as a tool to meet political ends rather than a effective system of regulating the city developments.

All governments, particularly the city government should function on the basis of funding of its programme through tax revenues. Besides refining the

existing tax structure, new areas of tax potential should be brought under the ambit of system devised to enhance the resources of city government. Business ventures (including industries) are located at centres where there are economies because this makes good economic sense. The contribution by the business houses towards maintenance of the services availed by the industry is virtually nil. While new ventures induce economic activity and urbanization, the economies of urbanization which should really be treated as social resource are thus converted into private resource by the business community. This trend needs to be reversed and appropriate revenue harnessed to augment the social wealth of the city. Simultaneous efforts are needed to be undertaken to streamline the system of utilization of the generated resources of the industry for restructuring the city instead of allowing the entire resources generated to keep the obsolete industries functioning. by which parts of city getting decayed can be prevented and introduction of new ventures to revitalize the growth of the decaying parts promoted.

#### URBAN MANAGEMENT:

Urban management is yet to be liberated from the Utopian approach. Creation of several agencies to plan and implement individual sectors of urban organ has not been effective in solving several problems confronting the urban area. Since the planning and implementation is entirely the responsibility of individual agencies which are already facing great difficulties in generating their own resources, are ineffective in fulfilling the demand. The schemes are adhoc and piecemeal in character, thus creating grave imbalance between the sectors as the schemes are not formulated on a comprehensive basis. Methods based on capital budgeting, pricing, costing and accounting are very rarely used as tools. Creation of several agencies in the urban areas have reduced the basic functions of a 'City Government' which is entirely responsible for the improvement and development of urban areas. Resource generation and allocation on comprehensive basis, based on the sectoral needs priorities and the urban development policies needs to be done under one umbrella for achieving optimum results. Thus there is an imperative need to form an urban government.

#### 2.3 ESSENTIAL ENVIRONMENTAL FACILITIES- PROBLEMS AND PROSPECTS:

The Essential Environmental Facilities of an urban area includes; 'Basic Services' which reflect the basic needs of the population. Examples of such sectors are; water supply, sewerage, storm water drainage, solid waste management, roads, park and play fields. These sectors are wholly financed by the public authorities out of the general revenue of the local body or the State government. The second type of services which are termed as 'Supplementary Services' are; education and medical sector. Although the supplementary services can also be classified as 'Basic Services', the difference lies in the major involvement of private sector. The third form of service is the 'Special Urban Services' namely; transport, Housing, Communication etc which operate on commercial basis, whether operated by public sector or private sector. Major components of urban management are; providing and maintaining the basic service and involvement to a greater extent in the supplementary services too. There are several deficiencies in the area of planning, implementation, financial resource allocation and management in providing for these facilities in adequate quantity and quality.

The 'basic services' sector needs to be developed commensurate with the population growth arising out of urbanization. Provision of basic services in adequate quantity and quality can itself act as an economic activity

generating enormous employment opportunity. In the absence of adequate returns from the existing services facility stock, over utilisation, lack of maintenance and very low contribution from the State and Central Governments, these service facilities are grossly inadequate and inefficient. Neither there is a long term plan for creation of new stock nor a short term programme to upgrade the existing stock. Capital budgeting is conspicuously absent to address the needs and priority of each sector and the overall financial need which in turn will focuss attention on policies and programmes for resource mobilisation. A systematic assessment of the existing and future deficiency levels of the facility stock, economic engineering and management, shortcomings and future requirement is the basic need of the hour. Delivery of these services in adequate quantity and quality is a formidable task especially in urban areas where one third of the population has a very low affordability, a vast majority is lower or medium affordable group and the rest (about 20%) fall under the high affordability group. Since optimum returns for the services will depend on the affordability characteristics of the community to be served, it becomes crucial to devise appropriate subsidy programmes, so that the needy benefitted the most. The sectors like solid waste management needs application of appropriate technology for waste reuse, recycling and disposal. Basic services as a whole should be conceived as a major source of employment wherein skilled and unskilled urban unemployed can be utilized gainfully. This in turn will enhance the affordability characteristics of the urban poor and the level of participation in the economic activity will also simultaneously be increased to sustain the urban development momentum.

#### 2.4 NEED FOR SYSTEMS DYNAMICS APPROACH:

Symptoms of Higher order urbanisation is highly pronounced by the chaotic conditions prevailing in Indian cities. This is the stagnation stage wherein further growth is severely hampered because of poor management system. To reverse the situation and to foster urban growth there is an imperative need for policy and investment intervention either to speed up or channalize the process of both and calls for initiation of realistic urban development programmes. It is equally important to understand that how should the investment be conceived and directed and what should it achieve?. Planned investments certainly call for satisfying several sets of questions. However the most pertinent issues that it should strive to achieve are (i) meet the challenges of the felt needs and priorities, which means that (ii) it should perform with greater operational efficiency and effectiveness, (iii) it should be cost effective and provide for higher financial return. At the same time (iv) it should be operational within the constrained financial resource base. Further it should lead to (a) a sectorial policy (eg. low cost and environmentally acceptable Housing programmes and job training programme) (b) the sectorial or total investment programme given the development objectives. To state the obvious, it is not an easy task to achieve all of them, in a short period of time given the socio-economic fabric of the population. The whole process needs an appropriate and scientific tool, which could address the sectorial systems in a form which could be easily understandable by the city managers and the people for whom the programmes are intended. It is imperative that this scientific approach represents the dynamic characteristics of the urban system and embodies all the sectorial parameters which have clearly established inter-relationships and act upon each other so that sectorial information feed back is established on vital issues. Figure.1 establishes the concept of Urban Development Model. This approach also needs

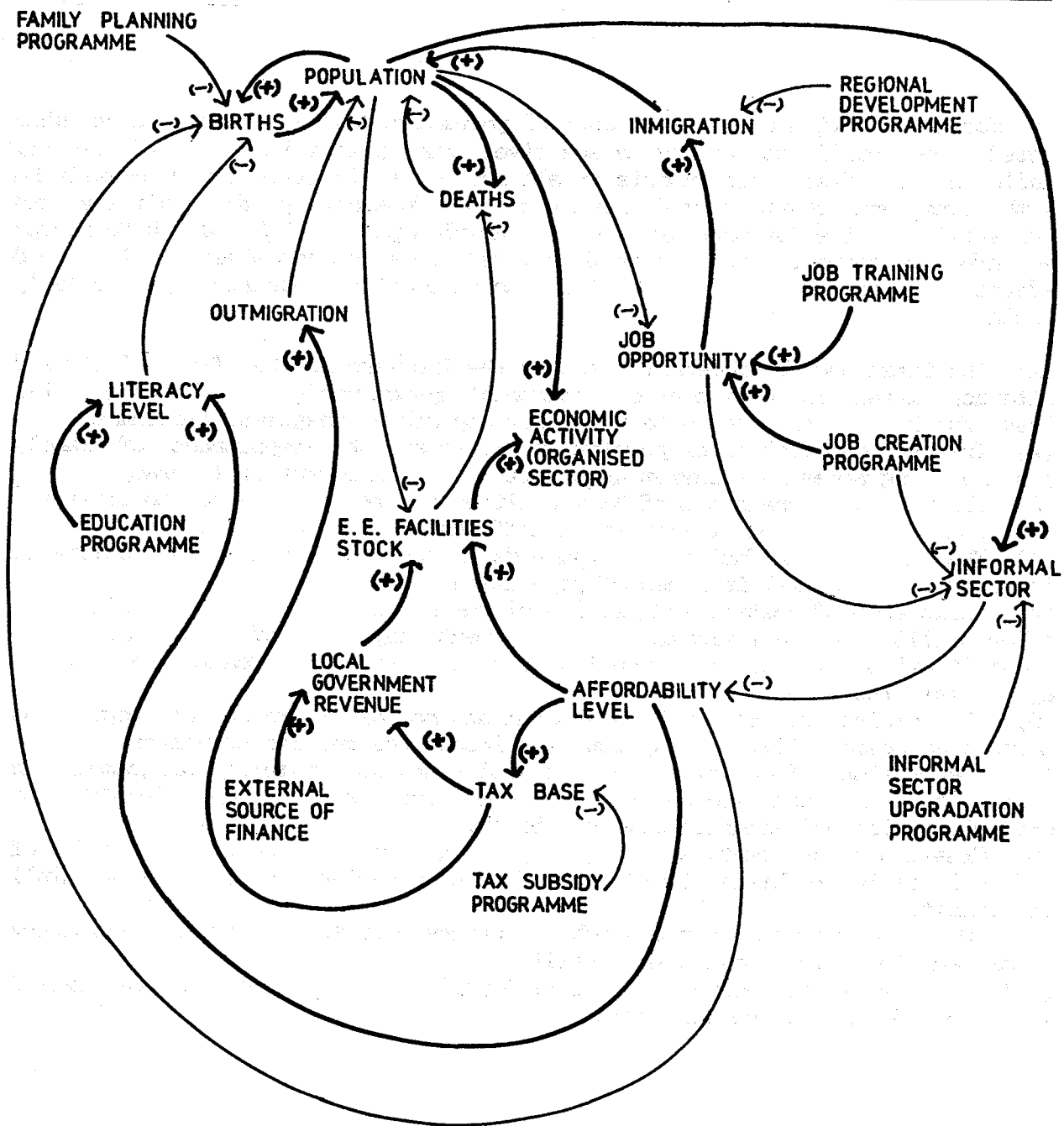


FIG. 1. CONCEPTUAL FRAMEWORK OF AN URBAN DEVELOPMENT MODEL.



to focus attention on a set of control parameters on variables, which when acted upon based on policy perspectives and priorities, should clearly indicate the effects and impacts in all sectors to identify their compliance with long and short term desired results. Considering the validity and suitability of the 'Systems Dynamics' principles put forth by Jay.W.Forrester an urban management model can be formulated. Thus the conceived model should address the following issues pertinent to developing countries particularly India.

- (1). The first and the foremost issue is the increase in the affordability and literacy level. The entire urban management system needs to be based on this issue which is considered to be vital for any urban management programme.
- (2) The serious problem of population growth and the importance of family planning programmes in alleviating poverty and enhancement of literacy.
- (3). Planning and management of EE facilities and their relevance to different age group and affordability levels of different segment of population.
- (4). The impact of EE facilities standards in terms of quantity and quality on the natural and social increase of population.
- (5). Relevance of costing and pricing of the services in accordance with the affordability characteristics of different segments of population for identification of resource implications and resource generation through appropriate tax structure.
- (6). Exercising control on both natural and social increase of population through economic activity by appropriate incentives and disincentives.
- (7). Generation of employment opportunities and job training programmes in tune with the need and demand to foster increase in the affordability characteristics and economic upward mobility.
- (8). Creation of new ventures for employment generation, and reorientation of informal sector to bring it under the fold of organised sector for gainfull employment.
- (9). Need to evolve a system which can narrow down the existing deficiency levels and to achieve long term benefits.
- (10). It is vital to ensure that the Plan period in the Model does not exceed more than 20 years to be realistic.

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