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All India Institute of Local Self-Government

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International Academy of Urban Dynamics

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All India Institute of Local Self-Government (AIILSG), established in 1926 has been actively working in the field of urban development management and is a diligent partner in promoting the cause of local governance in India and overseas.

The Institute has been the steadfast friend, philosopher and guide to Urban Local Bodies (ULBs) across the Country. For more than eight decades it has contributed to the principles and practice of urban governance, education, research and capacity building. It has designed and developed a vast array of training literature and courses and trained more than 1.5 million stakeholders in diverse areas of urban governance and urban services delivery.

These activities of the AIILSG are practiced through 30 regional centres located in different regions of the Country. The Institute anchors the Regional Centre for Urban and Environmental Studies (RCUES) of the Ministry of Urban Development, Government of India for Western India region. This Centre is actively involved in building capabilities of municipal officials, staff and elected members from the States of Goa, Gujarat, Maharashtra, Rajasthan and the Union Territories of Diu, Daman, and Dadra & Nagar Haveli by upgrading their knowledge and skills required for effective administration and implementation of various urban development programmes.

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About International Academy of Urban Dynamics (IAUD)

International Academy of Urban Dynamics (IAUD) has been conceptualized and set up at the AIILSG with a view to support countries and cities and their stakeholders in their decisions towards a bright urban future.

The Academy offers strategic contribution to urban vision, policy and planning across countries and cities through multi-level research, documentation, debate, advocacy and capacity-building. It aids the crafting of innovative solutions to urban challenges through sharing, networking, dissemination and advisory services.

The Organization has embraced certain values including a pervading quest for excellence, perpetual learning, and the sharing and interpretation of knowledge that is grounded in ethics and truth. IAUD would undertake non-partisan analysis and evaluation of situations, facts and figures and render advice that is non-adversarial in intent and positive in content with a view towards better alternatives.

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Editorial

Affordable Healthcare for All; moving beyond dream to reality

Ensure healthy lives and promote well-being for all at all ages *is Sustainable Development Goal 3. Among the targets is 'Achieve Universal Health Coverage, including financial risk protection, access to quality essential healthcare services and access to safe, effective, quality and affordable essential medicines and vaccines for all'.* Dr. Margaret Chan, Director-General of WHO and Dr. Gro Harlem Brundtland in a commentary on the subject state that this target "stood out as a beacon of hope for a healthier world". Health and well-being are crucial indicators of human development which are evidence of the effectiveness of public health systems and therefore the quality of governance. Healthcare for all is no more limited to a sympathetic concern for people, especially the disadvantaged. Adequate and effective investment in public healthcare and the resultant benefits in terms of a healthy population go to bolstering economic development and growth. UHC as an approach to development is not just limited to prevention and management of disease but also supports the evolution of more just, fair, equitable and sustainable societies, in turn enabling the achievement of the larger objective of poverty eradication.

Good health enables members of a community partake in the economic opportunities that the world has to offer and benefit financially from such engagement in order to live fuller, more meaningful lives while meeting their needs in a wholesome manner. In a more direct measurement, good health can enable large populations save significant amounts in terms of curative healthcare costs which could have remarkable effects on their economic well-being. Dr. Chan notes that as per WHO estimates out-of-pocket expenditures on health services push 100 million people into poverty every year. Good health can also enable further the cause of gender justice by enabling women to participate more vigorously and effectively in the economic chain when they are themselves in good health and relieved of care-

giving duties for those family members who are not in good health. It promotes equity further by enabling larger parts of the population access healthcare without causing themselves financial injury. Effective public healthcare while leading to better health outcomes can thus enable the achievement of other social goals.

Relentless urbanisation in all parts of the world has created a concentration of population in compact cities, heightening deficits in infrastructure and services including housing, clean water, effective public sanitation, waste management and so on, resulting in poor living conditions and spread of disease. At the same time, rapidly rising private healthcare costs in the cities alongside an indifferent, ineffective, often corrupt, public healthcare system have left many citizens with no option than to endure the pain of ill-health silently.

Healthcare in India

Public Healthcare in India has been a challenge. Things are changing however. In mid-March this year, the Cabinet gave its nod to the National Health Policy (NHP) 2017. This initiative plans to significantly step up public expenditure on healthcare to 2.5 percent of GDP by 2025. Current expenditure is placed at around 1 percent. Worldwide in both developing and developed countries, the expenditure is 4 to 5 percent. Possibly because Indian healthcare is largely dominated by the private sector, both in urban and rural areas with about 70 and 65 percent of the population respectively dependent on it. The problem with public healthcare facilities in India is multi-dimensional. Poor infrastructure, difficult access, and irregular operations are some. But the biggest is that these public centres, especially the rural ones are in many places poorly staffed by a set of uncaring, unmotivated junior personnel who participate only because it is mandated. The lure of the lucrative opportunities in private healthcare in the large cities is too much to forsake.

The high dependence on private healthcare coupled with very low levels of insurance coverage means that people end up with very high out-of-pocket expenses on healthcare. By some estimates the population covered by insurance is just around 20 percent. Further, typically private health insurers cover only the cost of hospitalization and related expenses. Outpatient consultation and medicines end up as out-of-pocket. Government support is indirect in the form of tax sops for insurance premium and major illnesses.

India's private healthcare industry is characterized by many less than noble practices. The recent case of alleged mass female foeticide in Sangli District of Western India was a shocking instance of grave professional misconduct.

Governments have had to frequently reign in the manufacturing/distribution sectors through means like Drug Price Control. Another recent example is the public outrage over pricing of cardiac stents, apparently a case of heartless profiteering by the industry. Professionals in the industry, mainly doctors are often known for irrational drug prescribing and uncalled for interventions thus inducing patients to spend more than would possibly be necessary. The government's thrust on generic medicines through Jan Aushadhalays is a welcome step and is reportedly benefitting many through much cheaper generic medicines.

The Reconstituted Task Group on Public Private Partnership under National Rural Health Mission (NRHM) states very succinctly the need for public healthcare in the following sentences "There are many reasons for advocating a large public sector in health. Firstly, it is less expensive than private health care. Secondly, it is often much more equitous, both geographically and socially. Thirdly, it is an opportunity for rational drug use and use of standard treatment protocols. Fourthly, it helps to keep the balance right between preventive, promotive and curative care. Fifthly, it insulates the poor against market led promotion of drugs and diagnostics. Sixthly, it allows the state an opportunity to face up to unfair markets for drugs, diagnostics and other health services. Seventhly, it allows a greater possibility for convergent action, given the wide diversity of determinants of health – water, sanitation, women's empowerment, education, nutrition, social and gender inequalities, cultural practices, etc."

The prescription

To start with, we must appreciate that healthcare, especially for the highly disadvantaged sections, cannot be left to free market economics, i.e., buying and selling medical services and products like other commodities. We cannot expect that competitive forces will come into play and the prices will reflect true costs. This has not happened. Largely because the buyer of the service (patient) is rather ignorant about his illness, the standard treatment protocols, genuine costs, etc. and is thus at the mercy of the practitioner and the less than egalitarian private healthcare industry. Healthcare is special and has a bearing on the well-being of society, more so of the poor and vulnerable. There is need for a rights based approach which will build an accessible, affordable and accountable public health system. Healthcare cannot be different from education and food which the state guarantees. The role of the public sector needs to be paramount in enabling all citizens to access their rights including the right to good healthcare. The role of the private sector will remain important and if it is to be a valuable partner, needs to be well regulated.

The recently announced National Health Policy 2017 is a welcome development which recognizes that the state will have to play a more active role in providing healthcare to citizens. In due course, there is possibly the need for a law, akin to 'Right to Education' and 'Right to Food' which will layout the principles, the framework, the operation, the roles of various stakeholders including standards, obligations and liabilities of service providers and so on. The Act could provide for a regulator who will oversee the functioning of the entire industry, lay down regulations and enforce the law.

The system needs to work on the principle of zero or near zero out-of-pocket costs for citizens especially the poor and vulnerable. While the NHP plans for generous public spending, there could be a mandatory social health insurance contribution as against voluntary insurance to fund public healthcare. The dominant role of the public sector will enable drive down costs significantly. Drugs, diagnostics and surgeries prices could begin to reflect true costs and not be determined by opportunistic behaviour. A noteworthy feature of the NHP is the proposed National Healthcare Standards Organisation to develop protocols and standard guidelines for care.

Health is too precious an asset to be left solely up to the ability of the individual to buy the service or products. It is especially so in a society such as ours where income disparities, social inequality and illiteracy and therefore the vulnerability of certain sections are so large. We need a multi-pronged approach, a prominent public healthcare machinery especially for the disadvantaged sections of society providing near-zero cost healthcare funded by public sources plus small mandatory contributions. We also need an enlightened, responsible and well regulated private healthcare industry.

With the NHP 2017, we have made a beginning. We need to see it through.

Critical Step in Creating Smart India: Slum development

V. V. Kulkarni

Introduction

Cities have historically been the engines of economic development and generators of wealth of nations. They are the reservoirs of skill and capital. They are hubs of agglomeration economies arising out of the constellation of people, firms and institutions. As centers for growing tertiary sector employment opportunities, they hold hopes for millions of poor searching for livelihoods. Cities are also the centers of education, culture and innovation as well as generators of public financial resources. Cities, however, have been subject to the negative consequences of urbanization and are becoming homes to scores of urban poor seeking shelter in slums and squatter settlements. In this regard, the Government's initiative for Smart Cities is path-breaking. A programme for Slum-free India through the instrument of Smart City has been announced by the Government, aimed at providing support to states that are willing to develop slum free cities by reconstructing the slums and assigning property rights to slum-dwellers. The formulation and implementation of such nationally important programme needs development of long term vision and mission along with good database on slums, urban poverty and related aspects (Kanaskar, et. al 2013).

One of India's biggest challenges today is coping with the wave of urbanisation unleashed by economic liberalisation. An estimated 160 million people have moved to the cities in the last two decades, and another 230 million are projected to move there within the next 20 years (McKinsey, 2010). Unfortunately, as any visitor to India can see for himself, its major metros are clearly finding it difficult to cope with the inflow of people. It is no surprise that India's famously poor infrastructure is critically over-strained. In response, the ill-equipped urban systems and the informal housing that

are the slums have expanded exponentially in the last few decades without proper access to basic services such as sanitation, healthcare, education, and law and order (Gupta S., et. al, 2013). While they are often teeming with entrepreneurial activity, they are nevertheless an inefficient use of the city's human resources and land.

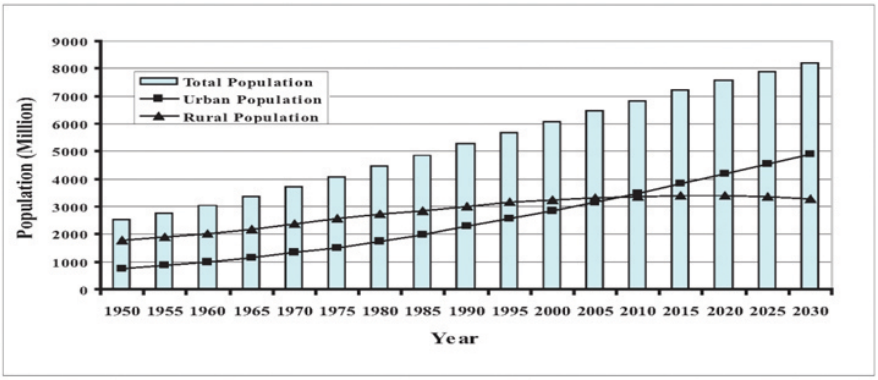
In order to explore the innate productive potentially dynamic urban population, India will need to build scalable urban systems capable of housing, caring for, employing and integrating large and increasing numbers of new inhabitants with an inclusive approach in planning and development of the cities. India is not alone in this challenge of course; Mexico, Brazil and Africa have some of the largest slums in the world. It is unclear if there are simple solutions to the problem of slums given their extraordinary organic growth rates– 70% of the world's population is expected to live in urban centres by 2050 (UN analysis 2014) – and solving the problems of the slums requires a rethink of the design of cities and their borders as well as of the role of rural areas. The challenge, like with many such difficult transformations and reformations for India, is whether it can muster the political will and concerted efforts of its stakeholders to implement the level of change required.

Urbanisation in India

Urbanization is on the rise. According to the 2011 'Revision of the World Urbanization Prospects' by the United Nations (United Nations, 2011), the global urban population has exceeded the global rural population in 2007. With a mere 13 % of the population living in cities and towns in 1900 and 29 % in 1950, the level of urbanization in the world reached 49 per cent in 2005. The number of urban dwellers increased from 220 million in 1900 to 732 million in 1950, and is estimated to have reached 3.9 billion in 2015. The unprecedented scale of urbanization can be gauged from the fact that the global urban population has quadrupled since 1950. The figure passed the 1 billion mark in 1961. It took 25 years to add another billion urbanites and just 17 years more to add a third billion. The number of urban dwellers reached 3 billion in 2003 and is projected to increase to 4 billion in 2018 and 5 billion by 2030. With an annual growth rate in urban population nearly twice as high as that projected for total population (1.8% versus almost 1%), the world will have about 60 percent of its population living in cities and towns by 2030.

India's growth over the last two decades has resulted in one of the largest human migrations in history – from the Indian countryside to its growing

Figure 1: Urban & Rural Population of the World: 1950-2030



Source: United Nations, World Urbanisation Prospects: The 2005 Revision

metros. The country's on-going industrialisation, will continue to drive the transformation and relocation of its pre-dominantly (rural) agricultural labour force into urban areas as they become industrial and service workers. The massive influx into India's urban systems has resulted in creation of massive slums with inadequate housing, sanitation, basic services and security.

The proliferation of slums

India's democracy provides free mobility to its people. Part of the freedom of India's democratic population is the apparent liberty to pursue their dreams anywhere in the country and India's aspiring population is dynamic and determined to do so. The great slums of India are predominantly created when large numbers of individuals or families move to the urban centres of their dreams, usually in search of better economic prospects. Mumbai has been the number one choice of generations of Indians for decades. These urban centres are not geared to, nor governed in a manner that can accommodate (or reject) such an influx of people. As a result, the incoming migrants find accommodation in unorganised dwellings (Kanaskar M. P., et. al. 2014).

India's slums have received global attention mainly due to what appears from the outside as poor in quality of life; but from a migrant slum-dweller's perspective, living there is an entirely rational decision based on three basic factors:

1. A higher and more stable income.
2. Social mobility for the next generation.
3. No other option.

Unfortunately, for the vast majority of migrants, slums are the only way to inhabit the city. With little available low-cost housing of decent quality near the city centre, a rural migrant would need to go well outside even the suburbs and outskirts of the city to be able to afford cost of shelter. Given the poor transport linkages to the cities, this can create a significant trade-off for the migrant in terms of the occupations that are available and their earnings potential. As a result, most are willing to compromise and make the trade-off to slum housing in the city to be closer to their place of work. Indeed, an overwhelming number of people in these slums have left their homes in the countryside in the pursuit of opportunities in urban India because of their strong aspirations. Ironically, it is the informal economy which traps many of these slum-dwellers into the vicious cycle of poverty *(Pranab Sen Committee Report 2010).*

Development phases of Indian slums

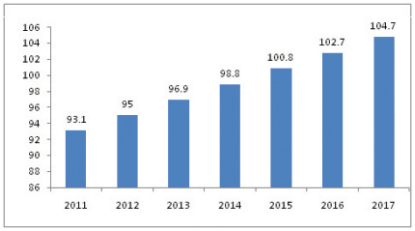
1. Initial migration and sequestering of land and other resources
2. Continuous influx in the established centres
3. Concentration and exploitation
4. Establishment of social economic and political viability
5. Survival from destruction by the government or commercial forces
6. Continuous growth through adaptation

Table 1: Projected slum population for all towns 2011 to 2017 in India (in million)

Year	2011	2012	2013	2014	2015	2016	2017
Population (million)	93.1	95.0	96.9	98.8	100.8	102.7	104.7

Source: Report of the Committee on Slum Statistics/Census, 2010

Figure 2: Projected slum population (million) for all towns 2011 to 2017 in India



Indian Slums in a Global and Historic Context

While the Indian subcontinent is home to the largest number of slum-dwellers given its large urban population (see chart), slums are of course not unique to India; there are large slum cities in developing countries across the world from Mexico City, to Rio de Janeiro's favelas, to Johannesburg's Soweto, and Jakarta to name a few.

Some examples of the best practices of world-class urban planning

1. London organised a long-term city planning – the Greater London authority maintains a 20 year metropolitan master plan with long-term planning mechanisms that forecast operation growth to prepare for long-term provision of civic amenities.

2. Singapore sufficient affordable housing stock – National Housing and Development Board which has created the housing for over 80% of the city's residents, developing with private partners affordable housing for economically weaker sections of the society.

3. Hong Kong – transparent urban land market- Hong Kong has the world's largest and fastest construction permitting rules and streamlined property registration procedures allowing for efficient and transparent development of urban land.

4. Seoul strong transportation links – the Seoul Metro subway has a daily rider ship of 7 million people covering over 600 stops and serving metro area 3 times the size of the city proper and in enabling longer range commutes that solved land scarcity issues.

5. Shanghai empowered administration – Shanghai's city is self-governing under direct central government supervision with the city's mayor being a member of Politburo comprised of the 25 most powerful leaders in the country. (UN Habitat News, 2012)

Demographic Features of Slums - An overview of World Slum Population trend

1. Around one-third of the urban population in developing countries - nearly one billion people - live in slums, according to estimates.

2. UN-Habitat estimates the world's slum population at 889 million in 2010.

3. Between 2000 and 2010, the number of slum dwellers increased by six million every year.

4. More than 70 per cent of Africa's urban population lives in slums.

5. The majority of slum dwellers in African cities are between the ages ofl5 and 24.

6. Slums are often economically vibrant; today, about 85 per cent of all new employment opportunities around the world occur in the informal economy.

7. Although there are more men than women in the workforce, women make up 60 to 80 percent of the informal workforce in developing countries (ILO).

8. More than 50 per cent of the urban population in South Asia, and 40 per cent in Sub-Saharan Africa, lack access to sanitation services.

9. There is one toilet for every 500 people in the slums of Nairobi, Kenya. (Source: UN-HABITAT State of the World's Cities Report 2010-2011)

Living conditions and situations in Slums in India –Slums world over share some common characteristics including a higher incidence of violent crime due to lack of attention from local law enforcement, a higher incidence of disease due to poor sanitation and access to healthcare facilities, the dominance of the informal economy and political bosses, and a higher incidence of child labour, prostitution, and substance abuse. Clearly, the culture of a nation or region plays a large role in determining the degree to which these factors shape the slum. The development of slums appears to be an entirely organic phenomenon which occurs when poorer countries that have under-developed urban management, governance structures and poor infrastructure undergo rapid industrialisation and urbanisation and fail to minimise the disparity of prosperity between the urban and rural population.

In that context, India's slums are perhaps the to-be-expected outcome of the rapid economic changes the country is currently undergoing. However, before classifying them as a "necessary condition" and relegating them to the list of unsolved global phenomena (and therefore not India's responsibility to address), India's leaders will need to recognise three important facts about slums unique to India:

1. **Unprecedented Scale.** No country has or is facing the issue on the scale at which India is. By 2017, India is expected to have over 100 million people living in slums[10] and another 10 million migrants moving to the cities each year. India cannot afford to pause or be complacent on urban development given the scale of this migration and in fact needs to play some 'catch-up' in scaling the infrastructure of its cities to match their populations.

2. **Political Clout Cuts Both Ways.** India's slum-dwellers are fully enfranchised and actively vote for national and local leaders who they feel will protect their interests. Slum-dwellers today know they represent a strong and highly influential vote and politicians know that delivering things of value to this constituency plays an important part in their ability to win their vote.

3. **No Control.** Some other developing countries have more effective political tools to control urban migration. However, India's democracy which assures the free movement of people throughout the country prevents any such controls from being even remotely feasible.

   While slums may be born organically, they will not disappear automatically just because cities build more houses. If the slum is a fact of modern urbanisation of

India, India's choice is to decide what is its vision for the slum of the future, the role of the slum, its design and purpose, how it will transform slums to make them assets and thereby put them on the path to transforming into being the waiting room to enter a better life. If this is to happen, the real challenge is to support the organic process of mutating slums into dynamic city sub-centres in an ever-expanding city boundary.

Strategies for Transforming India's Slums

The history of urbanisation is full of examples of cities which started off by being the hosts (willingly or not) to the economically weaker section of the population who were ultimately graduated from poor living conditions to a combination of affordable housing and basic civic amenities. The solution ultimately lies in better nations, not just better cities, which are scalable and capable of not only absorbing the inflow of people (from within or without), but in fact are economic magnets in attracting the best talent from the country. Five insights provide the basis of the solution.

1. **Firstly,** slums are a logical response to urbanisation and the relative lack of opportunity outside of major urban centres in predominantly poor countries. They are facilitated by the right to migrate. So, they are a structural phenomenon.

2. **Secondly,** slums become a system of living perpetuated by economics, politics and societal factors. Therefore, it makes sense to see them as a part of the system of a country and also the global system of trade and distribution of wealth.

3. **Thirdly,** people accept and adapt to their circumstances without (external) triggers to encourage them to do otherwise. In this sense, slums are adaptive organisms.

4. **Fourthly,** slum dwellers can improve the slum to a large extent if mobilised to do so. Therefore, they can also be developed as one would any organisational entity through the application of techniques of change management.

5. **Finally,** slum dwellers cannot transform their slum (into a non-slum) without the support of the environment around them. They lack the critical human and financial resources to make a clean break from their situation. Their transformation requires external impetus and resources. In the absence of this external intervention, they can become disenfranchised rather than citizens in-waiting and have the potential to develop a culture, set of values and behaviours that can threaten the on-slum environment they live in.

Therefore, ultimately, a comprehensive and long-term solution to the problem of India's slums cannot be about the slums themselves. A viable solution would have to take a holistic view dealing with India's larger macro challenges and recognise the critical role which cities will have to play if India is to successfully transition into a smart country. Such a solution could include the following strategies:

1. **Industrial Development and its implications.** While it was the industrial revolution which led to a wave of rapid urbanisation in the West and gave rise to slums, without the industrial revolution, the West would not have been able to afford to develop housing and infrastructure required for its growing populations. The solution to slums is not to reverse industrialisation or to try and contain urbanisation, but indeed to press forward with it more aggressively so that businesses can afford to provide jobs to slum-dwellers and pay them a proper wage.

2. **Knowledge and Freedom Advantage.** India is not fully leveraging its' 'freedom advantage' which should in theory allow for people to strive to realise their aspirations. In particular, India needs to create an open knowledge economy where the slum-dwellers are empowered to solve their own problems and have the access to financing to do so. This requires scaled charities and NGOs that can apply global best-practices to tackling India's urban issues and also raise the necessary financing.

3. **New avenue of Slum Architecture.** Lesson from other cities indicate that slums are best solved when housing is horizontal not vertical. In order to assimilate slum-dwellers into urban life, India cannot just bulldoze the slums and pile up the people into apartment blocks. A real solution would involve building high-quality, low-cost, multi-storey, diverse formats in the current areas such that these become integrated with the rest of the city. This needs the best brains in India and the world to come in and design the solutions. The slum is merely the platform for an urban re-invention.

4. **Dynamic and Sustainable Infrastructure creation.** The government needs to create a framework for gradual and continuous upgrading of slum infrastructure through innovative public-private models and by leveraging the many dynamic charities and NGOs in India. Such a model would see the slum-dwellers become the driving force of, rather than bystanders to, the improvement of their living conditions by

empowering them to identify the solution and then finance and implement it.

5. **Attention towards making smart villages and Rural Re-Visioning.** India cannot solve its slum problem by focusing on the cities alone. Any city which develops the systems to accommodate more people and create economic opportunities will attract a disproportionate number of migrants putting it under further strain unless opportunities in rural areas are sufficiently attractive relative to those in the city. Therefore a comprehensive solution would necessarily have to involve improved infrastructure, schools, employment opportunities and the overall quality of life in India's small towns and rural centres.

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Fourteenth Finance Commission a Game Changer for Gram Panchayats in India

G. Palanithurai

Introduction

India's majority, still 68% of the population lives in villages. Of the rural population 58% are relying on agriculture for their livelihood. Still rural population is afflicted with poverty, vulnerability, authoritarian tendencies, feudal mindset, patriarchy, caste hierarchy, powerlessness and it has to be transformed to enable the people to lead a decent, dignified human life with peace and harmony. Primarily the quality and standard of life has to be guided by science and technology with rationalism. Scientific temper has to be infused into the activities of the people. But in practice it is not science, technology and established procedures based on constitution that guided the communities but only the practices established by the communities in the past have been guiding the day to day activities. All transformative experiments conducted in the villages so far by the government agencies and civil society organisations have come to a conclusion that unless the poor realized that they are poor, unless the poor realized the reasons for poverty, unless the poor realized the importance of their participation in the development struggle, development of the poor or reduction of poverty are mere dole giving exercises and not transformative exercises. Hence, community driven development exercise has been advocated based on the experiences in different communities of the poor countries in the world. Against the background an amendment to the Constitution had been introduced to incorporate a governance arrangement in the rural areas and part IX of the Constitution of India unequivocally reiterates that planning exercise at the community level is an imperative step to be initiated at the village and community level. The provision of the part IX of the Constitution of India gives enormous scope for the people to take on power to decide their destiny on their own. Unfortunately the potentials of the 73rd Amendment have not been brought to the stakeholders either by the media or

by the civil society or by the political parties. In the past twenty years steps had been taken by both the centre and state governments to strengthen the local governance system in India from their own perspectives. Yet, it has not reached the desirable level of devolution of powers to the local bodies barring a few states in India. Against this background, the Fourteenth Finance Commission found out a way to strengthen the rural local governance system through its recommendations. The Fourteenth Finance Commission has made it mandatory that every Gram Panchayat has to prepare a development plan with the participation of people to claim the award of the Fourteenth Finance Commission. As a result, all the state governments have taken steps to prepare Gram Panchayat Development Plan based on the guidelines issued by the Ministry of Panchayati Raj, Government of India. Hence, decentralised participatory plan at grassroots assumes greater significance in the present context.

Context

The Fourteenth Finance Commission's recommendations to local bodies are path breaking and quantum jump in terms of resource allocation. Huge amount of money (Rs. 200292.20 crores for Gram Panchayats) flows to Gram Panchayat alone. It is unprecedented. In order to improve quality of basic services to the people and to strengthen governance, grants have been given without much restriction with more flexibility. Contrary to convention and expectation the fourteenth finance commission has recommended award only to Gram Panchayats. Because the commission felt that the Gram Panchayats are the only institutions having direct contact with the people. The direction of the finance ministry, to the state governments for utilization of the grants is yet another positive step to strengthen the Panchayati Raj system in India. In two aspects, it is path breaking. One, every Gram Panchayat has to develop a perspective participatory and development plan which is mandatory to claim the Fourteenth Finance Commission award. Second, conduct of social audit is an imperative mandated activity for every Gram Panchayat. Along with the above, Gram Panchayats are involved in implementing MGNREGA in the last one decade. Since, it is rights based the whole development activities at the grassroots are at the hands of the stakeholders. To help the panchayats in rural development activities, the central government has initiated a scheme called “Unnat Bharat Abhiyan” and by which the premier educational institutions have to be involved in rural development activities through their knowledge, skill, idea inputs and other extendable available in the academic and research institutions.

Yet another context is globalization of the economy. It has created serious implications in the life and livelihood of the poor in the rural areas. To face the challenges of globalization panchayats have to be prepared, oriented and equipped. To perform the above functions, we need more number of professionals and professional institutions. But in India, we do not have professional institutions to the needed number. It is to be noted here that in India we have professionalism at the top where policies are made and there is no such a kind of professionalism at the place where all policies, decisions and programmes are implemented.

For a scientific planning, one needs to have accurate data base for the whole Gram Panchayats. So far all the Finance Commissions both central and state indicated the fact that they could not keep exact database in the backdrop to make recommendation for the award to local bodies. They make only notional recommendations. We do not have scientific database for local bodies in India. Now for the collection of household data and village level data, National Council for Applied and Economic Research, New Delhi has sharpened the data collection tools which are readily available. That tool can be used by the Gram Panchayats. Further, for prioritization of activities, PRA techniques can be used and now it is a practiced process in every training institution and anybody can be trained in this mill within a short span of time. Here, it is to be noted that PRA is not a tool alone; it is a principle and a perspective. It will work for democratization of the society. When PRA is used frequently in the community, it will be democratised. It is the finest tool to democratise the communities. Villages and communities are organic entities which cannot be transformed through sectoral activities. To transform the communities and villages integral activities and not integrated activities are needed. There is yet another context one has to understand. Central Planning Commission has been abolished. Preparation of plan at Delhi is only in history. The Fourteenth Finance Commission has increased the resource allocation to the state governments and local governments. But along with the allocation, the federal government reiterated the fact that it is the responsibility of the state and the local governments to take care of the welfare of the people and that responsibility has to be taken by both the state and local governments. Welfare functions have been shifted to state and local governments. Economic development more precisely the growth function has to be done by the central government. All welfare activities should be carried out with the participation of the stakeholders. There is yet another context, that the state governments have also abandoned the planning at the state level barring the Government of Kerala.

State governments have done away with the preparation of state plans but they retained the machineries. They act as research and coordination centres. District Planning Committees are in position but not in action. Gram Panchayat Development Plan is the only one exercise that takes place at present only because of the conditionality attached to 14th Finance Commission award utilization procedures. Hence, it is the only planning exercise that takes place in India at the grassroots is the Gram Panchayat development plan.

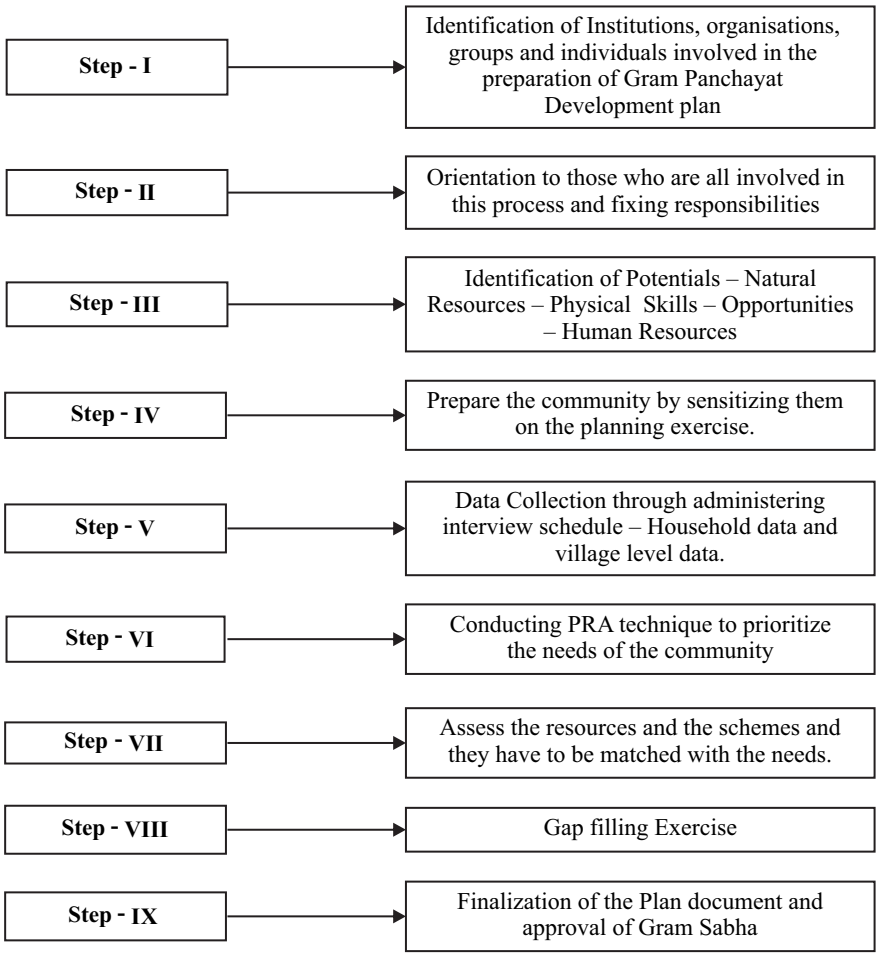
Goals of Planning

One should have clarity on the goals of the decentralised participatory planning at grassroots. There are six goals which are envisaged for this planning at the grassroots. It is not a mechanical exercise and matching the resources with the needs of the community. It is an organic exercise and visionary exercise to achieve sustainable development aiming at enabling every individual to lead a decent, dignified human life with joy and peace by adopting science and technology. Hence, to do this exercise, a guiding framework is an imperative need. This framework has been developed in the backdrop of the historic Constitutional Amendment Act. It envisages a set of goals that should be kept in the backdrop while preparing the plan at the Gram Panchayat level. They are: a, achieving economic development. Increasing agricultural productivity and transforming the rural economy. Income and savings of the households have to be increased. Skills of the people have to be enhanced. The livelihood options have to increase the economy of the rural areas; b, achieving equity is the next goal of the planning at grassroots. All the sections of the community should get the benefits and public services and goods. While doing so, priority has to be given to marginalised communities; c, achieving social justice. While providing public services and public goods, the conditions of the oppressed should be in the backdrop. Programme capture has been witnessed in the rural areas and hence a few segments in the villages are neglected in every scheme. This trend has to be changed; d, providing basic amenities and facilities to the people to lead a decent dignified productive, happy life; e, giving importance to ecology and environment as sustainability of development is the prime concern. Environmental protection, restoring ecological balance, climate change development, disaster preparedness are the key concerns should be kept in the backdrop. Hence, the whole plan preparation should be in the backdrop of ecology and environment; f, ensuring participation of all the segments of the rural community. At every stage, people's participation has to be ensured. Making the people to participate in decision making and planning is not so easy. Enabling conditions have to be created. Yet, it has to be achieved; and g, finally

integrating the activities. It should be both vertical and horizontal integration. The agencies involved in development activities are functioning in silos not in synergetic way as our administrative and governance arrangement are vertically designed from state to the field.

In this context, the plan preparation has to ensure the integration of the services to the felt needs of the people. Keeping all the goals as fundamental principles to be followed while preparing plans for development at the grassroots.

Planning Process



Impact of Decentralised Participatory Planning

From the limited exercises done by several organisations in helping the Gram Panchayats in preparing a perspective development plan what we have achieve have been explained hereunder.

It has been tested in the process of planning at grassroots that planning is possible even without much power and the cooperation of the government departments. By initiating the process the gap between the Panchayat leaders and the community is bridged. People are mobilized constantly and conscientised on social development activities. Ownership is being developed among the people for many of the development activities. In the process of interaction with Panchayat leaders and officials, Gram Sabha members have established a grip over the Panchayat administration. While the Panchayat Presidents are organizing meetings with various committee members the Panchayat administration becomes transparent and non-corrupt. Planning initiative at the grassroots involves the women and thereby women's issues have been dealt with. Slowly Panchayat leaders, Ward Members and Committee Members are sensitized towards gender issues. Committee formation is a process by which women members and representatives from the Dalit community are inducted and their participation in the meetings has created sensitiveness among all towards the issues of Dalits. Panchayat leaders have started bargaining with other representatives of the people namely, MLA, MP, Ward Members of Block Panchayats and District Panchayats. The leaders have developed bargaining capacity to deal with officials. Panchayat leaders have developed a vision for the development of the community. Panchayat leaders and the people have realized the fact that for most of the social development activities money requirement is minimum and that to accomplish the same what is needed is commitment on the part of the Panchayat leaders and the community. The District Collector and his team of officials have shown much interest in Panchayat activities as they have faith in the Panchayat's potential. Along with Panchayats, the officials also claim credit in achieving the target of all development activities. Without the cooperation of the Panchayats and the community, officials cannot achieve the target successfully and hence they now bank on the Panchayats. Further the quality of the works carried out by the Panchayats with the participation of the people is good compared to the work of the contractors. Each and every Panchayat is having a plan document which is regarded as its pride.

By developing a plan document at the village level, indirectly a compulsion has been placed on the sectoral departments to work in the villages with their allocation of resources restricted to the activities indicated in the plan document of the respective Gram Panchayats.

Opportunities

Huge money is available for planning only now as the central government has reduced the schemes and increased the allocation to states and local bodies without much stipulation. The Fourteenth Finance Commission recommendation is a game changer. It establishes and envisages an alternative paradigm of governance. India has never witnessed such a kind of resource allocation for local bodies as we find now. It has been made as a mandate to prepare plan for every gram panchayat to claim the Fourteenth Finance Commission's award. Thereby states are being compelled to take initiatives to prepare decentralized plan at grassroots.

Further, there is the new scheme "Unnat Bharat Abhiyan" by which higher learning institutions have to transfer the knowledge, ideas, skills, and technologies to the villages with an aim of improving the standard of life. Huge social capital is available at the community level and those can be used very effectively for the preparation of development plan. There is an opportunity to do a massive mobilization of people for development participation.

MGNREGA is yet another major economic activity taking place in the villages with the administration of village panchayats. For the execution of MGNREGA, village panchayats have prepared projects with the participation of people in Gram Sabha. For effective implementation of the MGNREGA, a well integrated coordination of institutions is necessary. This could be achieved through preparing a decentralized participative planning. We have training institutions with adequate infrastructure in every state. We have adequate financial resources for training the panchayat functionaries. All the facilities and opportunities could be used profitably for the people.

It is a good opportunity to make the higher learning institutions to realize their academic social responsibility to work with the communities for the benefit of both. We have 745 universities, 39000 colleges, 11000 research institutions; and 8 million post graduate students are readily available for community work. But there is no proper orientation for them to work with communities. In India, our academics and students are weak in application. Now this weakness can be plugged by making these institutions work with the villages to prepare the plan document.

Challenges

All opportunities will come in the form of challenges and the challenges have to be responded to effectively and organically. Preparing the people in the rural areas to evolve a development plan is not an easy exercise. It requires vision, strategy and commitment on the part of the leadership. People have been thoroughly oriented either as beneficiaries or petitioners. They are all not oriented to behave as development participants. Further, people in the rural areas are struggling only for their livelihood and turning them to public service will require thorough preparation and sensitization.

It is a massive task before the nation. When the decentralised planning exercise was done in Kerala, a massive campaign was undertaken. Subsequently in the entire planning process for about ten years, massive training and awareness activities were continuously carried out and as a result people have been prepared and technically skilled persons have emerged from those exercises. Now, Kerala is sending to many other states skilled persons for GPDP exercises. Where is such cadre in other states? This is a challenge to be overcome.

Since it is a participatory planning, it has to involve the people in the plan preparation process and for which people have to be sensitized on a large scale and for which media have to be oriented and sensitized. We acquire huge human power to perform the professional task. At present, we have State Institute of Rural Development in every state with facilities and staff. The institutes are fully funded for training activities. Yet, barring one or two all others are not emerging as distinct training institutions in real terms. Barring a few all the training institutions are not having needed number of trainers with capacity. Capacitating the State Institute of Rural Development is a big challenge. Similarly, preparing the academic and research institutions to work with the community is yet another tough task.

There is no guide book and administrative manual for the general administration of the panchayats. Unless they are being prepared and disseminated to the main stakeholders, the whole management of panchayat institutions would be problematic. In the state higher level bureaucracy is not bothered to plug this weakness. Against this background, the planning exercises have to be done.

Conclusion

Even after twenty years of decentralization exercises done in this country, the core function of the Constitutional Amendments has not been fulfilled. Achieving economic development and social justice are the two mandatory responsibilities that have been fixed for the local bodies. But these

functions have not been performed by the local bodies barring Kerala in the last twenty years. Even in Kerala, the economic development functions have not been achieved. Local economic development cannot be achieved through implementation of schemes and programmes. It could be achieved through the economic activities initiated by the people through the planning exercises with the backing of financial institutions and knowledge institutions. Economic development and poverty reduction cannot be achieved without a proper planning. But now because of the 14th Finance Commission the local bodies gained a new lease of life for strengthening their base. Since it has been made mandatory on the part of the panchayats, planning exercises have to be done through a massive mobilization of people and their participation. But to do the above, the local bodies have to face a volley of challenges. All these challenges have to be faced by preparing the institutions and organisations to build the capacity of the rural local body leaders. To use this new opportunity, professionals and professional institutions have to be prepared and oriented. Crucially the higher learning institutions have to prepare themselves for community activities and for which they have to be oriented and sensitized. At policy level, in Unnat Bharat Abhiyan, all higher learning institutions have to be involved and for which a proper policy framework has to be evolved.

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Determinants of Urban Form in the Evolution of Settlements

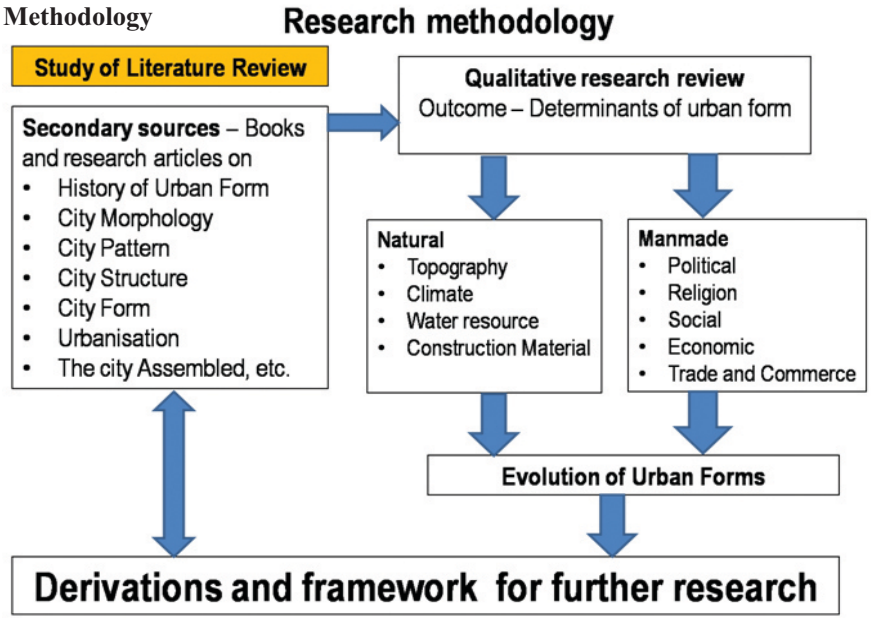
Sakshi Sahni,
Karamjit Singh Chahal

Introduction

Urbanform includes studying about human settlements, the process of their formation and transformation in order to know the spatial structure, nature or character of an area, city, town or village by investigating the patterns of its component parts and the process of its development (Wikipedia).

The period of formation, evolution and shape of towns is reflected from morphological range of cities and towns

Methodology



(Morris, 1994). The cities or towns may have been developed through the ancient times, Middle Ages etc. (ibid). For example, Erbil, in Iraq, developed in ancient times had experienced the early civilization, and cities such as the Greek cities, cities in Rome empire time, medieval towns, or cities developed in Renaissance time emerged at various time periods (Morris, 1994). There are various forces or factors which are responsible for making of acity mainly categorized into two types: manmade and natural. Various authors stated forces responsible for emergence of different towns or cities. The objective of this article is to identify the various determinants or factors for evolution of urban forms e.g. grid iron, radial, concentric and organic. These have been determined by study of database and through literature review from secondary sources like books, research articles etc. No primary survey has been done for the research article.

Literature Review

As Gallion states, there are natural factors like- topography whether steep or flat, climatic conditions like dry, hot, humid, composite; as well as resources like fertile soils, which are responsible for creation of any urban form or settlement (Gallion,1998). He discusses importance of water as a major resource, i.e. presence of river, canal or tank from where the settlement originates. Another factor discussed by Gallion is accessibility to other important places or transport terminals which are cross points for networks of internal transportation. These two factors are important for the evolution of settlement (Gallion,1998).

Morris classifies urban form determinants into two classes. i.e. natural factors consisting of climate, topography; locally available construction material, water. He states

Table 1: Derived Determinants of Urban Form

Author	**Gallion**	**AEJ Morris**	**Kevin Lynch**
Books	The Urban pattern	History of urban form before industrial revolution	Good city Form
Determinants			
Natural	*Topography*	*Topography*	*Topography*
	Water resources	*Water resources*	*Water resources*
	Climate	*Climate*	
	Available construction material	*Construction material*	
Man made	*Political Organization*	*Political power*	*Political structure*
	Economic	*Economic*	*Economic*
	Social	*Social power*	
	-	*Trade*	*Trade*
	Transport Terminal	-	-
	Religion	-	-

each of these determinants help in shaping the urban form like organic and planned. Morris has also described man made determinants which include trade, political, social, religion and economic while as Gallion also includes these factors by stating that rise of both political and social organization has improved economic security and corrected social adjustment. Growth and development of city was the result of political, social and economic organization. Therefore, in the literature review numerous authors have been studied and mainly three authors, Gallion, Morris and Lynch discuss about similar determinants mentioned in Table 1. A review of various authors was done through qualitative research and the common themes that were derived for studying the determinants of urban form. It has been found that some indicators like available construction material, trade, religion and transport material has not been mentioned by various authors.

Natural Determinants and their impacts

a) Topography

Morris discusses topography is terrain on which settlement becomes established like hilltop or prairie grassland. This can depict the direction of growth either on sea side like Mumbai or river bank like Banaras or Varanasi on the banks of River Ganga. Even Ramachandran states that topography is important as Nasik is on bank of River Godavari. There are certain cities developing on the ridge top or valleys like Shillongor Shimla on the valley (Morris1994, Ramchandran, 1989).

Impact of Topography on urban form

In order to study the impact of topography on urban form various journals and books have been referred. According to Telbisz Tamas and Bottlik Zsolt, topography has great impact on settlement. Settlement decreases linearly with elevation. Abandoned settlements of Serbia show that topographic conditions significantly contribute to the decline of the settlement. The settlement will always be sparsely populated in uneven rocky terrain or at steep slopes. Some of the examples that can be recalled are Leh Ladakh in India where the population density is less due to mountainous and difficult topographic conditions. If the land is fertile as in the plains of Punjab, the chances are of high population density. Therefore, density decreases with elevation and it increases with lower elevations. Therefore, topography is an important factor deciding the urban form.

b) Climate

Climate is another factor described by Morris determining the type of housing like in case of Ur in

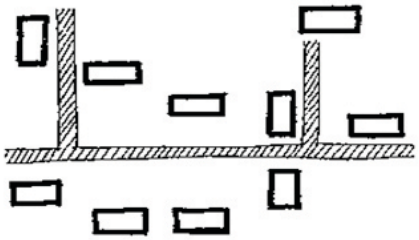
Mesopotamian civilization where the concept of courtyard houses existed. The shelter is a fundamental need taking different forms depending on local climatic conditions. Morris has given example of traditional houses constructed on several storeys are provided screened bay windows opening to public streets (Morris, 1994). One example in the Indian context is the case of walled city of Amritsar where balconies open in narrow windy lanes. Similar is the case of Jaisalmer in Rajasthan where windows or jharokhas (balconies) are provided to tap winds from the narrow streets.

Figure 1: Settlement for hot dry climate

Impact of Climate on Urban Form

In case of hot dry climate, compact settlements with narrow streets and dead ends will create funnel effect for wind direction. The settlements in warm humid areas will have scattered buildings with vegetation to provide shade without hindering natural ventilation. (Refer figures 1&2)

Figure 2: Settlement for hot dry climate



The resultant organic form as described by Koeinsberger in hot dry climate would be enclosed, compactly planned and the buildings will be inwardly looking. The traditional shelter will consist of heavy wall of earth, mud, brick or stone e.g. Nigeria, Jaisalmer, Amritsar, Shahjahanabad, Rajasthan. The dead ends will be formed with narrow windy streets, surprising open spaces will be one element and the shape of town will be organic in this type of climate with

development intensity maximum at the center. In warm humid climate, open elongated shape will be found with sparse population, greater distances with non clustered forms with wide streets in order to have more wind movement. In composite climate, moderately compact internal planning with courtyard type buildings and houses with separate day and night room e.g. Punjab, Hyderabad. In cold climate grid iron form geometric in nature with more travel distances and clear vistas and vast space expanse and wider roads are prevalent.

c) Available Construction Material

Morris states that locally available construction material either burnt brick or clay is used. Timber or stone may also be used. The example of use of local materials include, marble in Mecca or masonry stone work, timber (Ibid). Local materials e.g. the Mesopotamian mud brick was used in Mesopotamia civilization. Stone was used in Makah and use of marble can be seen in Greek civilization. Masonry stone work was used in European cathedrals which determined the availability of local construction material.

Impact of Available Construction Material

Impact and role of construction material in urban form can be seen in places like Jaisalmer where locally available construction material is sandstone, Nanakshahi bricks in case of Punjab, bamboo near the forest areas or in the north eastern states. Traditional materials and techniques were used which limited the height of walls, width of openings, clear span of floors and roofs which determine the human scale (Morris,1994).

d) Water Resources availability

Availability of Water Resources near the settlements is evident. For example all the ancient civilizations grew on the banks of rivers. The examples are Egyptian civilization on the banks of the Nile River, Mesopotamian civilization on the banks of the Tigris and Euphrates, Mohenjo-Daro and Harappa on the banks of the Indus and Ravi and in case of China, on Huwang Ho River.

Availability of water in static form like ponds and wells is another important factor and dynamic nature of water like rivers in case of all ancient civilizations mentioned above has helped in developing the settlement and is responsible for their growth.

Impact of Water Body

As stated above and in the literature review as well, all the earliest settlements were located near springs and other bodies of water. In Egypt, there are traces of wells and in Mesopotamia, there are stone water

channels. In Mohenjo-Daro, ancient wells as well as water pipelines have been discovered. Ground water springs and wells were the major sources of water. Apart from this, all the ancient civilizations were located on the banks of navigable river which was later used for trade as well. In the Indian context, cities like Mumbai along the sea have developed as linear city due to presence of sea. Also, Varanasi has developed along the river banks where many famous Ghats are located. There are settlements or cities like Fatehpur Sikri which failed due to non availability of water.

Man made Determinants

a) Political Power

Political power was important as city acted as a military base and later ballot box power base was concentrated here. Cities are embodied by the citadels, castles and palaces of past ruling elites. Cities arise due to political means which were employed to convey food surpluses into authoritarian hands (Gallion, 1998, Morris, 1994, Lynch,1984).

Impact of Political Power

According to Gallion, agriculture surplus and domestication of animals led to village formation. The most powerful became the tribal leader. Several villages came under the domination of victorious tribe's leader. Rising power of the leader led to the creation of empires. Rulers took title of King and Emperor (Gallion, 1998). During Medieval period, a barbaric ruler would commit all the atrocities in the kingdom. Land was parceled to lords & military support pledged. Wars were among various feudal lords. Also higher tax collection was among feudal lords. Hence, this resulted in rise of mercantile class (Gallion,1998).

Characteristics of medieval cities were:

1. **Wall –** the purpose of wall was protection against enemies or attacks. It also acted as a point of toll collection from the gate (Kostof). The gates of the wall acted as entry and exit points. The gates were closed during night for security reasons (Ramachandran). Spiro Kostof states that defensive walls acted as an urban edge entailing a brief history of military. In some countries like England and Japan, the sea acted as its wall and moat could be 9m or 30 feet wide with addition of water turning ditch into moats (Kostof). Gallion also states that there was communal existence within protective walls of cities and towns therefore, heavier walls were constructed (Gallion, 1998). Unity and strength was demonstrated by horizontal environment of encircling walls (ibid). Castle was surrounded by its own wall as a final protection from the enemy (ibid).

2. **Street pattern** – Medieval cities had zigzag street pattern to confuse the enemies or invaders. The streets were narrow and congested. The major roads were wide in order to allow processions and were also regarded as commercial arteries (Kiyo Lizuka). There were roads radiating from the Church plaza and market square to the gates with secondary or lateral roadway (Gallion, 1998).

3. **Market Place** – Specialized markets with special bazaars and trades. Kiyo Lizuka states that city population settled by ethnic affiliations which formed districts or wards knowns as mahallas and katras. These units were homogenous and carried out cultural as well as socio-economic activities.

4. **Cathedral** – Church dominated the city. It showed and displayed the wealth of the Church and the power it held. The Church was an institution in which all people could participate giving inspiration and adding a measure of beauty to existence of people. Churches established hospitals where the sick received care.

5. **Charter** – For citizens made by king to abide by the ruler. Those who did not follow the charter were denied water.

6. **Fortress** – For the king or ruler where they resided. In all Mughal capitals and cities forts for the ruler were made and huge amount of money was spent on it in order to showcase wealth.

Evolution of Organic Form

The resultant urban form from all the above factors during medieval city was organic. As a result of political power and cooperation, organic form evolved. It was like a living cell with each cell performing a different function, therefore each developing into a heterogeneous community, this later developed into various bazaars and markets, with specialized trade in each cell. There was a mix of diverse people. Like a living cell where each has its own centre and each cell was linked together (Lynch).

Military Supremacy

City acted as a military base in the later medieval times where power base was embodied by the citadels, castles and palaces of past ruling elites (Gallion, 1998). Power was expressed by boundaries and gates, a parade route, a dominant landmark, the use of elevation or size and bilateral symmetry of regular order. Capital cities were formed with monumentalaxis, an example of which is Lutyens New Delhi.

Later Medieval

The military supremacy led to the emergence of Grid Iron form in later Medieval Period. Grid Iron Plan was the outcome of military necessity, capitalist expediency and religious symbolism (Crawford). Aesthetics was given importance in these cities. In later period, more important streets tend to converge on central square, where the city hall, principal church and market may still be found (Gallion,1998).

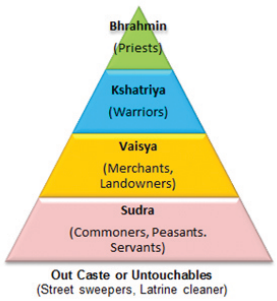
b) Social Power

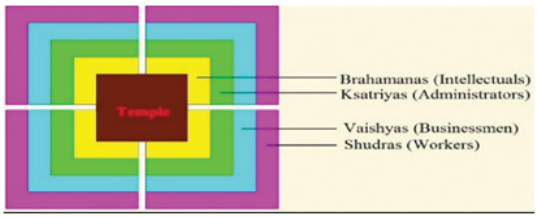
Kevin Lynch in his book Good city form states that kings or rulers, traders, artisans class arise as a result of political power. There was social segregation on the basis of caste. Lynch argues that relative equality of village was controlled to a stratified society one which shifts its principal social relations from kin to class. Social pyramid ran up from slave and peasants through overseers and militia to state officials and priests and ownership of land to them. Border wars between city and states led to permanent war leaders, specialized armies and continuous hostility (Lynch,1984).

Impact of advanced Social Structure

There were valiant visual changes. Temples and other structures of ruling group became everlasting. Incredible amounts of energy were used to produce great edifices, palaces, cathedral, source of pride to public and seat of power (Gallion, 1998). Social system arose during this time. There was segregation on the basis of class and caste system. King occupied the uppermost seat followed by the priestly class. Priests were followed by Kshatriyas or warriors class followed by Vaishayas or business class. The last class was Shudras or untouchables. The impact of the social structure led to the formation of plans of town on class basis. One such example is Madurai City in India.

Town Planning In India According To Social Structure

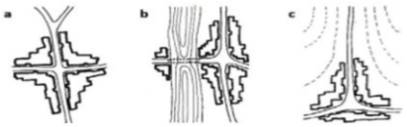




Economy

Economy was primarily based on farming and trading. When there was abundant food supply and agricultural surplus, new class of economic structure evolved during the medieval times. It was the merchant class with various craft guilds, weavers, leather workers and carpenters. As a result of this trade evolved. Trade was at different locations. There were different locational determinants stated by Morris which are as follows: A) Land route crossings where trade could take place, B) Intersection of land and water routes, C) At entrances to mountain passes.

Figure 3 : Locational determinants



Source: Morris, 1994

c) Trade

Economic Power resulting into trade between various civilizations. Trade links were there through land and sea for exchange of goods and spices. City became a market place where space was required for conducting sale of goods. As per Morris, in Islamic city main purpose of market square was to provide for temporary stalls of traveling salesman and merchants. Products being made or finished by individual craftsmen employing few assistants (Morris, 1994). Kevin Lynch states that cities became warehouses and break points in trade or as fortified centers of war or as administrative centers for managing complex and centralized public works like irrigation system. Organized trade between Syria and Indus valley existed (Lynch).

d) Religion

City became a devotional centre, and was expressed through large buildings, In addition there were Cathedrals, Churches, Temples and Shrines for devotional ceremonies and the Church was the largest landowner.

Impact of Religious Symbolism

Religion played an important role in these cities. All the religious temples were either located on the hilltop or at the supreme position in the city in order to depict religious supremacy. King was the head of the religion, as well as the government. Each city-state had its own chief deity.

a) Sumerian city with Ziggurat at Ur. The Ziggurat was a piece in a temple complex that served as an administrative center for the city, and which was a shrine of the moon God Nanna, the patron deity of Ur.

b) Harappan city with its Citadel - This area of the city was built on top of a mound of bricks almost 12 metres high. A large staircase ran up the side of this mound. Several large buildings and structures on the Citadel mound suggest that this area may have been used for public gatherings, religious activities or important administrative activities (ibid). In the second century B.C. a stupa was built on the top of this mound (ibid).

c) Ancient Greek city with temple on its Acropolis at Athens - Greeks built their important temples here and where the people could retreat to if under attack. The Acropolis is primarily dedicated to the Goddess Athena.

Nexus of social, economic and political transformation resulted in materialization of various urban forms. Kevin Lynch in his book 'Good City Form' states "there are impersonal forces like fire, flood and earthquake for any city formation". He states that "first cities were of heterogeneous people with dense settlement. The cities and civilizations appeared with stratified society, unequal ownership".

Conclusion

From the above factors, we have tried to determine various urban forms for various natural and manmade factors. All the above factors have played an important role in determining the shape or urban form of a settlement. As Morris said the various time periods helped making the urban form with the support of various natural and manmade factors. The Linear urban form was the result of sea and river. In flat terrain, grid iron form was the resultant urban form. In water resources the shape of the town was depicted by the bank of river, although Mohenjo-Daro Harappa are considered to have grid iron form. Climate also governed the urban form as in compact city form or organic form in the case of hot dry and humid climate. Political power was the surge between oppression and justice and acquired both organic and grid iron form during different time periods. The social class segregation gave a grid iron form to the urban form. The economic factor with farming and specialized markets and trade gave the organic form while religion was another dominant factor where the social control was important and resultant urban form was both organic and grid iron.

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Articles could normally be between 3000 and 4000 words, though we do not wish to limit the size. As we print in black and white, tables, charts, graphs, images, etc. need to be compatible. We reserve the right to edit for sense, style and space.

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Municipal Solid Waste Management in Globalizing India; The Case of Amritsar City

Kiran Sandhu

Introduction

Regardless of the existence of legal rules and regulations framed by the Government from time to time and also some commendable initiatives taken by some Urban Local Bodies (ULBs), Non-Government Organizations (NGOs) and individuals, the Indian waste management scene continues to be extremely bleak. As per estimates (CPCB, 2004 and FICCI, 2005) Urban India currently produces about 36.5 million tones of waste and this figure is expected to touch 300 million tonnes given the modern spate in the spending patterns and materialistic lifestyles due to globalization out falls which has accelerated the per capita consumption and consequently higher rate of waste generation in our towns and cities. From a current per capita rate of 490 grams this is expected to touch 945 grams by 2047. Modern urban living in the globalizing third world cities has indeed brought on the problem of waste which is increasing in quantity and changes in composition with every passing day.

However the waste collection and disposal mechanisms of the Urban Local Bodies continue to be equally alarming. Given the current state of affairs it is estimated that only between 30-60% (Rousse, 2006) of the municipal solid waste generated in Indian cities is actually collected and disposed of by the ULBs. Another study (Medina, et. al, 2002) mentions a collection rate of just 50% in urban India. Out of this collected waste only a fraction i.e., 7% is recycled through composting or waste to energy (WTE) measures and the rest 93% inclusive of the recyclable dry waste finds its way into the dumping sites where it is then rummaged by the informal waste collectors and random and low rate recycling activity takes place as an informal sector initiative. The Indian cities now generate 8 times more solid waste than they used to in 1947. Generation of waste per capita increases from 1 to 1.33 % per year and the quantities of plastic matter are now 70 times higher than in the 1960s. Annual

increase in waste generation is estimated around 5%. About 5-25% of the Municipal Corporation budgets are being spent on solid waste management wherein a city of 1 million spends Rs 10 crores annually. Societal and management apathy and lack of implementation of Municipal Solid Waste (Management and Handling) Rules 2000 have compounded the problems of municipal solid waste (MSW) management in urban India. More than 90% of the solid waste is disposed of indiscriminately in unsanitary and poorly located landfills.

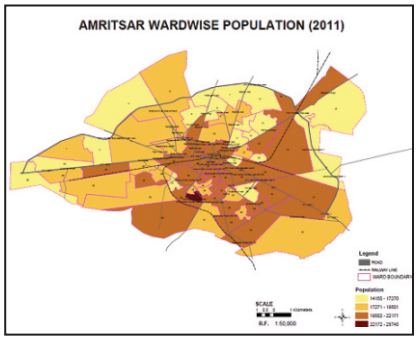
Ad hoc applications of technologies such as incineration of solid waste and other western imported methods that are unsuitable to the Indian context have caused huge fiscal losses to the municipalities. Collection of solid waste by the informal sector is estimated at 15-20% and an estimated 1 million urban poor work in informal waste management sector. However the Municipal Solid Waste (Management and Handling) Rules 2000 and other solid waste management initiatives have sidelined the informal sector. As such all solid waste management proposals entirely ignore the informal waste management mechanisms. For instance the Municipal Solid Waste (Management and Handling) Rules 2000 that provide a framework for the ULBs for waste management, while highlighting the importance of waste recycling and directing the ULB to undertake the same by involving people in at-source segregation, fails to mention or direct the ULB to integrate or work in partnership with the informal waste management sector to ensure a higher rate of waste collection and recycling in pursuit of the broader objective of zero waste and healthy cities. There have been some isolated cases wherein the NGOs are playing an important role in getting the services of the ragpickers recognized and working towards their upliftment within the same occupational sector. However it is observed that these commendable initiatives to recognize and integrate the informal waste managing sector are extremely few.

Municipal Solid Waste Management in Amritsar City

Amritsar is the second largest city in Punjab and plays a multidimensional role including that of the political capital, being at the centre stage of the Sikh religion. Amritsar has risen to be the second metropolis in Punjab with a population of 1,132,761 as per Census of India (2011). Being the seat of the Sikh religion and owing to the location of the golden temple here, the city attracts tourists from all over the globe. The city of Amritsar generates between 650-700 tonnes of waste daily. Though the Municipal Corporation claims to collect at least 80% of the waste, this does not appear at all to be the case considering the current state of waste

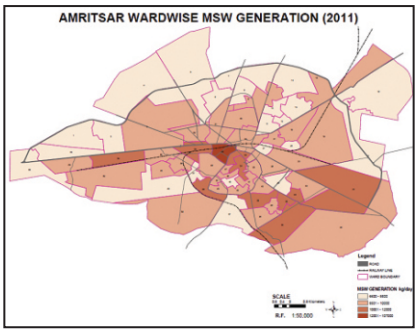
management in the city. The overall management of the solid waste management service is the responsibility of the Medical Officer of Health of the Amritsar Municipal Corporation (AMC). The service is managed by the Medical Officer of Health, assisted by the Assistant Medical Officer of Health. There are 2400 sanitary workers in Amritsar (1443 engaged by AMC and 957 through Mohalla Sudhar Committees), 51 drivers, 24 Sanitary Inspectors, 20 Sanitary Zamadaars (head of sanitary workers), 7 Naib Darogas (a post to supervise functioning of sanitary zamadaars and sanitary workers) and 4 Chief Sanitary Inspectors).

Figure 1: Amritsar Ward-wise Population (2011)



At a local level there were 235 Mohalla Sudhar Committees (like a locality development committee) within the city, representing specific localities. Under a set of guidelines, the committees took up the responsibility of house-to-house collection of solid waste by engaging and supervising a limited number of safai sevaks (sanitary workers). Payment for the engaged safai sevak(s) was 50% made by AMC and the remaining 50% by the Mohalla Sudhar Committee, who in turn collect it from local public. The Mohalla Sudhar Committees were disbanded in 2011 after the City Municipal Corporation roped in a private sector company to manage the city's waste. However the privatized operations did not last long and the contract was terminated in August 2012.

Figure 2: Amritsar Wardwise MSW generation



From the Table 1 it is observed that the organic waste is highest in the city. The waste has 55% moisture content and a calorific value of 1500 kcal[1]/kg. The households and commercial establishments do not practice segregation of waste at source. The AMC has placed about 125 metallic dustbins of 4.5 cu. m size and 10 bins of 10.0 cu. m. size for the temporary storage of waste for collection by the

[1]*Kcal refers to kilocalories.*

sanitary workers as well as for the citizens to deposit their domestic waste. However there is a shortage of bins and therefore in many places waste is thrown informally in vacant plots and roadsides. In some parts of the city house-to-house collection arrangements of unsegregated waste are effected by around 250 Rikshaw Rehris, a tricycle having back space as a storage bin. The principal reasons for using Rikshaw Rehris is that they are cheap to operate, readily available and easy to manoeuvre in the narrow lanes.

Table 1: MSW Composition

Composition	**Content** (%)
Bio degradable Waste	55
Paper	5
Plastic	1.5
Metal	0.5
Glass	1
Woody waste (barks, twigs, furniture waste)	4
Inert debris (building material waste)	25
Industrial waste (from household industries within MC limits)	8
Total	100

Source; Municipal Corporation Amritsar

For transportation of waste from the city, AMC uses 56 tractor-trailers, 7 mini trucks (about 4-5 ton capacity) and 3 large size (about 10 ton capacity) trucks. These vehicles are used for the primary collection of waste from the community bins and its onward transport to the designated landfill site. The additional equipment (Front-end Loaders) are also used for loading waste into trailers. This is done by lifting the storage bins and emptying them into the tractor trailer for transportation. No transportation is done on Sundays and public holidays, Backlog is therefore created and cleared on the day following the holidays.

AMC does not carry out any pre-treatment of the waste except direct dumping of waste at the dumping site at Bhagatawala measuring 8.1 hectares which has reached its capacity but waste continues to be dumped there. There are eight sanitary workers to manage the landfill site located outside Bhagatawala gate. They work in one shift of eight hours and they assist in

tipping the solid waste from the vehicles at an appropriate location and then spread the solid waste to avoid large heaps, etc. In addition there are twenty six dumping sites where waste is dumped without authorization. The Bhagatawala landfill and most of the other sites are located in close proximity to residential areas as well as the District grain market, posing to be a major health hazard. This landfill is about two kilometres from the city centre and is now surrounded by informal residential development on three sides with a population of above 50,000.

Issues with current municipal solid waste management practices

1. Segregation of recyclable waste at source is not practiced in the city. Storage of waste at source is not fully taking place as people prefer to dispose the waste as and where it is generated.

2. Except for a small part of the city, there is no proper system of door-to-door collection of waste. Community bin facility given to the citizens is not efficient for depositing the waste. In absence of the facility of doorstep collection and inadequacy and in appropriateness of community bins for the deposition of waste, people throw the waste on the vacant spaces, streets and drains.

3. The bins and larger storage containers are open and invite stray animals and lead to further unhygienic conditions.

4. No arrangement of primary collection of hotel and restaurant waste is made. Hotels and restaurants therefore, dispose of their waste on the streets or into the municipal bins that are usually overflowing.

5. Vegetable, fruit, meat and fish markets do not have adequate waste storage containers with the result the market waste is thrown in open space causing unhygienic conditions in and around the markets.

6. Atleast 30% of the city population resides in slums and these areas have no collection or storage facility.

7. The transportation of waste is done in open trucks and open tractor trolleys causing nuisance to the citizens and contributing to environmental degradation.

8. The city does not have a sanitary landfill. The waste generated in the city is presently being disposed of in an unscientific manner in an open dumping ground and other unauthorized disposal sites that are in vicinity of residential areas.

9. Despite the existence of legislation, Solid Waste (Management and Handling) Rules, 2000 that makes provision for municipalities to deal effectively with solid waste issues, the AMC has not taken any of its provision into account and continues to deal with the issue of solid waste in a most unscientific manner.

10. No effort by the AMC has been made to initiate composting, recycling or any other useful ways to deal with the solid waste.

11. Recent move towards new technologies has been made by the AMC wanting to use Waste to Energy possibilities such as incineration or Refuse derived fuel for managing the city waste and generating power from garbage. However this is a move without examining the issues involved. The moisture content of the waste is high and the calorie value of 1500 kcal/kg means that auxiliary fuels would have to be used. This does not seem to be the viable option for waste management in the city.

Informal Waste Management Practices in the City

Though there is no formal count available, based upon information gathered from surveys it is estimated that there are anywhere between 2500-3000 ragpickers engaged in informal waste collection and recycling operations in the city and more than 5000 people find employment in the informal waste management sector in the city as itinerant waste buyers (kabadiwala). It can indeed be visualized that in the absence of these ragpickers our city would present a much more dismal scene then it already does with piles of waste littered around given the apathy or rather the inefficiency of AMC responsible for waste management in the city. Based upon a primary survey of informal operation and the ragpicker community in particular in the city the following conclusions are drawn;

1. All recycling in Amritsar city is undertaken by the informal sector. This sector includes ragpickers, small middlemen, larger middlemen and finally, the reprocessors.

2. This sector is arranged in a table top pyramid with ragpickers at the bottom of the pyramid and forming the backbone of waste collection. Next are the small middlemen, (kabadiwalas) who buy the waste from these ragpickers and sell it to larger middlemen who deal with specific items and materials who then supply waste to the recycling units. There is also an informal operation where the kabadiwala

buys directly from a household by paying a small amount for the recyclable waste.

3. 98% of the ragpickers come from West Bengal and from Murshidabad district in particular and have been in the city since 1 year to a maximum of 32 years. The ragpicker household comprise of an average of 7 persons. 97% of the economically active members of the community were engaged in ragpicking. A majority come into this occupation to avoid chronic poverty.

4. The waste operations by the ragpickers start early dawn and continue till late night with all members of the household participating in either collecting or sorting the waste. On an average a ragpicker spends about 10-12 hours looking for and filtering waste.

5. There is a territorial route demarcation by the ragpicking community in some parts of the city while in other parts there is no such thing.

6. The waste is collected from various sources; landfill, dumping sites, garbage cans, AMC containers and also directly from the households. It is then filtered through manually in the areas where the ragpickers stay. The waste must be sizeable for the ragpickers to sell it to the middleman, for example less than 2-4 kilograms (kgs) at a time is not acceptable so the quantity must be reached and sometimes this takes the ragpicking household 3-5 days.

7. The ragpickers collect items based upon its recyclable demand. Atleast 20 items including plastics, paper, iron, cloth, animal bones and leather are collected by them.

8. The ragpickers are economically exploited by the scrap dealers and middlemen who give them a pittance amount but they sell the material at a higher rate to the wholesale dealers and recycling units. The large wholesale dealers and factories did not accept directly from them since they did not accept below fifty kg of each type of waste and to collect this amount may take a ragpicker household up to two weeks or more. Currently they sell the material to smaller scrap dealers and are paid Rs1.50/kg for plastic bags, Rs 8/kg for other plastic waste, Rs 6-10/kg for iron waste, Rs 2-3/kg of paper waste, whereas the dealers sell them further for at least three-five times the price given to the ragpickers. The other reason for the low price is also the

quality of the material which gets deteriorated due to non segregation of the waste by the waste disposing households.

9. In matters of solid waste management in the city, the contribution of the informal sector is totally overlooked and no effort has been made by the AMC to utilize the potential of this sector. Rather the ragpickers are the most vulnerable socially, are harassed by the police and the municipal workers and treated as a menace rather than as an advantage.

Table 2: Assessment of technological options

Option	Merit	Demerit	Cost	Land requirement
Incineration based Waste to Energy (WTE)	Weight reduction 75% Volume reduction 90%	30% additional cost due to air pollution. Organic waste unsuited.	40 crores / 300 tons capacity	1 hectare
Refuse derived fuel (RDF)/ Pelletization	Weight reduction 75% Volume reduction 90%	Moisture content renders it unsuitable	22 crores	4 hectares
Bio-Methanation	Recovery of gas and compost. No release of green house gases.	Unsuitable for inorganic matter. Low quality of compost.	15 crores	2 hectare
Sanitary landfills	Suitable with sizeable waste reduction	Large land requirement. Problems with gas collection/leachate	45 crores excluding gas recovery equipment	36 hectares 7metres depth,15 years lifespan
Composting units	Good for processing organics	Market and quality issues	5 crores/ 300 tons capacity	4 hectares
Recycling	Reduction in inert wastes	cumbersome	----	.-------

Solid Waste Management Options for Amritsar City

Having broadly taken an overview of the formal and the informal sector, the following write up analyses the major options for solid waste management for the city.

1. Incineration based waste to energy technology: Experience with the incinerator based technologies has not proved to be successful in other cities where they have been applied. The waste in Amritsar city has a high moisture and organic content and is not suitable for incineration based technologies. The AMC would have to incur a huge capital investment and maintenance cost to run this technology if applied.

2. Anaerobic Digestion/Bio methanation: While this could be a better option than the incineration, it is still more capital intensive compared to composting and landfill and not suitable for mixed wastes.

3. Sanitary Landfill: Relying only on a sanitary landfill for the city also does not seem to be a good option especially since this is going to be expensive as there are high initial costs for design and construction. However if the final amount to be disposed into a landfill could be significantly reduced and also because of the benefits it has over conventional dumping, a sanitary landfill might become a viable option.

4. Pelletization: Pelletization or refuse derived fuel (RDF) also does not seem to be a very useful option especially since the processing unit may not be operated during the rainy season, as the garbage will be too wet. Also the high moisture content of the waste will increase the cost of drying.

5. Composting technologies: Since the organic component of the waste generated in the city is high, this is a viable option. In vessel composting though advantageous would be an expensive preposition. Windrow composting is the least expensive option. This method is labour intensive and can generate more job opportunities. Because of its perceived social and economic benefits it is an option that should be tried for Amritsar city. However source segregation of waste is required to produce good quality saleable compost.

6. Recycling of all possible waste matter is desirable. Going by the components of waste in Amritsar city it is concluded that at least 75% of the waste could be recycled. The organic waste which amounts to 55% can be recycled to produce compost. The other recyclable waste constitutes paper, plastic, metal, glass amounts to 8%. Wood waste amounting to 4% is recyclable as it can be used as a component of organic recyclable matter or as fuel. Inert debris amounting to 25 % is primary the left over construction wastes. A proportion (at least 50%) of it can be assumed to be recyclable as demolition/ construction waste can be used as filler material in new constructions, road constructions, in landscape design, etc.

Possibilities for Integrated Solid Waste Management

Based upon the options discussed above, the low cost options of composting, reuse and recycling seem best suited to the city context. Capital

intensive technologies are not suitable for the fact that the waste quality does not seem to suit the application of these technologies and also for another reason that application of such technologies may lead to the informal sector losing out on their livelihoods. It is stressed that informal waste collection system should be central to any proposal to be implemented for solid waste management in the city. The waste collection, transfer, separation, recycling and/or disposal activities of informal waste workers constitute economically valuable services that must be recognized by the AMC. The AMC should as an initial step towards integrating the informal sector operations provide organizational and technical support to the waste pickers through the formation of waste picker co-operative societies or micro-enterprises divided into 65 sanitary wards falling under the already delineated 24 sanitary divisions in the city. The existing staff of the AMC at the level of sanitary inspectors could initially focus upon making source segregation in their sanitary division a mandatory exercise by leading an awareness campaign amongst the residents of their respective divisions.

The ragpickers (other than children) already operating in the sanitary divisions should be registered and designated as official domestic waste pickers in addition to the sanitary workers already working in those divisions who will not be collecting waste from houses but do street cleaning and collection outside the homes. The ragpickers will be responsible for collecting waste directly from homes in a mobile cart with two containers separating the organic from the dry and recyclable waste. They will transport the waste to the transfer station in that sanitary division. The recyclable waste can be retained by them while the organic/ other waste would be deposited at the transfer station. This would enable them to collect waste at source, thus minimizing the time spent in searching through garbage piles and being exposed to dangerous conditions. The ragpickers would be entitled to get a fixed amount decided by the municipality directly from the households and also be able to make money from recycling the waste. Also the health risks could be reduced by getting recyclable material at the source; the need to visit dumping grounds would be reduced.

There would be no requirement of community waste containers in residential areas if the waste could be collected from source. However in areas of commercial activity this would continue to be required but important would be to design them in a manner that waste from commercial areas also gets segregated within the same container. Designating transfer stations in each sanitary ward would be required as a priority as these would be the

collection points from where waste would be transported further. Small loans could be made to individual entrepreneurs or to groups of informal collectors organized as cooperatives to purchase locally made collection vehicles. Alternatively they could be rented out by the municipality for a nominal amount. Once the organic waste is deposited by the waste picker at the transfer station, it could be collected by the private contractor or the municipality vehicle incase it wants to be directly involved in composting activity. The organic waste could be transferred to a designated site where windrow composting or other form of composting could be done. For the success of the composting programme it is important that the composting must be market-oriented. Also rather then one centralized composting unit there could be more decentralized units run by private operators. The municipality could give the organic waste to a private entrepreneur and could also charge some amount/tonne of organic waste depending upon the financial profits that the he is likely to make.

The inert debris is usually lying on road sides and should be directly taken by the municipality trucks from there and transported to a site for depositing inert debris. However it is assumed that a portion of inert debris is recyclable and the option of having private construction companies or small time contractors have access to the inert debris might be a good solution to cut down on the quantity that will finally go into the dumping ground. The final refuse to go to the landfill would be significantly reduced through the model as above. It might then be feasible for the AMC to try option of a sanitary landfill for dumping rest of the refuse which is absolutely not recyclable.

Conclusions

The adoption of a waste management model of the nature as above mentioned would create jobs, reduce poverty, extend the collection and improve final disposal of wastes, minimize public investment on personnel, equipment and facilities, reduce pollution and risks to human health and the environment. Informal refuse collectors render clear economic and environmental benefits to society, and their activities should be improved and supported. An integrated system could help solve the seemingly intractable problem of municipal solid waste management in an economically viable, socially desirable and environmentally sound manner. Thus the role of the ragpickers needs to be thought about in context of comprehensive city level waste planning and management wherein researchers and waste managers can further examine how current practices that contribute to waste reduction, recovery, reuse and recycling can be integrated into the present systems. Finally it may be said that the

above mentioned suggestions need more exhaustive study. However whatever be the nature of the policy interventions initiated for waste management in a city it is my argument and belief that given the current role of the informal sector in city waste management operations, this sector should not be excluded while formulating an intervention. This sector needs to be embraced and not displaced and if interventions pertaining to waste management exclude this group, their very livelihoods would be lost and so would the ideology of pro-poor growth so vocally being hyped by the government.

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Whose Programme and Whose City is it? A-priori Assessment of Proposed Smart Cities of West Bengal

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Introduction

The urban population in India is more than 31% as per 2011 census and the process of urbanization is characterized by increasing absorption of population in large cities. A neo middle class is emerging in urban India which has the aspiration of better living standards. Metropolitan cities are expanding to accommodate the huge urban population. In 2011 the class I cities (defined as cities having a population of over 100,000) holding 60.79% of the total urban population and the rate of population growth in these Class I cities has been consistently increasing over the past five decades, from 45% in 1961-71 to 62% in 1991-2001 (Chattopadhyay, 2008)[1]. On the other hand there is a decrease in population growth in small urban centres (Karmakar, 2016)[2]. It is beyond the capacity of metro-cities to contain such huge population in the near future. So it is obvious that these metro and big cities are facing challenges to their civic infrastructure and service delivery capabilities (Sahasranaman 2012)[3]. Therefore to eradicate lopsided urbanization it is necessary to focus on cities with smaller size compared to the metro cities. In the 1980s, research on small towns and their role in economic development, as an interface between agriculture and urban market and their position in ensuring rural-urban linkages and economic development was important (Raman and Alemma, et.al. 2015). In the sixth five year plan (1980-1985) for the first time emphasis was laid on the development of small and medium towns. The sixth five year plan notes the negligence of urban services and infrastructure in the small, medium and intermediate towns and pointed out that it is necessary for the future efforts to focus on such towns. With this vision Integrated Development of Small and Medium Towns (IDSMT) was launch in 1979-80. Later it was subsumed in Urban Infrastructure Development Scheme

[1] *Chattopadhyay, B (2008): "Public Policy and Sustainable Development of Small Towns– A Review" NIUA, New Delhi*
[2] *Karmakar, J (2016) Trend, Pattern and Key Challenges for Urban West Bengal, India, Pratidhwani the Echo, Volume-V, Issue-I, No 61-74*
[3] *Sahasranaman, A (2012) Financing the Development of Small and Medium Cities, Economic and Political Weekly, vol xlvil*

for Small and Medium Towns (UIDSSMT). In 2014 Smart City Programme (SCP) was introduced for satellite towns and towns with tourist, religious and economic importance. So it is evident that interest on small and medium towns' development emerged a few decades ago and focus was only to develop infrastructure, while smart city programme focuses beyond infrastructure issues. As proclaimed in the smart city website regarding the purpose of the project "The programme will provide a major impetus to planned urbanization in India with manufacturing as the key driver. In addition to new Industrial Cities, the programme envisages development of infrastructure linkages like power plants, assured water supply, high capacity transportation and logistics facilities as well as softer interventions like skill development programme for employment of the local populace"

So it is a programme which tries to redevelop the non metro cities as planned cities based on manufacturing and trading with the support of information technology. The programme is crucial because it is a direct effort to reduce the pressure on metro cities and its 'solution' initiatives will be heavily based on technology. This paper's main focus is to explore the concept of smart city and its approaches. It also examines the proposed smart cities of West Bengal, their existing condition and the proposals to make them smart cities. So it is a-priori evaluation means estimating the projected future impacts of a programme undertaking before its implementation. The analysis is based on published smart city plans of the concerned towns and census data of 2011. After the introductory section, second section elaborates the concept and approach of smart city. Third part will give a brief description of materials and methods. Fourth section will analyze the proposed smart cities' existing condition and plans, and future impact with brief outline of smart city programme. Conclusion will be drawn based on the analysis of the case studies.

Smart City: Concept, Approach and Players

The phrase smart city has become popular in the discourse on urban development in India. The pertinent question is what makes a city smart? There is no consensus among the scholars and policy makers regarding determinants of smart city. It is worthwhile to point out that the concept of smart city did not arise overnight. Immediately after the industrial revolution, cities of Europe were facing a lot of health problems and policy makers tried to solve them through town planning. Around this time the concept of Garden City (Howard 1902) was developed by Howard. Post Second

World War, implementation of garden city as a project spread across the different continents. From 1960s onwards scale, size and growth of urban population along with climate change again posed a serious challenge to the policy makers of both south and north. New visions regarding urban form came into the light and scholars of Europe and US tried to depict city in a different form like Walking City[4] (Herron 1964) and Plug-in City[5] (Cook 1964). In 1990 'smart growth movement' started and it advocated new policies for urban planning. As a result post 1990 new urban agenda (NUA) came about and its focus lay on promotion of sustainable cities and other human settlements that are environmentally sustainable and resilient; socially inclusive, safe and violence-free; economically productive; and better connected to and contributing towards sustained rural transformation.[6] Cities appear to policy makers and scholars in this period as different form and more inclined to the technology based solutions like Digital City (Graham, 1997), Intelligent City (Florida, 1996), Smart City (IBM, 2008).[7] Both the terms smart city and intelligent city are often used to denote the use of digital spaces and advanced ICTs (Information and Communication Technologies) to enhance the activities, service, and economic development potential of cities.[8] The term smart become popular when some big trans-national companies (CISCO 2005, IBM 2009) adopted the term for the application of complex information systems to integrate the operation of urban infrastructure and services. European Smart City Project defines smart city with six characters which includes 1) smart economy (competitiveness) 2) smart people (social and human capital) 3) smart governance (participation) 4) smart mobility (Transport & ICT) 5) smart environment (natural resource) and 6) smart living (quality of life). "A smart city is a city performing well in a forward looking way in these six dimensions, built on smart combination of endowments and activities of self decisive, independent and aware citizens".[9]

IBM (2008) proposes smart city concept under its smart planet initiative programme. It asserts that "A smarter city is one that uses technology to transform its core system and optimize the return from largely fine resources. By using resources in a smarter way, it will also boost innovation, a key factor underpinning competitiveness and economic growth. Investment in smarter system is also a source of sustainable employment. Smarter cities make their system instrumented, interconnected and intelligent".[10] Therefore it's apparent how cities are trying to improve urban life through sustainable integrated solutions. And how are they developing good quality services for people and businesses? It is expected that quality of life and urban services will be improved

[4]Walking city imagine a future in which borders and boundaries abandoned in favour of a nomadic lifestyle among groups of people worldwide.
[5]The plug in city set up by large scale network structure containing access ways and essential service to any terrain.
[6]UN Habitat (2016) World cities report 2016: Urbanization and Development: Emerging issues, United Nations Human Settlements Programme, New York
[7]IBM, (2009), Smarter Cities: New York 2009,available at http://www.ibm.com/smarterplanet/us/en/smarter_cities/article/newyork2009.html
[8]Hans Scha_ers, Nicos Komninos, Panagiotis Tsarchopoulos, Marc Pallot, Brigitte Trousse, et al.(2012) Landscape and roadmap of future internet and smart cities. Technical Report, Fireball
[9]European smart City Project (2014) available at http://www.smart-cities.eu/?cid=01&ver=3
[10]IBM, (2008), A Smarter Planet: The Next Leadership Agenda, Council on Foreign Relations available at access on 31st August 2016

not only for its so called 'citizen' but also those who are living in the slums. These are some of the challenges for cities when becoming 'smarter'. The interest in Smart Cities lay in fact in the towns branding or image and the ability to attract the people, younger members of what Richard Florida has called the Creative Class (Florida, 2003).[11] Florida's work has emphasized that while globalization has created a 'flat' world (Friedman, 2005)[12], this applies to commodity industries. The high value jobs that make a city attractive are concentrated in a relatively small number of cities and regions (Florida, 2008).[13] Graham and Marvin (2001) call this phenomena a splintering urbanism, as development concerns only chosen groups of inhabitants, while increasing fragmentation and polarization in the area.[14]

As Batty (2008) unflappably observes "In the study of cities, there are many competing paradigms"[15] and smart cities will also provide a new form of instrumentation for observing in fine detail the way that people use the city and so may enable new approaches to theories of cities.[16] Very few scholars paid attention to the theoretical framework of smart city. West (1999) noted that built environment works as complex system like a biological system. Batty (2008) shares almost the same view and he refers to this as an 'organic order'. He noted that an urban system is governed by the structures of connecting networks. In biological systems these networks are the nervous system or circulatory system and in urban systems it is the social and economic network.[17] Both the works are based on scaling laws of Zipf (1949).[18] While some other scholars accept that cities function as complex systems, they introduce new concepts such as interconnection, feedback, adaptation, and self-organization in order to provide understanding of the almost organic growth, operation, decline, and evolution of cities. The works of Allen[19] (1997) and Portugali[20] (2000) followed this approach. Diamond (2005) focuses beyond the complex physical structure of the city and notes that complexity is needed not just in its physical networks – its roads, its buildings and its communications, but also culturally, and economically. There are perhaps pockets in a city that are 'mono-culture', which make them very difficult places in which to thrive when the external conditions are changing. This applies both at the poor end of the spectrum in areas with a high index of multiple deprivation and in rich societies.

From an operational perspective there are a number of players in smart city. Important stakeholders of smart city comprise local government, policy maker as well as industry and major global ICT companies which are 1) IBM with its smart planet initiative 2)

[11]Florida, R., (2003), The Rise of the Creative Class, Basic Books, New York
[12]Friedman, T., (2005), The World Is Flat, Farrar, Strauss, and Giroux, New York
[13]Florida, R. (2008), Who's Your City?, Basic Books, New York
[14]Graham, S., Marvin, S. (2001) Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition, London: Routledge.
[15]Batty, M. (2008), The Size, Shape, and Scale of Cities, Science, vol. 319, pp.769-771
[16]Harrison, C and Donelly, A. I (2013) Theories of Smart Cities,
[17]Batty, M. (2008), The Size, Shape, and Scale of Cities, Science, vol. 319, pp.769-771
[18]Zipf, G. K., (1949), Human Behavior and the Principle of Least Effort, Addison-Wesley, Cambridge, MA
[19]Allen, P. M., (1997), Cities and Regions as Self-Organizing Systems: Models of Complexity, Gordon and Breach, Amsterdam
[20]Portugali, J., (2000), Self-organization and Cities, Springer-Verlag, Heidelberg

Microsoft with application and platforms for smart mobility 3) CISCO with intelligent urbanization initiative.

Policy-makers show their concerns regarding the programme which opens up space for corporate entities to sell technological solutions. These solutions would address problems such as health, traffic congestion, energy supply, water supply, waste management and environmental quality. This top-down and centralized perspective is then typically criticized from a bottom-up perspective, which focuses on 'smart citizens' and open platforms (Townsend 2013; Greenfield and Kim 2013).

Method and Materials

Researchers have paid specific attention to building a rigorous and sophisticated methodology to evaluate plans (Alexander[21], 2002; Baer[22] 1997; Hendrick[23], 2001). Based on time dimension three types of plan evaluation have been identified. A Priori evaluation means estimating the projected future impacts of a planned undertaking before its implementation. Secondly, evaluation in progress is done simultaneously with project or program implementation. It is intended to monitor implementation and assess conformance to predetermined goals. Third approach is ex post facto evaluation, involves measuring or assessing the impacts and effects of the subject undertaking – policy, plan, program or project – to evaluate its outcomes. The paper focuses on a prior evaluation to assess the proposed smart city of West Bengal.

Literature on determinants of urban development is heavy and some of the indicators are popular among the policy makers. This paper traced some of the popular indicators and prepared a set of indicators to see the basic development gaps in the proposed smart city and compare the same with proposed plans. A. Caragliu, Ch. Del Bo and P. Nijkamp's (2011) city smartness evaluation was based on the correlation of six proxies: employment in entertainment industry, multimodal accessibility, length of public communication system, e-administration (no. of forms accessible on-line) and proportion of population with 3-4 level education with GDP PPS per head.[24] Lombardi (2012) prescribes six urban development determinants of a smart city. These include smart governance, smart economy, smart human capital, smart living, and smart environment.

The paper prepares a set of indicators to comprehend the development gap within the proposed smart city and these gaps are crucial for a city to become smart. Following Table 1 shows the details of indicators.

[21] *Alexander, e. r. (2002), 'The public interest in planning: from legitimation to substantive plan evaluation', Planning Theory, ii, 226-49*
[22] *Baer, W. C. (1997), 'General plan evaluation criteria: an approach to making better plans', Journal of the American Planning Association, 63, 329-44.*
[23] *Hendrick, R. K. (2001),'Evaluating comprehensive plans (paper submitted to the APA National Planning Conference, New Orleans,14 March*
[24] *Caragliu, A., Del Bo, Ch., Nijkamp, P. (2011) 'Smart Cities in Europe', Journal of Urban Technology, vol. 18, issue 2, pp. 65-82.*

Table 1: Proxies for smart city development and their weights in Development Gap Index

Sub Index	Proxy	Weight in sub index	Weight of sub index
Economy	Unemployment rate in % Marginal workers in %	0.5 0.5	1/6
Human capital	% of people of no higher education Dependent population %	0.5 0.5	1/6
Governance	% HH with no internet connection % HH with no bank account	0.5 0.5	1/6
Environment	Population density in sq.km Number of months in a year when CO_2 concentration exceeds 2mg/m^3	0.5 0.5	1/6
Quality of life	% of HH that do not have own house % of HH with no safe drinking water supply	0.5 0.5	1/6
Mobility	Distance from state capital in km % of HH with no four wheeled vehicle	0.5 0.5	1/6

Source: Szczech[25] 2014, modified by author

On the basis of these indicators an equal weighted composite index has been prepared. Presented index is based on six sub-indices corresponding to six characteristics (economy, people, mobility, governance, environment, quality of life). So far, in this first version of the index, each sub index is given the same weight (1/6) and weights for proxies divided equally within each sub-index. Weighted average of points granted for each proxy within sub index to a city gave value of a sub-index (yet, since proxies are given the same weights it is in fact an arithmetic average). Aggregated composite index is a weighted average of sub-indices values. In the presented version of the index each of the sub-indices has however the same weight, hence average value is actually equal to arithmetic average. Data has been collected from census of India, West Bengal Pollution Control Board and from concerned municipalities.

[25] *Szczech E (2014) Concept of "Smart City" and its Practice in Poland. Case Study of Łódź City, REAL CORP, Tagungsband , Vienna*

Smart City Mission Programme (SCMP): A Brief Outlook

Smart city mission programme in India was announced in the budget speech of July 2014. The objective of the programme is apparent from its declaration, which said "As the fruits of development reach an increasingly large number of people, the pace of migration from the rural areas to the cities is increasing. A neo middle class is emerging which has the aspiration of better living standards. Unless, new cities are developed to accommodate the burgeoning number of people, the existing cities would soon become unliveable. The Prime Minister has a vision of developing 'one hundred Smart Cities', as satellite towns of larger cities and by modernising the existing mid-sized cities". It is evident that smart city mission is a redevelopment programme for the large satellite towns. The focus of the programme is threefold which includes competitiveness, sustainability and quality of life. Competitiveness refers to a city's ability to create employment opportunities, attract investments, experts, professionals and people. While quality of life refers to safety and security, inclusiveness, entertainment, ease of seeking and obtaining public services, cost efficient healthcare, quality education, transparency, accountability and opportunities for participation in governance. The whole programme is based on the four pillars of sustain ability which include social, physical, institutional and economic infrastructure. Now choice of the 100 cities is based on the following criteria 1) one satellite city of each of the cities with a population of 4 million people or more (9 cities). 2) Most of the cities in the population range of 1 – 4 million people (about 35 out of 44 cities) 3) All State/UT Capitals, even if they have a population of less than one million (17 cities) 4) Cities of tourist, religious and economic importance not included in above (10 cities) 5) Cities in the 0.2 to 1.0 million population range (25 cities). However some political parties raised questions regarding the selection procedure and the exclusion of some state capitals.[26] Financial stake of the programme is 50: 50 for both state and centre. It is important to note that in each smart city centre will provide 500 cr while state will also contribute the same amount for the programme.[27]

Smart City programme started through smart city mission challenge. It was the first step of the programme. It is vital because it will suggest and propose the planning measure of the particular city. Cities had to participate by preparing an initial draft plan. The plan needed a city wide Concept Plan, Smart City Proposal (SCP), Convergence of Area Plans with National and State level sectoral financial plans. A city wide Concept

[26] *Kumar, M (2016) Nitish takes a dig at Centre on Smart City scheme, The Times of India, Patna, available at, access on 31st August 2016*
[27] *Government of India (2014) Smart City: Mission Statement and Guideline, Urban Development Ministry, New Delhi*

plan is basically the old and revised City Development Plan (CDP) and if the town has no such plan then a new CDP had to be developed. Plan was to include the Smart City Vision and key challenges identification, situation analysis (physical, economic, social, legal and institutional infrastructure) as is description, review of previous plans, interventions and documents of all departments and agencies (e.g. City Sanitation Plan, City Mobility Plan, and Master Plan) and an overall strategy focused on Smart City objectives and targets. While SCP would consist of Strategic Action Plans for Area Developments based on the three strategies: (a) Area Improvement (retrofitting) (b) City Renewal (Redevelopment) and (c) City Extension (Green field) and one City-wide (Pan-city) initiative that applies Smart Solutions to the physical, economic, social and institutional infrastructure. Redevelopment meant replacement of the existing built-up environment and enabling co-creation of a new layout with enhanced infrastructure using mixed land use and increased density. The area had to be more than 50 acres, identified by Urban Local Bodies (ULBs) in consultation with citizens. The new area would be with mixed land use, higher FSI (Floor Space Index) and high ground coverage. In retrofitting, an area consisting of more than 500 acres was to be identified by the city in consultation with citizens. Depending on the existing level of infrastructure services in the identified area and the vision of the residents, the cities were to prepare a strategy to become smart. Since existing structures were largely to remain intact in this model, it was expected that more intensive infrastructure service levels and a large number of smart applications would be packed into the retrofitted Smart City. Greenfield development was to introduce most of the Smart Solutions in a previously vacant area (more than 250 acres) using innovative planning, plan financing and plan implementation tools (e.g. land pooling/ land reconstitution) with provision for affordable housing, especially for the poor. Greenfield developments are required around cities in order to address the needs of the expanding population.

It is apparent from the components of the smart city mission challenge programme that Area Developments programme gets over emphasized instead of city wide smart solution plan like pan city solution. Redevelopment and retrofitting are both area based and need a particular amount of land and if the amount of land is less than what is prescribed in the guidelines it would not be considered. So both components are exclusionary in nature. The other aspect of the redevelopment is that it asserts the replacement of the existing infrastructure, so there will be

displacement. The question is what types of measures would be taken to restore the life of the displaced people. Such issues are missing in the Guidelines. Greenfield development is another component of the programme which needs to acquire land or pool the land and it should be contiguous with concerned town and not less 250 acre. It would be very difficult to get a contiguous land of that amount especially when the state will be land critical like West Bengal.

Proposed Smart City of West Bengal: A Critical Appraisal

This section is divided into two parts – the first part deals with existing conditions of the town and latter part will critically assess the proposed plan with respect to the city. Four towns of West Bengal participated in the smart city challenge programme. These four cities are Durgapur, Haldia, Bidhannagar and Rajarhat New Town.

Durgapur, the steel town was built in the late 1950s along the bank of Damodar River and close to the coal mines. The biggest public unit of the township is the steel plant township which covers some 30 square km but is built sparsely. The town developed as decentralization strategy of development of the central government. The basic urban plan was simple: the east-west Grand Trunk Road linking Calcutta with Delhi was used as a divider between the industrial and residential areas. The residential areas were laid out to the north of the Grand Trunk Road. In 1958 Durgapur Development Authority was formed as a statutory body to ensure the planned and coordinated development of the complex. Later in 1980 Asansol Durgapur Development Authority (ADDA) was formed and in October l996 Durgapur Municipality was formed.

Bidhannagar was developed on marshy land immediately east of Kolkata. In 1953 government of West Bengal got made a plan by a consultant from The Netherlands. The plan proposed 9.7 sq km of city's expansion along with intensive development of agriculture, horticulture and fisheries. In 1964 Messer a Yugoslavian firm made a sketch plan for Biddhannagar. Salient features of Messer's plan included a town centre with commercial, administrative and other public, semi public building to form the focus of the new community. Later a modified version of the Messer plan was prepared by the Salt Lake Reclamation and Development Circle of the Irrigation and Waterways Department, Government of West Bengal. Only road layout was retained and other elements of land use of that plan were radically modified. In 1995 Bidhannagar became municipal board from a notified town. Around this time 21 sq km (Large part of the East Kolkata Wetland of nearly 32 Bherris)

were added with the planned town. So now the total area of the town is 33.5 sq km. In 2014 the municipality came under the newly formed New Town Kolkata Development Authority (NKDA) from Kolkata Metropolitan Development Authority (KMDA).

Table 2: Some Aspects of the Proposed Smart Cities

Town Name	Area in sq km	Distance from Kolkata in km	Population 2011	Working Population	Scheduled Population
Durgapur	154	168	581,409	35.12	7 lakh
Bidhannagar	33.5	7.9	218,323	39.24	3.5
Haldia	109	125	200,762	30.48	NA
Rajarhat New Town	30.75	17	40,000	NA	7.50

Source: Census of India 2011, Master plan, Area Development Plan & Draft Development plan, Concept Plan of Durgapur, Bidhannagar, Haldia and Rajarhat New Town respectively

Haldia the port town was built as a substitute of the Calcutta port which was facing the problem of shortage of water. The Calcutta Port Commission along with port of London authority made a master plan for Haldia in 1962 and it was placed before the World Bank for approval in 1963, with a request for a grant of Rs 14 crores to start with. About 35.84 square km area for port based industrial urban complex in Haldia was planned. The Town and Country Planning Department prepared an outline development plan for Haldia in 1975. In 1977 government of West Bengal constituted the 'Haldia Development Authority' for accelerating the development of Haldia Industrial Urban Complex. In 1997 Haldia become a municipality from a notified town.

Rajarhat New Town is a recently developed major planned satellite township located in the peri urban areas of Kolkata. Township project was officially announced by the government of West Bengal on the 1st June 1995. To accommodate the population growth in the Kolkata Metropolitan Area (KMA), the State Government conceived development of the New Town Project at Rajarhat (NTP) in the early nineties to provide land for construction of houses for a population of 7.50 lakh for all income groups with emphasis on housing for economically weaker sections and lower income groups as well as developing a new Business Centre.

Population Dynamics

It is already noted above that proposed smart cities are not the product of 'spontaneous organic growth'; these towns have emerged with direct intervention of the state. Decadal population growth and its share with respect to their district urban population would be significant to understand the future role of these towns. Will these towns be able to attract the population in future? It is very important for a town to attract population because as proposed in objectives of the smart city these are the towns of tomorrow.

Table 3: Decadal Growth Rate of Population

Towns	1961-71	1971-81	1981-91	1991-01	2001-11
Durgapur	39.55	5.08	3.65	1.58	1.48
Bidhannagar	0	0	20.15	6.41	3.12
Haldia	0	11.18	37.50	7.00	1.76

Source: Census of India 1961, 1971, 1981,1991,2001,2011.
Data compiled by author

Population growth figure shows that in the last decade Bidhannagar population growth is higher compared to other towns. It is important to note that Durgapur one of the oldest towns among them has population growth is above 1. Rajarhat New Town is recently formulated town so data is not available.

Table 4: Urban Population Share (UPS) with respect to respective District Urban Population

District	Towns	Area in sq Km	1961	1971	1981	1991	2001
Burdwan	Durgapur	154	9.97	29.88	33.44	32.71	24.49
Medinipur	Haldia	109	0	3.31	4.92	15.77	20.65
North 24 Pgs	Bidhannagar	31.3	0	0	1.30	3.08	3.52

Source: Census of India 1961, 1971, 1981,1991,2001,2011.
Data compiled by author

Population share of the towns with respect to their districts shows that Durgapur and Haldia contain more than 20% of the urban population. What is notable is that North 24 pgs is highly urbanized compared to the other two districts because it is the district contiguous with Kolkata. But both the

towns Durgapur and Haldia have lot of potential to attract population in near future. The three towns also contain slum population even after physical planning effort. As per 2011 census Durgapur, Bidhannagar and Haldia Contain slum population of 7.68%, 35.52% and 22.34% respectively.

Socio-Economic Issues

To be a part of the smart city people have to use technology. So education is vital as far as the operation of technology is concerned. Illiteracy rate is very high in Durgapur and Haldia compared to Bidhannagar. Expectedly female illiteracy is greater compared to their male counterparts in each town.

Table 5: Educational Status in the proposed Smart City

Towns	Illiterate	Male Illiteracy	Female Illiteracy	No Higher Education
Durgapur	22.46	18.10	27.18	85.86
Bidhannagar	16.81	14.36	19.32	69.43
Haldia	21.13	16.69	25.98	91.29

Source: Census of India, 2011, calculated by author, Figures are in percent

Male female illiteracy gap is lower in Bidhannagar but in case of the other towns it is very high. Level of education is also a vital aspect as noted earlier with regard to the use of smart technology. In fact, very few people have completed graduation and a large section of the population has not even passed secondary school.

Table 6: Households (%) with Computer, Internet connection and Bank Account

Towns	HH with no Computer	HH no Internet Connection	HH with no Bank Account
Durgapur	81	93.23	24.14
Bidhannagar	58.22	70.58	13.12
Haldia	86.92	94.17	28.83

Source: Census of India 2011, Calculated by author.

One of the important aspects of the smart city programme is the use of Information Technology and to do that people need computer and smart mobile connected with internet. About 81 percent of households in Durgapur, 58 percent in Bidhannagar and 86 percent in Haldia have no computer. Those households that have computer but have no internet connection is also high in number. In such a reality how can the programme sustain for longer period;

that is a profound question to be asked. Even if free Wi-Fi service is given under the project to the people it would be useless because most of the people are unable to use that. The programme did not encourage any training for the people so that they can use internet. Bank account is now essential for transfer of money for any social benefit and commercial purpose. Large number of households has no bank account in those towns.

Another important aspect is the job opportunity in the town. It is mentioned that Durgapur and Haldia developed because of the establishment of public sector units (PSUs) at the time of their foundation. Now the problem is that some of these PSUs are being shut down and therefore job opportunities in these towns are shrinking.

Table 7: Employment Growth, Unemployment and Labour force of the proposed Smart Cities

Towns	Growth of Working Population 2001-2011	% of Unemployment	% of Labour force
Durgapur	2.94	40.82	68.15
Bidhannagar	3.45	22.53	66.49
Haldia	1.60	41.65	61.47

Source: Census of India 2011& 2001, Calculated by author

Growth of working population shows that Bidhannagar has the highest growth of working population compared to the other two towns. Bidhannagar has less unemployed persons compared to the other two towns. It is because Bidhannagar town is very close to Kolkata and the town also has its own IT hub.

Basic Utility Services

The increasing need for the provision of urban services is a major challenge in urban India. Hundred percent coverage of basic services to all the households is one of the significant aspects to secure a better quality of life. In reality this does not happen. Lack of services is very high especially in the non metro cities because of their limited power to attract investment. Proposed towns of West Bengal are not an exception to this lack of services. Supply of safe drinking water in the household is very small in case of Haldia compared to the other two towns Durgapur and Bidhannagar. The quality and the quantity of water supply are very poor in those towns.

Table 8: Basic Utility Services to Household (HH) (%)

Towns	HH with No safe water	HH with No electricity	HH with no latrine
Durgapur	56.54	15.40	29.77
Bidhannagar	39.09	5.33	26.53
Haldia	90.53	21.40	60.84

Source: Census Data 2011, computed by author

Electricity supply to the each of the town is not fully covered. In Haldia the coverage is very poor and in case of Bidhannagar the coverage is a little better. Households with no latrine within the premises are very high in all the proposed towns and it is highest at the town of Haldia and lowest in Bidhannagar. So it is evident that the basic services in the proposed towns are not existing. Area based strategy of smart city mission will further widen the gap of intra town services.

Basic Development Gap in Proposed Smart Cites of West Bengal

Six indicators have been identified to see the development gap among the proposed smart cities. These indicators are primary components to be a smart city. Gap in each indicator shows how far they are from the ideal situation. Durgapur shows maximum gap in the sectors of economy and mobility while Haldia has maximum gaps in the sectors of human capital, governance and quality of life. Bidhannagar has maximum gaps in environmental sector.

Table 9: Basic Development Gap in Proposed Smart Cities

	ECON	HC	GOV	QL	MOB	ENV	Development Gap
Durgapur	0.63	0.49	0.54	0.50	0.68	0.40	0.540
Bidhannagar	0.33	0.45	0.35	0.44	0.23	0.67	0.412
Haldia	0.54	0.56	0.60	0.57	0.58	0.43	0.546

Note: ECON: Economy, HC: Human Capital, GOV: Governance, QL: Quality of life, MOB: Mobility, ENV: Environment,
Source: Calculated by author

Combination of six indicators shows how far each town is from the ideal situation which means providing basic suitable socio-economic and environmental conditions. Haldia is located farthest from the ideal situation whereas Bidhannagar is closer to ideal situation compared to the others. It suggests that both Durgapur and Haldia are far from providing basic amenities to their residents. Situation at Bidhannagar is also not satisfactory enough.

Plan's Recommendations

Smart city plan for individual city has been made based on citizen's interaction, suggestions and public opinion. Recommendations of the smart city plan can be categorized into two parts. These two sections include area based development plan and pan city solution. Area based development plan has three strategies namely redevelopment area, retrofitting area and green field area. The plans have first identified their vision for the town and noted people's choices regarding priorities of the smart city. Following are the visions of the each town.

Table 10: Vision for the Smart City

Towns	Visions
Durgapur	Clean, Green and Smart Durgapur
Bidhannagar	Clean, Green, Safe, Socially Embracing, Livable, and Progressive city attracting new age service professionals
Haldia	Smart sustainable port city
New Town Rajarhat	A service hub providing best in class urban infrastructure facility and government services, preserving cultural heritage of West Bengal

Source: Draft of smart city plan for Durgapur, Bidhannagar, Haldia and New Town Rajarhat, 2015

It is evident that there is no unanimous vision for smart city because each city represents a different character altogether so requirement has to be different. Some terminologies used in the visions have broader connotations like 'sustainability' and 'smart', while some are very specific. It is important to note that proposed smart city of Bidhannagar wants to attract “new creative class”. It raises some crucial questions like who are the “new creative class”. What will happen to those who are not in the purview of so called 'new creative class'? The other concerns include will it create a barrier for migration of traditionally skilled people and will it be inclusive?

Now it is important to look at the area based proposal which is claimed necessary to be smart.

Table 11: Proposed Area for Area Based Development Strategies (ABDS)

	Proposals		
	Redevelopment (mini 50 acre)	**Retrofitting (mini 500 acre)**	**Green Field Development (mini 250 acre)**
Durgapur	City Centre Area with 550 acre	No specific mention	No specific mention
Bidhannagar	Sector I, II & III	No specific mention	No specific mention
Haldia	Old municipal colony near Durgachak (51 acre)	Durgachak to Manjusree (650 acre)	Nayachar, an island (11000 acre)
New Town Rajarhat	Action area 1A, 1B, 1C (960 acre)	No specific mention	No specific mention

Source: Source: Draft of smart city plan for Durgapur, Bidhannagar, Haldia and New Town Rajarhat, 2015
Note: selected first options for ABDS have been mentioned, other options also exists in the plan

Area based strategic plans itself is exclusionary and will remain confined to a particular place. Area based plans have three strategies as noted earlier but most of published draft plans of West Bengal did not identify the area for each of the strategies rather they prescribe a single strategy of redevelopment for the towns. It shows the inadequacy of visions and smart plans. Draft smart plan of Haldia has mentioned the areas for each of the strategies but the areas for redevelopment and retrofitting are overlapping. One of the interesting strategies is the Greenfield area development. Except Haldia, the other three towns did not mention any specific contiguous vacant area for this particular strategy. It is because land acquisition is very crucial for the state authority and Haldia draft smart plan mentions the area for Greenfield development is not a contiguous and it's a riverine island. Major thrust for area based development is to include intelligent transportation and mobility (Smart bus stop, Kiosk system, Passenger Information System, Bus terminal, etc), IT enabled services (public space Wi-Fi zone, e-governance, CCTV at public place) use of solar energy and drainage management etc. though some specific suggestions have been made for individual towns like canal front development and generating energy from waste.

People's opinion has been taken to identify curative measures for the city wide problems. It is interesting to note that people's response was not confined only for IT connectivity and e-governance. Response was diverse in nature. Old towns (Durgapur, Bidhannagar and Haldia) residents' response mainly focused on improvement of the transport and mobility systems of the town, solid waste management, water supply (both quality and quantity) management, education, drainage and sewage management. However people's acceptance of IT connectivity and e-governance could not be undermined in these towns. People's response in case of newly formed New Town Kolkata is a bit different where 73% of the people wanted to focus on the IT connectivity and e- governance as well as transport and mobility.

Table 12: People's Responses for Pan City Solution

	Durgapur	Bidhannagar	Haldia	New Town Rajarhat
Transport and Mobility	19	10	9	16
Solid Waste Management	13	0	4	0
IT Connectivity & Municipal e- Governance	28	23	5	73
Housing	9	0	25	0
Water supply management	1	19	13	0
Health Management System	3	14	13	0
Safety	2	14	0	11
Power supply	0	1	4	0
Education (Primary, Secondary)	5	7	8	0
Drainage and Sewage management	6	0	6	0
Others (sports, environment sustainability)	14	12	13	0

Source: Draft of smart city plan for Durgapur, Bidhannagar, Haldia and New Town Rajarhat, 2015
Data compiled by the author, figures in percentage

People's response is clearly able to identify the cities' actual needs. It shows that application of technology is important but social and economic infrastructure is also crucial for implementation of the programme. Draft plans' proposals are clear but how they could be implemented is still opaque.

Conclusion

Focusing on 'towns of tomorrow' i.e. non metro (small, medium and large) cities is absolutely necessary to step into a stable urban future especially for India. These towns and cities need programmes to sustain their existence but the question is what should be the area of focus. This paper tries to understand the smart city concept as well as the smart city mission programme in a broader context. It also sheds light on the proposed smart cities existing condition and draft plans for smart city mission. It is apparent from the discussion that smart city has some major constraint within the programme itself and the challenges of implementation also varies across the states. The crucial issue is that each of the proposed towns is lacking in social and economic infrastructure and despite that the smart city mission focus only lies in the use of technology. So this paper raises the question regarding the validity of the programme and relevance to large sections of the people. The programme is exclusionary and will fail to incorporate all the people of the towns because it prefers so called 'new creative classes' and it only concerns itself about chosen groups of inhabitants. Interestingly, a new concern regarding this project is expressed by government of West Bengal itself. Due to dissatisfaction of area based development concept and higher concentration of funds for a single city in smart city project, top state officials noted that “from Smart City, we are now moving towards Green City which is much more sustainable”. State's disagreement and green city notion itself raises questions regarding the program's validity as well as logic of implementation. Ultimately the state government decided to withdraw its participation from the programme.

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Strengthening Democracy through Local Self-Governments

K. Ganesh Babu

Introduction

A nation develops from its roots and for a nation to develop we need a strong base and in a country like India, the base is the local self-governments - municipalities, panchayats, etc. These are the grassroots of democracy in our country. It gives a good amount of exposure to the people who participate in the governance and running of these institutions, in both political and social aspects. In rural areas, the self-governing bodies are the panchayats and in urban it is the municipal councils and corporations.

In India, villages have always been considered as strength of the country. Village is a type of institution that governs itself contributing majorly in the growth and development of the country. The soul of India lives in villages and a majority of 60% of the total population currently live in rural areas and villages. These villages have a basic governance system called Panchayat, with a Sarpanch. This system is an image of the modern courts, with a judge. Here, the judge is the Sarpanch and decides all matters vis- a- vis the village and its affairs. The decisions by the Panchayat and the Sarpanch are final. In India, the Panchayat Raj is the local self-government.[1]

After the passage of the 73rd Constitutional Amendment in 1992, the states were expected to decentralize their authority to the institutions of self-government at the local level. The purpose was to take democracy to the grass-root level so that the people should manage their own affairs at that level. Only the people themselves know what is best for them and what needs to be done. The idea was not only to entrust the people with the power of decision-making but also to give them the authority and capacity of governing themselves. The Zilla Parishad for the most part, performs coordinating and supervisory functions. It coordinates the activities of the Panchayat Samithis falling within its jurisdiction.[2]

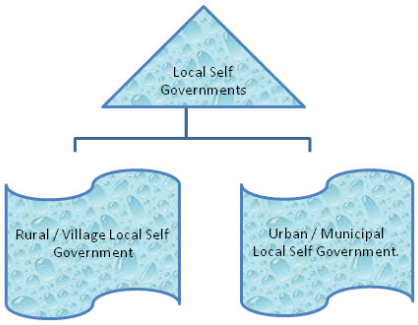
Objectives

The main objectives of present study are: 1. To study the Success of the Democracy which depends on Local Self-Governments, 2. To analyse the Grassroots Democratization through Networks of Social Mobilization, 3. To examine the Democratic Decentralization for Good Governance.

Meaning of Local Self- Government

Local self-government has meant the government of a locality, in respect of certain functions, by the residents themselves. The modern territorial state being too large to be governed effectively and well from one centre, there arises the necessity of delegating vast powers to subordinate officials as the central body has neither the necessary time nor the requisite knowledge of local conditions to do more than merely lay down broad outlines of policy. Absence of such decentralisation leads to concentration of power in the hands of those officials; the larger the country and the more varied the conditions of its different parts, the greater is the scope for official domination and despotism. Hence, the need for developing local self-governing institutions, whereby the people of each locality may, instead of submitting to uniform policy as laid down from above and as applied by the local officials, assume control over matters affecting the locality.

There are mainly two types of local self-governments in India. 1. The Village Local Self-Government and 2. The Municipal Local Self-Government.



The Village Local Self-Government:

The village local self-government is the village or Gram-Panchayats. The Zilla Parishad also belongs to this category. Gram Panchayat is an excellent example of democratic set-up of India. The elected representative of Gram Panchayat is Sarpanch. There is also a reservation of women in Gram Panchayats. The main source of revenue of Gram Panchayat includes property and other taxes, and grants from the State government and Zilla Parishad. The functions of Gram Panchayat include supply of water, construction, repair and maintenance of roads, lighting of roads, public health, hygiene and sanitation, development of agricultural activities, etc.

Municipal Local Self-Government:

Municipal local self-governments are the governing bodies of urban areas. Examples include Kolkata Municipal Corporation, the municipalities of the small size cities, the Kolkata Metropolitan Development Authority, various town or city Improvement Trusts, the Port Trust, the Cantonment Board of the Army, etc. The functions of municipal corporations and municipalities include town planning, water supply, road, preventive healthcare and hygiene, street lighting, etc.

In India, the local self-government institutions are of both the Indian and the Western types. The Village Panchayats (or Gram Panchayat) system is purely an Indian concept and the Zilla Parishads are mainly of Indian origin. However, the concepts of other aforesaid local self-government institutions are mainly borrowed from the West.

Concept of Local Self - Government

The concept of local Self - Government is a very old model in India. It attained its pinnacle under the later Cholas or the Imperial Cholas of Tanjore. It declined under the onslaught of feudalism during Muslim rule and revived under the British period, with Lord Ripon's Resolution in 1882. After Independence, the Gandhian ideal of GramaSwaraj greatly influenced the founders of the Constitution. India being the land of the village, there was emphasis for the creation of village panchayats. Restoration of panchayats to their pristine glory has been an article of faith during our freedom struggle. Hence with the dawn of Independence and framing of the Constitution of India, Article 40 was incorporated in the Constitution. It runs as follows: the State should take steps to organize village panchayats.

Significance of Local Self-Government

The significance of local self-government lies in the numerous benefits that it bestows upon the inhabitants of the areas it operates in. It functions as a school of democracy wherein citizens are imparted political and popular education regarding issues of local and national importance. It develops qualities of initiatives, tolerance and compromise- so essential for the working of democracy. It not only relieves congestion at the centre but it also helps the increasing power of democracy. It stands positively for the distribution and diffusion of power leading to administrative de-concentration and de-centralization. Being closer to the original base, it finds solutions for local problems more efficiently. It provides facilities for meeting minimum basic needs. It also serves as a reservoir of talent for local and national leadership.

Government of India formulated e-Panchayat Mission Mode Project for e-enablement of all the Panchayats, to make their functioning more efficient and transparent. Applications except Geographic Information System (GIS) namely Area Profiler, Service Plus, Asset Directory, Action Soft, Social Audit and Trainings Management have also been launched on National Panchayat Day. Under the National Panchayat Portal, dynamic websites have been created for Panchayats. Local Governance Directory captures details of local governments and assigns unique code to all Panchayats to ensure interoperability amongst all applications of Panchayat Enterprise Suite. It also maps Panchayats with Assembly and Parliamentary Constituencies.

The importance of local self-government has increased even more after Indian Independence. These institutions are expected to not only provide for the basic civic amenities for the safety and convenience of the citizens but also mobilize local support and public cooperation for the implementation of various welfare programmes. Another benefit of the local government is that the transmission of power from bureaucrats to the democratically formed local government has positively checked the influence of bureaucracy. Thus, the local government ensures close relationship between the people and the higher level of governments through this device of communication.

A democratic form of government must sustain by a system of vigorous local self-government institutions. Local government institutions provide an opportunity to the people to participate freely and actively in the government which they formulate for their respective areas. These are necessary to encourage and foster initiative, independence and enterprise on the part of the people. While inaugurating the first local self-government minister's conference in 1948, our Late Prime Minister Pt. Jawaharlal Nehru said, "Local government is and must be the basis of any true system of democracy. Democracy at the top may not be a success unless built on its foundation from below". Prof. Laski says Local government offers the best opportunity to the people to bring local knowledge, interest and enthusiasm to bear on the solution of their problems.[3]

Success of Democracy depends on Local Self-Governments

The success of democracy depends on the decentralization of power. Through this system of local self-government, people can obtain their democratic rights. Through this system, power can be properly decentralized and every individual can get the scope to develop his or her personality fully and properly. The local self-government institutions are the best centres for imparting democratic thoughts and education. People prefer democracy because they want to live in an environment of equality and liberty.

The local self-government creates that scope for enjoying democracy. It is through these local self-governments that the local problems are considered, solved adequately and properly. It also reduces the heavy responsibilities of the central and the state governments and establishes democracy in a wider context. Since the members of the local self-government are local people, they can realize and understand the gravity of local problems more seriously than the administrators of the state or central government and can effectively solve them.

In local self-government, the members have close and intimate contact with the local people. Naturally, it remains rather free from corruption and acts with real social welfare in mind. To implement various economic plans in local and regional levels the local self-government institutions are far more helpful than the state or central government. It also inspires the local people to participate actively in various governmental activities.

Local Self-government generally unites the people with democracy and encourages them to participate in its activities without any bias or prejudice. Naturally, it can consolidate the political values and faith of ordinary people and thereby influences the political activities and political culture of the people. Moreover, both the central and the state governments can make various administrative experiments through these local self-governments.It thus enables the ordinary people to take active part in the lowest level of administration. Naturally, the political socialization of local people becomes possible. The local self- government is conducive to equality and liberty, and is the perfect medium for satisfying the needs and grievances of the people at local and regional levels.

Grassroots Democratization through networks of Social Mobilization

Democratization at the grassroots level requires space for the voices of the poor and marginalized to be heard through networks of social mobilization. Such a space for participation, demand for effective delivery of services and demand for accountability can strengthen the process of socio-political empowerment and capabilities of the poor. A human rights-based approach to governance is crucial for grassroots democratization. Hence, empowerment of gram sabhas is critical to the claiming of rights and asserting the voice of the marginalized and poor. Unless the legal and administrative hurdles that often constrain the effective role of the gram sabhaare removed, the potential of the PRIs will not be realized. It is important to recognize that there are entrenched pathologies of caste discrimination, patriarchy and identity-based political dynamics at the grassroots level. It is thus very important to have a safeguard

mechanism to ensure transparency and accountability. There can be systematic efforts for participatory governance assessment such as social audit and people's report card, to make sure that PRIs are not captured by the elite or by one political party or group.

The 73rd and 74th Amendments provide us a unique opportunity for democratization, social accountability, effective service delivery, poverty eradication and reduction of corruption and a more participatory democracy. In spite of all the economic growth, there is still entrenched poverty and social and economic inequality in India. When there are islands of prosperity, surrounded by a sea of poverty and inequality, the real participation of everyone as equal citizens would be more challenging than is assumed. We may have to go miles before realizing Gandhi's dream of Gram Swaraj.

The 73rd and 74th Constitutional Amendments, arguably substantive amendments since the adoption of the Constitution, envisage panchayats as institutions of local self-governance. The three-tier system of local governance is meant to build synergies between representative and direct democracy and participatory governance, resulting in deepening of democracy at the grassroots level. However, though there is a huge gap between the promises of substantive local self-governance and the realization of true political devolution, three-tier panchayat raj system of local governance still offers great possibility of transferring power to the people.

Substantive democratization works when all people are empowered to participate in governance, ask questions, take decisions, raise resources, prioritize the social and economic agenda for local development and ensure social and political accountability. Such a vision of democracy requires democratization from below and a true devolution of power to the people. The nurturing of local democratic culture and local self-government would be the most important means to realize the promise of Indian democracy: an inclusive, capable, participatory, accountable and effective direct democracy at the grassroots level.[5]

The 73rd Amendment to the Constitution of India in 1992 prescribes rules for elections at the lowest level, the third tier of government called local self-government. The idea behind these provisions is to ensure democracy at this level and provide financial autonomy at the grassroots level with local body grants and special funds made available by the state government.[6]

Democratic Decentralization for Good Governance

Good governance demands respect for human rights, rule of law, strengthening of democracy, promoting

transparency and capacity in public administration. The responsiveness of the state and its institutions to the needs and aspirations of the people and inclusive citizenship are imperative to good governance. Democracy depends upon the equality of all human beings, their right to participate in social and political transformation and the right to development, to live in dignity. Panchayat Raj is a system and process of good governance. Villages have always been the basic units of administration in India since ancient times. The Gram Sabha can become the cornerstone of the whole Panchayat Raj institutional set-up, thereby of the Indian democratic system.

Gandhi's concept of democratic decentralization bears the stamp of his passionate belief in non-violence, truth and individual freedom. He calls it Panchayati Raj or village Swaraj. He wanted to see each village a little republic, self-sufficient in its vital wants, organically and non-hierarchically linked with the larger spatial bodies and enjoying the maximum freedom of deciding the affairs of the locality. Gandhi wanted political power to be distributed among the villages in India. Gandhi preferred the term 'Swaraj' to describe what he called true democracy. This democracy is based upon freedom. Individual freedom in Gandhi's view could be maintained only in autonomous, self-reliant communities that offer opportunities to the people for fullest participation.[7]

Decentralization can be defined as transfer or dispersal of decision-making powers, accompanied by delegation of required authority to individuals or units at all levels of an organization even if they are located far away from the power centre. Decentralization signifies the devolution of powers and authority of governance of the Union Government and State Governments to the sub-state level organizations, i.e. Panchayats which are local self-governments in India.

Benefits of Local Self-Government

Local self-government offers an excellent opportunity to the people to bring their local knowledge, interest and enthusiasm to bear on the solution of their own local problems. Since it is the wearer who knows where the shoe pinches, people of the locality are often in the best position to judge the utility of decisions, which affect them vitally. This is specially so when the state is concerned with benevolent or nation building functions.

A police - state which is merely concerned with the maintenance of law and order, would offer little scope to the residents of a locality to make any substantial contribution to the solution of local problems. It is when activities like sanitation, lighting, road making and education, have developed that the diversity of local conditions is revealed and the need for intimate knowledge of local conditions becomes imperative.

Moreover, the provision of social amenities in a locality raises the question of cost, and when the benefits of a measure are confined to a particular locality, it appears reasonable that the people of that locality should pay for it.

The most important reason for the establishment of local bodies is that it gives an opportunity to the citizens to take active interest in local affairs. It teaches the citizens the lessons of co-operation, compromise and fellow feeling. The citizen should know that by taking a creative interest in the solution of his local problems he can promote his own good and that of his neighbourhood; he can realize the essential identity of his interests with those of others.[9]

Limitations of the Local Self-Government

The local self-government system has some obvious limitations. It is alleged that the services rendered by the local self-government often become discriminatory. The local self-government often makes residential arrangements for the elderly people or hostel accommodation for the handicapped students, which may be considered as discriminatory services.

If the local self-governmental institutions run the administration, it may encourage not only regionalism but also narrow-mindedness and such a tendency will always go against the democratic system practiced at the national level.

However, refuting these allegations, the exponents of the local self-government institutions hold the view that such local self-governments are the basis of democracy and are the best way to develop political consciousness among the people. Through the local self-government, the regional and local interests are converted into national interest.[10]

Suggestions

- There should be with units of local self-government, such powers and authority, which are necessary to function effectively for empowered democratization.
- The implementation of programmes should be transparent through local self-governments in a democratic country like India.
- Local self-government should give an opportunity to the citizens for active participation in local affairs for success of the democratic governments.

Conclusion

The most successful initiatives launched by local authorities on their own with or without outside support have either provided the model for the formulation of a national programme or actually got transferred to the central level and mandated to work nationally. Local government as a public

organization, authorized to decide and administer a limited range of public policies within relatively small territory, which is a subdivision of a regional or national government. Local self-government institutions have political, financial, administrative and regulatory powers in setting the agenda for local social and economic development.

Democratic decentralization is the right given to local people to formulate and implement the welfare programmes. Democratic decentralization gives importance to people's participation. The power is decentralized from higher level to local level. The power, which is decentralized by higher level to lower level, has a democratic feeling. Democratic decentralization gives autonomy for administrative work. It demands more democracy, more power, more responsibility, activities and more autonomy for local self-government.

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Book Review

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Urbanization is an age-old phenomenon associated with rise of civilizations, when many cities of the yore represented the development of the age, as the seat of kingdom, trading places and centres of learning. Basically, it is a shift of human population as a section of rural population keeps on moving and settling in cities for various purposes- for employment, business, learning, a better way of life, culture, etc. In the modern times, cities have enormously grown in size and dimensions. A quote of Li Kegiang beautifully epitomizes the process- "Urbanization is not about simply increasing the number of urban residents or expanding the area of cities. More importantly, it's about a complete change from rural to urban style in terms of industry structure, employment, living environment and social security."Urbanization is now looked at and studied from various approaches- as demographic shift with host of amenities, engine of economic growth, inclusive social milieu, educational and cultural hotspot, and a distinct lifestyle. Urban areas have distinctive governance set up. Cities and towns provide more opportunities and avenues of employment, better education and healthcare, industries, businesses, trade, entertainment, arts and culture. The world over there is focus on urbanization as engine of growth and its contribution to national income. This is one side of the phenomenon, a bright side. Another side of the reality presents an unpalatable picture of urban life with proliferation of slums, crumbling infrastructure, pollution, congestion, urban poverty. These two opposites have engaged the attention of the governments to sustain the engines of growth and to ameliorate the negatives, to make the cities livable, comfortable for all.

According to the Ministry of Urban Development, India is in the midst of transition from a predominantly rural to a quasi urban society. Urbanization in India has become an important and irreversible process, and an important determinant of national economic growth and poverty reduction. The process of urbanization is characterized by a most dramatic increase in the number of large cities, although India may be said to be in the midst of transition from a predominantly rural to a quasi urban society. According to Census 2011, the urban population is 377 millions (31.2%). At current rate of

growth, urban population in India is estimated to reach a staggering total of 575 million by 2030 A. D. According to Census 2011, as many as 52 cities in India have population of a millionplus. It is acknowledged that this transition to a quasi-urban society, however, has not been accompanied by a commensurate increase in the supply of basic urban services like water supply, sewerage and drainage network, garbage disposal facilities, citywide roads, public transport, and public safety systems like street lighting and pedestrian pathways. The supply of land and housing has not kept pace with the increase in urban population.

The Jawaharlal Nehru National Urban Renewal Mission (JNNURM) (2005-2012), was the first major thrust on urban reforms, development of infrastructure and provision of basic services to urban poor, along with the Urban Infrastructure Development Scheme for Medium and Small and Medium Towns (UIDSSMT). The Smart Cities Mission and the Atal Mission for Rejuvenation and Transformation of 500 cities (AMRUT), both launched from 2015-16, are the successor missions representing the continuing thrust on the urban areas. The book under review provides a detailed account of problems arising from growing urbanization in India by focusing on policies and programmes of the Government to deal with the challenges posed by rising urbanization in India.

The book begins with the chapter on Approach to Urban Development, in which, the author gives an account of the rising urbanization in India with its distinct features, inter-State variations, positive and negative effects of urbanization. The author quotes from the 12 FYP document, that "the infrastructure of India's towns is very poor. Sewage, water, sanitation, roads and housing are woefully inadequate for their inhabitants. The worst affected are the poor in the towns." The author rightly points out that urbanization will be central to India's strategy of achieving faster and more inclusive growth because urban agglomeration and densification of economic activities and habitations in these areas stimulate economic efficiencies and provide more opportunities for earning livelihoods. Infrastructure facilities involve huge costs to build and maintain, which many small and medium municipalities find it difficult. This is the main reason for inadequacy of infrastructure in such towns. He makes a good case for user charge-financed approach for infrastructure development, together with accessing funds from capital markets through municipal bonds. E-governance is the toast of the time. In this respect, the author suggests development of a national level architecture to be replicated in the states, together with capacity building of the personnel of the municipalities. In cities vertical development seems to a mantra. While

admitting the advantages of this approach, the author argues for an optimum form to avoid negatives of densification in the face of rising pollution and threat of global warming. He makes a valuable point as regards the urban-rural synergy, he proposes investments in logistics, processing and packaging in rural and peri-urban areas, as they serve the varied food needs of the urban areas. The author is for strengthening rural- urban continuum. In this regard it is fitting to mention the original contribution to town planning theory by Sir Ebenezar Howard who is the founder of this approach. He propounded the concept of Garden City in (1898) that would combine the advantages of towns and villages.

The second chapter on 'Constitutional Provisions and Institutional Framework for Urban Development' is descriptive, as author has concisely given the constitutional provisions, decentralization initiative in the form of the 74th Constitutional Amendment in detail, role of the Ministry of Urban Development and various departments working under the Ministry. He has enlisted various national level programmes like the National Urban Information System, promotion of barrier-free built environment for the disabled and elderly persons, the National Heritage City Development and Augmentation Yojana (HRIDAY), the Atal Mission for Rejuvenation and Urban Transformation (AMRUT), National e-Governance Plan, and the women participation in leadership in urban local bodies.

The third chapter- 'Smart City: Conceptual Settings' is a prelude to the next chapter on 'Smart Cities Mission in India'. He rightly says that the conceptualization of smart city varies from city to city and country to country, depending upon the level of development, willingness to change and reform, resources and aspirations of the city residents. He has enumerated the key features of smart cities in terms of institutional, physical, social and economic infrastructure and various smart solutions in the form of e-governance and citizen services, waste management, water management, energy management and urban mobility. The author has cited the example of Barcelona (Spain), which according to him, is the smartest city in the world.

Smart Cities Mission in India', the fourth chapter, is also descriptive with the concise information on background, typical features of a smart city and their strategic components, preparation of Smart City Proposal inter alia, involving consulting firms, hand holding agencies, the process of selection- the short-listing and competition and selection. The total number of 100 smart cities has been distributed among the States and the UTs on the basis of equitable criteria.

The formula gives equal weight age to urban population of the State and the number of statutory towns in the State/UT. The list of 100 smart cities and those selected (33) in the first list, are listed in the chapter. The Smart City Mission will be operated as a Centrally-Sponsored Scheme (CSS) in which the Central Government will be providing financial support to the extent of Rs. 48,000 crore over 5 years, i.e. on an average of Rs.100 crore per city per year. An equal amount, on a matching basis will have to be contributed by the State/UT. Thus, nearly 1 lakh crore of Government/ ULB funds will be available for development of smart cities. The chapter also contains the details of monitoring of the Mission and convergence with other government schemes.

In the fifth chapter, which is on National Mission on Sustainable Habitat (NMSH), we get information of this Mission, which is one of the eight National Missions launched in 2008 as a strategy for combating the threat of climate change. This Mission has four components namely (1) Extension of the Energy Conservation Building Code, (2) Better Planning and Modal Shift to Public Transport, (3) Recycling of Material and Urban Waste Management and (4) Strategies and Methodologies for Mitigation.

Slums are the manifestation of urban poverty, an outcome of the acute housing problem facing the developing countries. The author dwells on this issue in the sixth chapter- Urban Housing and Slum Clearance/Development. There are a host of agencies and schemes for housing in urban areas, which are mentioned in the chapter. The author suggests the solutions that have been made from time to time by those in the know of the things. He laments the lack of any commendable progress in this sector when he says "Given the large number of activities impinging on housing directly and indirectly and the multiplicity of agencies involved, designing a framework for orderly and dynamic growth in the housing sector is a challenge to the planners."

Like housing, the urban transport sector in India is facing many issues with no satisfactory solutions to many of them. We find this analysis in chapter 7,on Urban Transport Policy and Services. The author has incisively discussed these issues and discussed many solutions that have been put forth in various forums, in the form of (i) integration of land use and transport, (ii) priority to the use of public transport, (iii) technologies for public transport, (iv) priority for non-motorized transport, (v) reducing travel demand, (vi) emphasis on railways for passing and freight transport, etc. Discussion on Metro Rail is missing in this chapter.

The author takes a review of urban health security and services in chapter 8, covering shortcomings of the public health system and attempts to address the need through the National Urban Health Mission, Sarva Swasthya Abhiyan, the alternative system of medicine (AYUSH), growth of private sector in healthcare, health insurance, Aam Aadmi BimaYojana and Rashtriya Swasthya Bima Yojana.

Education sector comprises adult education, primary education, secondary education, vocational education, higher education, medical education and technical education, every one of which has its own significance. The author has enlisted the technical education institutions in India, as a result of which India has the third largest scientific and technical work force in the world. The author has touched upon each of them, and has discussed the National Policy for Skill Development and Entrepreneurship, 2015 in detail in chapter 9.

Urban water supply, urban sanitation, sewerage and solid waste management fall among the core functions of the urban local bodies. The findings of Census 2011 show that progress on these items leaves much to be desired. Fact is that many cities and towns are still tackling the indignity of open defecation. Each of these requires detailed and analytical discourse. The author has discussed them in chapters 10 and 11 and comes up with many suggested solutions in the form of finding appropriate financing mechanisms, selective privatization and long-term planning adoption of more advanced technological measures.

The threat of climate change is concern of all the nations, and global and national actions are on to tackle the threat. Greenhouse gas emissions happen because of development activities. The global approach is to reduce the level of emissions and encouraging renewable sources of energy, adopting sustainable development practices and enhancing natural sinks of these gases in the form of forests and greenery. The author has rightly devoted a chapter (chapter 12) in which he has described the institutional framework adopted in India and various national programmes.

The economic planning done through Five Year Plans was a huge exercise of the government to marshal the resources and allocate them through priorities among the whole range of sectors. A lengthy discourse is required to discuss them. The author has briefly referred to the plan policies and allocation to urban development, in chapter 13. This is a condensed account of the national priorities and resource allocations over the FYPs.

The Seventy-fourth Constitutional Amendment has been rightly hailed as a landmark development as regards the urban local bodies, as inter alia, it

provided for setting up of State Finance Commissions to review the financial position of these bodies every five years and make recommendations in that regard. Along with this, article 280 was amended to add the provision of the (Central) Finance Commission to make recommendations needed to augment the Consolidated Fund of the States for supplementation of the resources of panchayats and municipalities. As a result of this, from the Xth (Central) Finance Commission, funds have been recommended to municipalities and the Finance Commissions have made valuable recommendations covering host of issues concerning the panchayats and urban local bodies, which form the third-tier of government. This is well presented in chapter 14.

The author has given an Appendix, which gives a brief description of the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), the forerunner national mission of the Smart City Mission.

The book is a good addition to the corpus of literature on urban development in India. A chapter on urban pollution and mention of innovation in the form of Metro Rails would have made the book more comprehensive.

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OBJECTIVES

The main emphasis of the Institute's work is to see that the local bodies can contribute more effectively to the development process and provide the citizens with better living conditions by meeting their aspirations in terms of required amenities, infrastructure and better environmental conditions, thus contributing to social and economic development of the society as a whole by better management of the human settlements. While these are the long-term objectives, the immediate ones are:

- To advance knowledge of the principles and practices of Local Government by conducting research and by organising training courses and programmes at various centres in India for officials and elected representatives in the local bodies.
- To strengthen and improve Local Government Institutions by improving their performance through education, orientation and bringing them together for common endeavor by organising specialised conferences, conventions and seminars.
- To make available a platform for members of local bodies and officials for exchange of views and ideas related to urban development and administration.
- To represent the views of local authorities supported by research work to the concerned higher authorities from time to time.
- To publish bibliographies, articles, books and other literature on matters of interest to local bodies.
- To publish journals, bulletins and other literature on different aspects of Local Government and on the working of Local bodies in different states.
- To undertake research studies in public administration, problems of local bodies and also in related topics of urban and environmental factors and arrange for their publication etc.
- To establish and maintain an information-cum-documentation service for local bodies.
- To undertake consultancy assignments in various areas of urban development and problems of local bodies with a view to improve and develop organisational, managerial and operational efficiency.

In view of the above, the Institute has been collaborating with the relevant government departments, Central and State, Universities, Organisations and Research Institutions. The work of the Institute covers several aspects involving a multi-disciplinary teamwork.

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